Bernd Jungmann, Hartmut Ring

capella 7

Perfect Notation for your PC

Version 7.1

User Guide

capella-software

capella 7, Version 7.1

Founded by Hartmut Ring

Continued by Bernd Jungmann

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Hartmut Ring

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Introduction

Welcome to *capella* 7. With *capella* you have acquired a professional tool that will assist you with all basic as well as all complex tasks of music notation. You do not have to think in terms of computer terminology, instead you can apply and use your knowledge of musical concepts. This user guide is a valuable tool to master the program.

First things first

This user guide contains answers to almost all questions you might have about how to use *capella*. But how do you find these answers?

➔ **This is how you find answers to questions about *capella:***

1. **Search the index** at the end of this user guide for keywords that relate to your question. In the help system you will find the index on the appropriately named tab. We have taken great care to list each problem under a number of different keywords.
2. Please do not give up your search if you cannot find a specific keyword. Look for alternative keywords. You can look for:
   - *Synonyms*, that is other words for the same keyword (e. g. *flag* instead of *hook*).
   - *Generic terms* (e. g. *dynamic symbol* instead of *sforzato*).
   - *Similar terms*, that is words that do not have the same meaning but that belong to the same context (e. g. *forte* instead of *sforzato*).
3. For **combinations of several words** you should first look for the noun (e. g.: instead of looking for cross-staff barline you might want to look for barline, cross-staff).
4. In some cases the index in this user guide will list **several page numbers** for one keyword. The help system however can only refer to one single incidence. If therefore the help system does not come up with what you're looking for, you might want to try the user guide as well.
5. If the keyword search is **still unsuccessful** you should try the *content* tab in the help system to find a relevant chapter.
6. You can do a full-text search in the help text. Different from other programs, which have to provide an extra tab for search, *capella's* help system is organized as a single file, so you can search the whole text by typing Ctrl+F in the help text window. It must have the keyboard focus, so simply click into it.

NB: The keyword index is especially helpful in when you are looking for a quick answer. When you're not working under time pressure we strongly recommend that you browse this user guide in order to learn where to find answers when you need them later.

What is new in *capella* 7

capella 7.0 includes amongst others the following innovations:

- **New user interface.** Configurable modern-style toolbars, standardized toolbar set-up (see page 41), multi-document-interface with tabs (page 47). Newly designed MousePiano. SystemTemplate view and score view side by side on the screen. The MousePiano can be docked anywhere on the screen (page 26**).**
- **Place holder.** When entering or deleting notes in polyphonic *capella* scores, all voices of the score behind the spot where you changed something are kept synchronized. Deleted notes are replaced with automatic filling rests. When you enter notes, previously entered automatic filling rests are used up. In all parallel voices automatic filling notes are entered. With this, you will easily keep track with your score. This new function is important especially for piano notation where you often work with invisible rests (also see page 62**).**
- **Live voice extraction.** In ensemble scores, you can switch from view of the entire score to view of single voices with the touch of one button. Changes made within a single voice will be automatically adopted to the entire score and vice versa (also see page 118).
- **Simplified system break.** When splitting or connecting systems many features are now considered automatically which had to be readjusted manually earlier. If a system break occurss within a bar, automatic barlines will be correctly set in the following system so that you don't have to set a fixed barline any more (also see page 93).
- **Score division always possible.** *capella* will automatically define stave breaks in scores with systems not containing all SystemTemplate staves. In case of single voice scores or voice extractions, whole bar rests can be summarized to multiple bar rests (see page 119).
- **Improved graphic objects.** Plain text can now be displayed with frame and can also contain commands for instrument name or bar number. Moving anchors of graphic objects has been improved. New graphic object: Octave bracket (8va). Scores of application (voice, stave, system…) can now be determined. Graphic objects in live voice extraction can be made visible or invisible. More about this in chapter page 149.
- **Sound configuration.** Sound configurations can now be separately managed for each voice of a SystemTemplate stave and can be saved in the *capella* file. (page 101).

- **Fonts for lyrics.** You can now choose different fonts for different lyrics verses (page 90). With this you can easily write lyrics or translate lyrics to any desired language. Translations can be displayed in italics.
- **Instrument data from the ScoreWizard** can now be used for later changes in existing scores (**page 101**).
- **Percussion notation improved.** Handling of note head shapes has been improved and simplified. The ScoreWizard supports sound mapping (page 119).
- **Extended script interface.** You can start an unlimited number of scripts via the plugin toolbar (page 178). Internal scripts can now directly access all *capella* score properties. With this, scripts will be more effective and easier to use. This will also make it easier to write scripts for users with vision disorders. Furthermore, the *capella* display can be directed via scripts. An example: Foot switches for flipping of pages can be implemented. *capella* scripts support Unicode (page 19).
- **Improved details:** Set printer format within the *capella* file(**page 104**), more notehead shapes, new rules for mensural barlines (**page 71**), simplified use of MusicXML files (**page 173**), position display via script, zoom with mouse wheel, scrolling left-right with mouse wheel (**page 38**), context menu via computer keyboard, polyphonic staves in ScoreWizard.
- Modified keyboard shortcut

Shift+F10 now opens the context menu. The previously used command "Join beams" for this key combination has been assigned to Ctrl+Shift+Alt+F10.

capella 7.1 contains note display improvements and several improvements for the support of users with vision disorders.

A word about copyright

Before you purchased your copy of *capella* you probably looked at the offers from various other suppliers and found that our products are considerably cheaper than those from the competition. But in spite of our affordable pricing our products are as comprehensive and professional as other high-end products. Others might charge you higher prices in order to compensate for potential illegal copies of their software. We do not follow this kind of pricing policy.

We know that product activation is unpopular, but it reminds the user that s/he may legally install the software on only two separate computers, as long as they cannot be operated by two separate people simultaneously (e. g. laptop and PC both belonging to one user). We ask you not to pass on your personal license number. This will enable us to continue with further research and development of *capella* and to maintain our affordable pricing policy in the future. Thank you!

Hardware and software requirements

In order to use *capella* you will need Windows 8.1, 8, 7, or Vista. Windows XP can no longer be supported since April 2014.

Ideal specification:

- A sound card which is General MIDI compatible and which supports simultaneous input and output. Simultaneous input and output is required in order to allow you to play in from a MIDI keyboard while *capella* is sending out the metronome tick.
- A piano keyboard with MIDI connections will allow faster – also real-time – note entry than either the mouse or PC keyboard.
- Preferably at least 256 MB of RAM. This will allow large scores to be edited without a noticeable drop in responsiveness. The amount of memory required varies depending on the version of Windows you are using. Generally speaking, if other mainstream software such as Microsoft Word runs satisfactorily then *capella* will as well.

capella installation

Installation

Insert the DVD. The DVD will normally start automatically after a few seconds. Sometimes Windows is set up to prevent auto start. If the DVD does not start please start the program start.exe in the DVD's main folder.

The installation program is self-explanatory. You can choose the program directory for the *capella* installation yourself.

First Start

When starting *capella* for the first time a personal *capella* folder is created for the current user (see page 38).

capella as Demo Version

capella initially installs itself in demo mode. Once you have entered your license number, capella is converted to the full version.

Using the demo version, you can open the example scores, play, and completely print them. Of course you can do that with scores from other sources. You can also write a score from scratch, edit it, play it back and test print it. This test print will not be complete. Saving a new or a changed score is disallowed, though.

There are also restrictions with some of the *capella* scripts: As the script interface allows saving the score, such scripts can be tested only with scores that have not been changed since opening.

Licensing *capella*

Any time you start the *capella* demo version, you will be prompted to license your software. You will have received your license number together with the CD and manual after ordering *capella*.

After you have entered your license number you can use *capella* with all its features for 30 days. Even if the on-line activation should fail initially, you will still have plenty of time to contact capella-software AG by email or phone.

To successfully license your software under Windows 8, 7, and Vista you need **administrator rights** . If you are working at your own computer and you have never heard of this term then you can assume that you have administrator rights.

> **NB:** A standard installation of Windows XP includes one main user with automatic administrator rights. This main user installation is not without its risks, especially when connected to the Internet. You therefore have the option of setting up a user with limited user rights. Such users can use programs, but cannot install them. They are better protected against malicious Internet attacks. These users can also enter the licensing information.

➔ **How to license**

1. Start *capella*. The licensing dialog will appear.
2. Enter your license number into the appropriate field. You will find the license number either on the **License Card** that came with your DVD or in the e-mail that we sent to you after you purchased the on-line license.
3. Click OK to close the dialog.
4. *capella* will now verify the license number. This concludes the licensing procedure.

If you cancel the licensing procedure *capella* remains in demo mode. Every time you start the program you will be given an opportunity to enter the license number.

The license card or the e-mail containing your license number is your personal proof of ownership. Please put it in a safe place as you might need it again for a re-installation in the event of hardware problems.

Activate *capella*

After licensing *capella* it must be activated on your computer to make it permanently functional.

Activation prevents the unauthorized installation of invalid licenses and multiple installation on several computers. To distinguish your computer from others *capella* computes a checksum based on your specific hardware configuration. If you change your

hardware after installing *capella* it is therefore likely that you will need to re-activate *capella*.

You can rest assured that during the entire activation procedure no personal data is transmitted.

Please bear with us for this inconvenience, but at the same time, you will continue to benefit from our low prices and outstanding value for money.

NB: For more information about product activation, please go to http://www.capella-software.com

You will need administrator rights for activation (see page 16).

➔ **How to activate *capella***

1. Start *capella* after you have successfully entered your license number. The activation dialog appears, showing the license data and your hardware code.
2. Enter your e-mail address.
3. Connect to the Internet and click OK.

capella will now connect to the authors' server and transmit the license data and the hardware code.

Immediately thereafter the server will calculate the activation code and transmit it back to your program. You will see a confirmation dialog. If the activation procedure should fail, or if you do not have an active Internet connection, you can contact capella-software AG by telephone at the number that appears on your screen.

NB: If you own two computers (e. g. PC and laptop) that will not be used by two different people simultaneously you may install and activate *capella* on both computers.

On-line updating

With any comprehensive program such as *capella* it is impossible to avoid small errors and inconsistencies. As these are discovered they will be corrected via free updates, which can be downloaded from the capella-software AG web site. Starting with version 7.1-01, *capella* can do that automatically. If you do not have on-line access from your PC you can download the update to any PC and transfer it by disk or USB memory stick to your PC. In this case, you have to initiate the update manually.

➔ **How to update *capella* automatically**

1. Go to the *capella* menu HELP → ONLINE UPDATE...
2. In the dialog box appearing, choose a time interval for online update check (When starting the program, Daily, Weekly, Monthly, Never).
3. Check the check box *Update immediately after closing the dialog*.
4. Close the dialog with OK.

➔ **How to update *capella* manually**

1. Go to the *capella* menu HELP → ABOUT CAPELLA. It will display your version of *capella* - for example *capella* version 7.1-01.
2. Go to the download site: `www.capella-software.com`
3. Check whether the current demo version has a higher version number than yours.
4. If that is the case download the installation file to your computer. Make sure you know where it is being saved! The upgrade consists of a single file for Windows Installer (i. e. a file whose name is ending in .msi). This means that it will run if you double click on it once it has been downloaded to your PC.
5. Ensure that you are logged on with administrator rights.
6. Double click on the installation file that you downloaded. It will start and automatically update *capella*. Your license will be kept valid, you will not be prompted to input your license code after installation.

Uninstallation

You can uninstall *capella* 7 in the usual Windows manner.

➔ **How to uninstall *capella***

1. If you have put your own scores into one of the *capella* folders you should move them out of there into a safe folder.
2. Open the Windows Control Panel
    - Windows XP: START → CONTROL PANEL → ADD OR REMOVE PROGRAMS
    - Windows 8/7/Vista: START → CONTROL PANEL → PROGRAMS → PROGRAMS AND FEATURES.
1. Select *capella* 7 from the list of programs and follow the on-screen instructions.

Overview of the User Guide

Experience shows that weighty user guides are rarely read by most users, so we have made every effort to make the user guide readable by using separate sections, which are short and relevant to your different needs. Especially the need to get started quickly!

To start using *capella* quickly you should read Chapter 2: Quickstart. There you will be introduced to the important elements of *capella* in about one hour.

Chapter 3 explains the basic ways of working with *capella*. If you are an experienced user you can just glance quickly through this chapter.

The remaining chapters provide more detailed documentation about *capella*.

The last chapter contains tables with shortcut commands and a list of the *capella* font characters. It also contains a schematic of the design of *capella*.

If you have a specific problem you can check the index in the user guide or use the FIND command in the Help file (see menu: HELP → KEYWORD SEARCH → FIND)

NB: If you have purchased the download version of *capella* without user guide (in which case you are currently reading the help system) you can print the user guide. It has been placed in the *capella* program folder as `user-guide.pdf`. The pages are slightly larger than half A4 paper. This allows you to print two pages per sheet or even two pages per side per sheet. Open the print dialog of Adobe Reader and select "Multiple pages per sheet" in the **Page Scaling** drop-down list. Then set **Pages per sheet** to "2".

The developer's package

As a supplement for advanced users and capella script developers there is a developer's package available at the ~~German~~ capella-software webpage:

`http://www.capella-software.com/Download_capella.cfm`. It contains information about capella file formats (binary, CapXML 1.0, CapXML 2.0), script programming. Be aware that parts of this information may be available only in German.
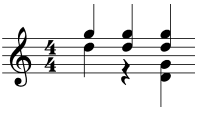
Important terms

In this User Guide we have been careful to try and use music terminology consistently as there are many cases where several words are in general use for the same specific item and even more confusingly the same word can mean several different things.

***capella* terms**	**Music terminology**
Staff: This is the set of five lines onto which the notes are written. Staves can also have fewer than five lines (for early music, for example) or more than five lines (for teaching purposes, for example).	Five-line-system
Staff line: One of the lines that make up a staff, usually five.	Staff line
System: The word system is commonly used to describe the combined set of staves that represent the voices/instruments that are playing simultaneously in a score.	System, line of music
Score: Each *capella* file, i. e. even a monophonic notation.	All voices/instruments of a polyphonic piece of music (usually used by the conductor).
Chord: Combination of several notes of identical value attached to one note stem. Individual notes can also be interpreted as a chord with only one note.	Minimum of two different notes.

Chords and multiple-voice staves. There is a clear distinction between those two terms. A chord is a combination of several notes of the same value.
Notes of different values can appear below each other on a multiple-voice staff, with different values belonging to different voices/instruments.

This figure shows two quarter notes split into two voices, one two-note chord for the upper voice with a rest for the lower voice and then two two-note chords, one for each voice.



Staff line gap (Slg).

This measurement is used in various dialogs. This defines the distance between two staff *lines* (not staves!). Wherever you set measurements with this definition, these measurements will automatically adjust to increasing or decreasing the size of notes.

American and British English

There are some differences in music terminology between American and British English, which you might not be aware of. In some cases, both variants may be understood more or less as synonyms in both countries, in some other cases, the one variant will sound or look strange in the other country. **This document is using American English**. We try to use the following translations consistently:

British English	**American English**
stave	staff
semitone	half step
breve	double
semibreve	whole note
minim	half note
crotchet	quarter note
quaver	eighth note
semiquaver	16th note
bar	measure
whole bar rest	whole measure rest

Conventions used in this book

Various typefaces are used in this book to identify specific objects.

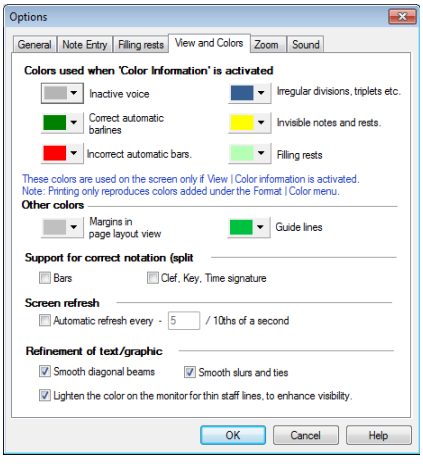
Type	Meaning
Appoggiatura	In-line headings to assist the user to quickly find the relevant text.
Cancel	A button that must be clicked with the mouse.
Tempo Control	Label of a dialog box, radio buttons, drop-down list, text field or other dialog box elements.
FILE → OPEN...	A menu name (FILE) with its option (OPEN) that the user must select. The ellipsis (...) indicates that a dialog will open upon selecting the option.
Ctrl+A	A shortcut key combination, meaning: while holding down the Ctrl key press the A key.
“Violin”	Inverted commas indicate text that the user must enter into a field (without the inverted commas) or an item that must be picked from a drop-down list.
`capella.dat`	The name of a file.
➔ **How to**	Step by step instructions to achieve a certain result.

Assistance for users with vision disorders

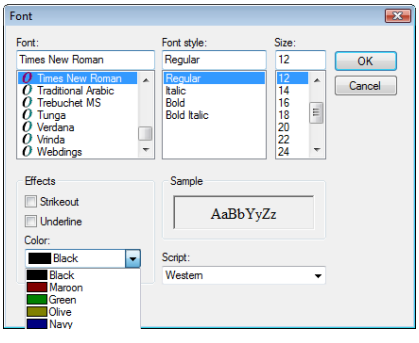
Users with vision disorders such as color blindness or low vision are referred to the following options where color settings can me modified and size of staves, spaces and notes can be adjusted. These color settings are used whenever **Color Information** has been switched on, either with F11 or :

Select menu: EXTRAS → OPTIONS → VIEW AND COLORS where you can define colors for:

- Inactive voice
- Irregular divisions, triplets, etc.
- Correct automatic barlines
- Invisible notes and rests
- Incorrect automatic barlines
- Margins
- Guide lines



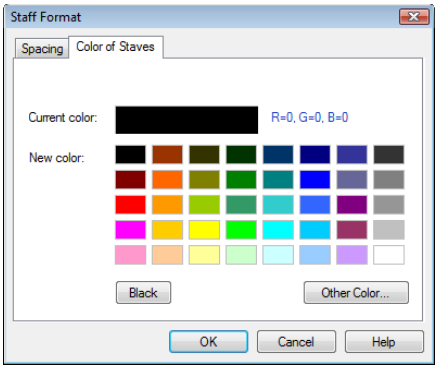
Select menu: FORMAT → VOICES (LYRICS) → LYRICS and click Other Font to set character size and color for Lyric Text.



Select menu: FORMAT → STAVES... → COLOR OF STAVES to select a suitable color for staff lines.

Similarly you can access menu: FORMAT → SYSTEMS... → COLOR OF SYSTEM BRACKETS to choose a suitable color for these objects as well.

At menu: FORMAT → COLOR (NOTES, GRAPHICS)... → COLOR you can select suitable colors for notes and graphic objects.
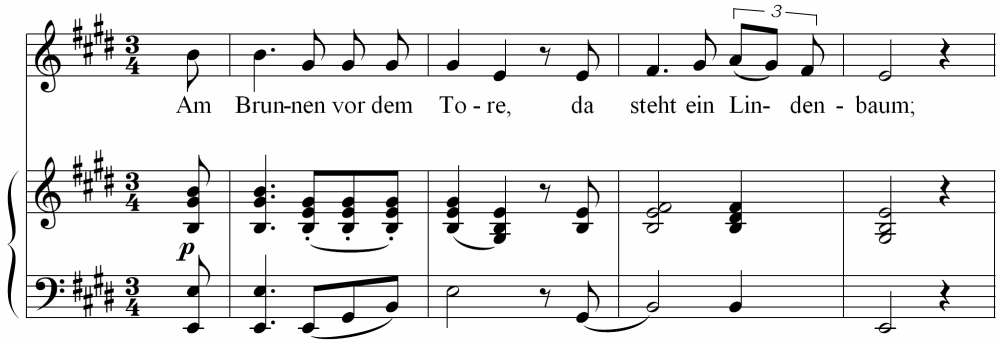


To improve on-screen readability you can adjust the zoom setting in the drop-down list on the view toolbar 

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Quickstart

This chapter will introduce to you the essential *capella* commands. You can work through this chapter in the on-screen help system. A mouse-click on the task bar will quickly switch between *capella* and help. If you use an extra wide screen, you can also display *capella* and help side by side.

Our objective is to produce the following piece of music:



The structure of a *capella* score

You will benefit more from this quickstart tour if you have a general understanding of the structure of a *capella* score (our name for all documents created with *capella*):

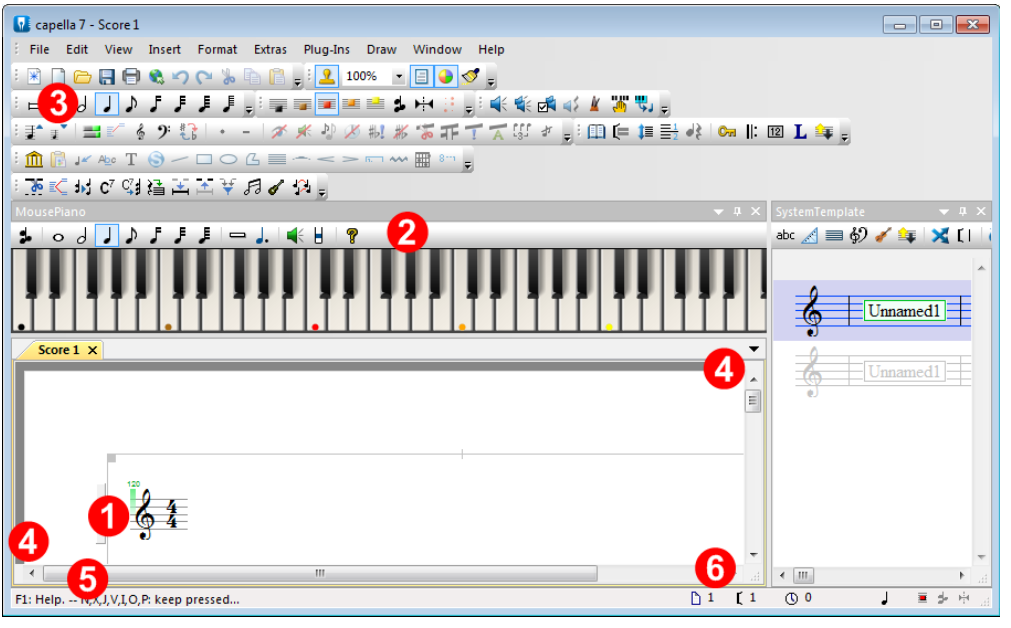
- A score consists of one or more systems (lines of music), which are automatically laid out over a number of pages as necessary.
- A system consists of one or more staves.
- A staff consists of one or more staff lines.
- A staff contains one or more independent voices (or instruments).
- A voice is a continuous ribbon of music for a single voice or instrument. You can place up to six voices onto one staff in *capella*.
- A chord can contain up to 15 notes played simultaneously in one voice.
- One or more graphic objects can be anchored to each chord or rest. These graphic objects will move with any subsequent movement of the chord.
- All the staves used anywhere in the score must be contained in the underlying SystemTemplate. This is where the staves' properties are determined.

More about the SystemTemplate in the main section of this user guide (see page 100).

The figure above shows a system consisting of three staves. Each staff contains one voice only. In the first staff all chords consist of one note only.

The *capella* screen

After starting *capella* for the first time, your screen display will look like this:



1. In score view you see a single staff as your starting point.
2. The MousePiano is one of several methods to enter notes. For the purpose of this exercise you will practice PC keyboard entry.
3. The toolbars can be freely re-arranged with the mouse. They can be *torn off* from their position at the top and moved as separate small windows or docked to any of the four edges of the display. You can change the arrangement of the toolbars if they are not arranged as space saving as shown above (see page 39).
4. You can drag these little rectangles downwards in order to split the current window. You can then work on two different sections of your score without having to skip backwards and forwards.
5. The left part of the status bar displays a series of shortcut letter commands. Press any of the letters to see its function in association with other keys. Also, while selecting a menu option, its purpose is explained here.
6. The right part of the status bar displays the **Control Center**:
    - Page number and system number of the cursor position,

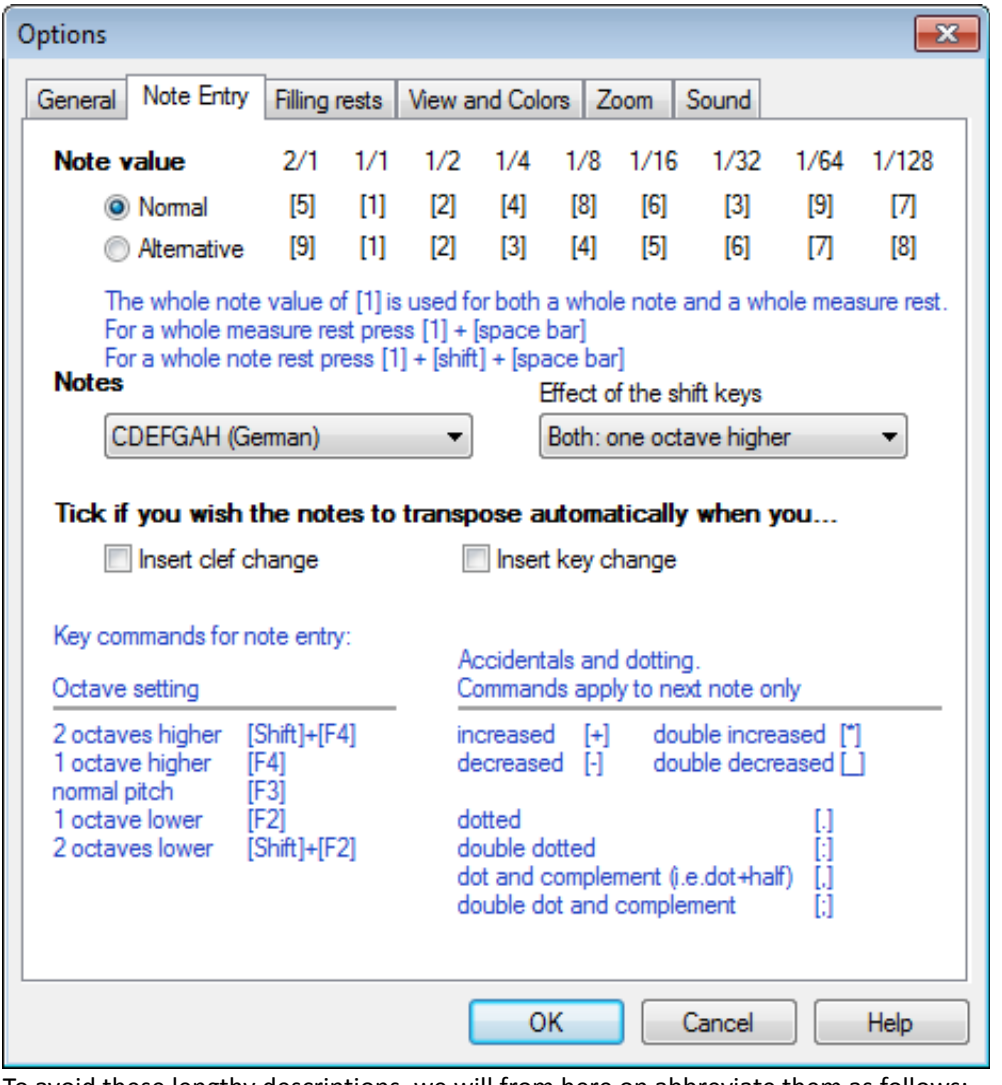
- the total accumulated note value of all notes/chords/rests to the left of the cursor,
- the current note value and if applicable accidentals and dots,
- the currently selected octave for note entry,
- an indicator for chord mode; if inactive, *capella* is in normal note entry mode,
- an indicator for mouse note entry (cross hair); when active, notes can be placed with the mouse directly onto a staff.

Elements with a 3-D frame can be clicked to modify their value. However, most of these commands can be set much quicker with keyboard shortcuts.

Important basic settings

Before you begin with your exercise you need to take a look at the basic settings that define how *capella* works.

Open the menu EXTRAS and select OPTIONS. The **Options** dialog box contains several tabs. Click on the tab for NOTE ENTRY.



To avoid these lengthy descriptions, we will from here on abbreviate them as follows: Select menu: Extras → Options → Note entry.

- In section **Note value** you find two different keyboard layouts. For this introduction it should be set to **Normal**.
- In the **Notes** section you can choose which pattern of letters to use to represent note pitch when entering notes via the PC keyboard. Use the one referred to as **International**. The one using the pattern CDEFGAH is for German use. In Germany they use the letter H to represent the note B, and they use the letter B to represent the note Bb.
- The right hand drop down list **Effect of the shift key** is preset so that holding down the left shift key lowers note entry by one octave and the right shift key raises note entry by one octave.

- Dark blue text in dialog boxes indicates shortcut key commands. They will work when the dialog box is closed.

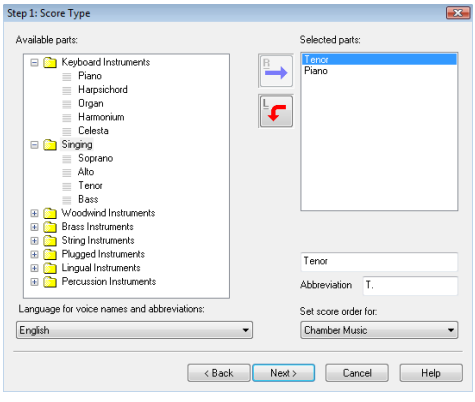
The **Options** dialog box is the area where all the basic operating settings are made. If you do not want to accept any changes you may have made here, simply click Cancel. While you are in this dialog box you might like to use this opportunity to look at all the other tabs.

The ScoreWizard

For this example you require a system with three staves and suitable spacing between the staves. You could add to the default single staff on the screen but for this example you should use the ScoreWizard as your knowledgeable assistant.

Select menu: FILE → NEW → SCOREWIZARD... On the left of this menu option is an icon  with a star. This is the icon that you can press to go straight to the ScoreWizard. You will also find it on the standard toolbar  .

A dialog opens, listing the steps of the ScoreWizard. Click Next to display step 1.



Click on the **+** signs in the list of **Available parts** to open the relevant detailed lists of instruments and voices. As you are setting up a score for one voice with piano accompaniment you must open the group of **Keyboard Instruments**. Doubleclick on “Piano” to copy it into the list of **Selected parts** on the right. Do the same for **Voices** and add “Tenor” to the right.

Select a **Language for voice names and abbreviations** from the drop-down list at the bottom left of the dialog. Although this is not really relevant for your case, as *Lieder* are usually notated without voice and instrument descriptions.

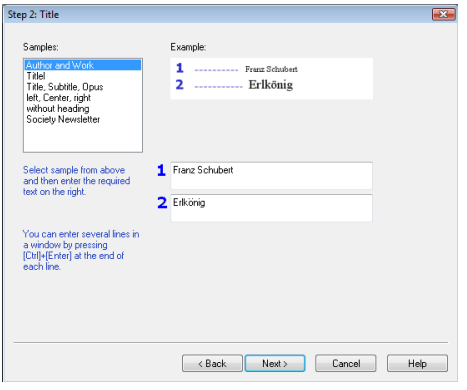
It is irrelevant whether "Piano" or "Tenor" are selected first. By choosing "Chamber Music" from the **Set score order for:** drop-down list at the bottom right of the dialog, the voice's staff will automatically be set above the two piano staves.

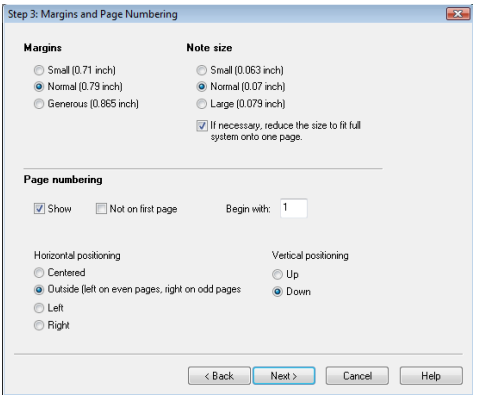
Click Next.

Step 2 allows you to choose headings and footers for your work. These details can easily be modified at a later stage.

> **NB:** Tip for experts: All the information (instruments, page layouts, etc.) that the ScoreWizard offers is maintained in tables that can be edited by the user.

Select the entry for "Composer and Work". The name *Franz Schubert* will appear. Leave that, but change the text in field 2 to "Der Lindenbaum".



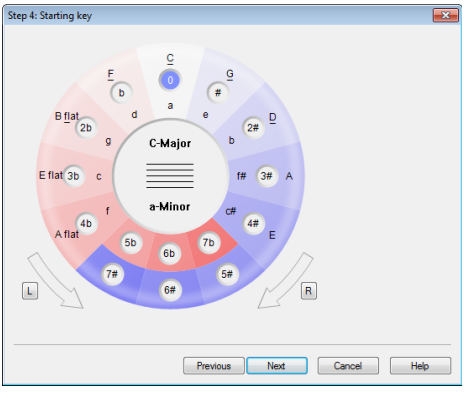


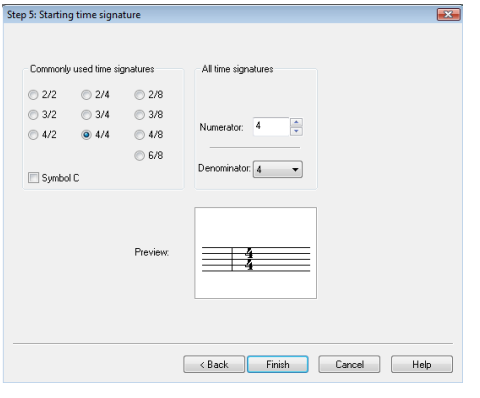
Click Next.

Step 3 allows you to set margins, note size and page numbering. For now you can skip this step and accept the default values.

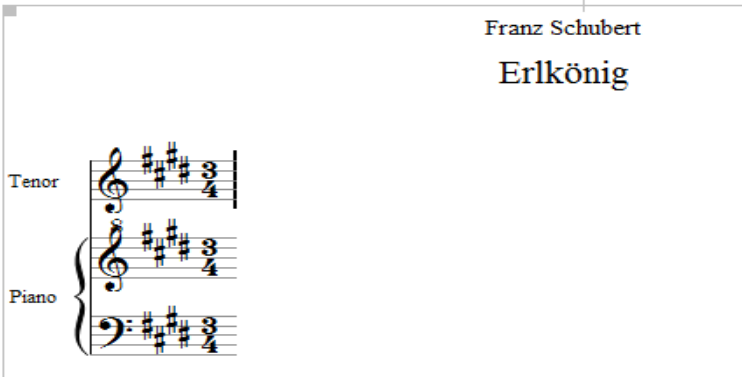
Click Next.

The next two steps require you to determine key (E Major) and time signature (3/4).





Now click Finish and the ScoreWizard will generate the starting score.



With *capella* you can determine separately for each system whether voice descriptions should be full length, abbreviated or omitted. To remove these descriptions in the current example, please select menu: FORMAT → SYSTEMS... → GENERAL and select **None** for **Instrument descriptions**.

All that is missing now are the notes.

Note entry
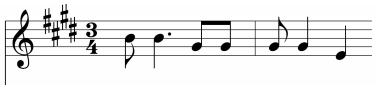
Verify that the cursor (flashing vertical line) is positioned to the right of the time signature. If not, click it into that position. Verify that the current note value is 1/4.

Now type the following: B B G G G G E. Position the cursor back at the beginning (mouseclick or Home) and click the loudspeaker icon on the *sound toolbar*. You will hear the melody *Am Brunnen vor dem Tore*, but with incorrect rhythm.

Position the cursor in front (to the left) of the first note and to correct its value (duration) press <. Each press of the key will reduce the value further. If the value is *not* dotted it will reduce to half the value plus dot. If the note *is* dotted the dot will be removed. To reduce a quarter note to an eighth note you have to press < twice. Alternatively press > to increase note values step by step. Now try to dot the second note.

Instead of correcting all notes in this way, let's start again and learn a faster method: Mark all notes by placing the cursor to the left of the first note (but to the right of the time signature). Hold down the left mouse button and drag the mouse to behind (to the right of) the last note. Press Del to delete the marked notes.

The cursor should now be positioned to the right of the time signature and there should be no notes on the staff. The current note value is 1/4. To change it to 1/8 press 8. Now type B for the first note. The second note is a dotted quarter note. Type 4 . B and then: 8 G G G 4 G E. Your first staff should now look like this:
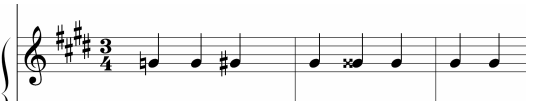


Accidentals

You may be surprised that G# was correctly entered four times although you only touched G. This is because in E Major G# is the third note. G natural is not contained in the key of E Major. *capella* only requires additional input for sharps or flats when the note is foreign to the current key. Try the experiment below:

Position the cursor at the beginning of the second staff (the piano treble clef staff) to the right of the time signature and type the following:

4 - G - G G G + G + G G G.

The result should look like this



When you press - the next note that you enter will be lowered by a half step in relation to the key signature. For example G# becomes G. You also typed - before the second note. A natural could be used, but as the accidental applies until the next barline the accidental is not repeated within the bar. Before the third note you did not enter a - so G# is entered and the # is automatically shown by *capella* to indicate that the natural is canceled.

When you press + the following note will be raised by a half step in relation to the key signature, therefore G# becomes G## (it is given a double sharp).

Put the cursor in front of the first note and insert 2 C. A half note will be inserted and the signs for the following notes will change.

Delete this experimental input by marking all the notes on this staff and pressing Del. If you inadvertently delete too much - for example the clef, key and time signature - you can reverse your deletion with menu: Edit → Undo.
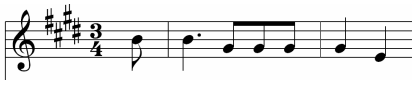
Green and red barlines

Back to your song. The melody for “Am Brunnen vor dem Tore” is correct but you have probably noticed that the barlines are in the wrong places. The reason is that you have cut the music out of its context. The first bar is the eighth bar in the original Schubert piece and it starts with two quarter rests and an eighth rest.

Before you correct this, try another experiment. Put the cursor to the right of the second note and type 4 . E. Now look at the first barline. *capella* automatically inserts a barline when the bar is full. But now you have a problem. Click once on the barline and look at the bottom right end of the status bar. Next to the clock symbol you will see 7/8. This indicates that the last note has exceeded the bar capacity by 1/8, i. e. an eighth note (in 3/4 time there can only be the equivalent of 6 eighth notes in a bar). Select menu: View → Color Information or click . If this was not already selected, the barline will change from black to red. In this mode *capella* does not show the colors that will be printed but it uses color to indicate some specific properties of elements in

the score. The barline in question is now red and this color indicates an overfilled bar. Delete the incorrect half note by placing the cursor to the left of it and pressing Del. Now the barline should be green.
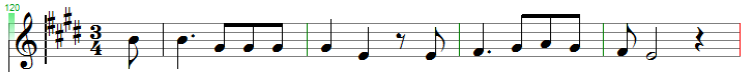
Instead of inserting rests to correctly fill the bar to 3/4 time you will add an anacrusis (fixed barline to create an introductory bar). Put the cursor after the first note and select Insert → Fixed Barline. Select the single barline icon . Your score should now look like this:



Move the cursor along the staff using the left and right direction arrows. You will see that the cursor steps either side of the fixed barline, treating it as a separate object, whereas the cursor jumps over the automatic barlines, ignoring them. This is because the fixed barline is an inserted object that can be deleted or edited by you, whereas the automatic barline is not directly editable by you.

Rests
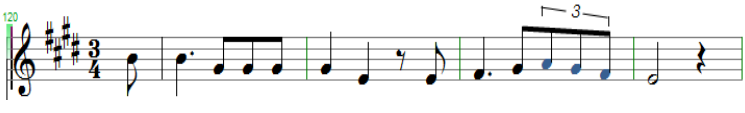
You will now complete the staff "da steht ein Lindenbaum". To insert an eighth rest put the cursor at the end and press 8 for an eighth note value. Then press the space bar to insert a rest with the current value. Continue to type: E 4 . F 8 G A G F 2 E 4 Space. Your work should look like this:



NB: An eighth note follows a dotted quarter note. This is nearly always the case and so *capella* provides a faster way of entering a note and its complement note: If you press the comma key (,) the next note you press will be dotted (as with .) and the one after that will be half the current note value. Try this out, and as you enter the notes watch the bottom right end of the status bar which indicates current note values.

Triplets

At the end of the staff the barline is once again incorrect and if View → Color Information is set, you will see that it is red. The last three notes should be a triplet. Drag the mouse over them and select Format → Notes/Rests → Value. Under the heading **Irregular division** you will see *Triplet*. Notice the blue text in the dialog box. It tells you that you could have used the shortcut keys Ctrl+F5. The triplet symbol alongside the command tells you that you could also have clicked that icon on the "direct formatting" toolbar to add a triplet. All dialog boxes display this shortcut information wherever a shortcut exists. If you have successfully changed the notes to triplets the red barline should have been replaced by a green one. Your score should now look like this:
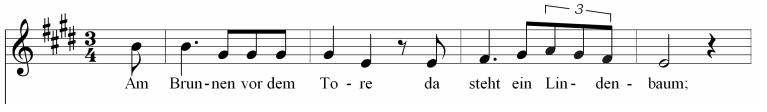


Lyrics

Now add the lyrics to the song. Put the cursor in front of the first note on the first staff and select menu: Extras → Lyrics → Edit in Score. Alternatively you could press Ctrl+L or click the relevant icon L on the toolbar.

The cursor should have jumped below the line, positioning itself where the lyrics are usually shown. Now type:

"Am Brun-nen vor dem To-re, da steht ein Lin- den-baum;"

You see the syllables automatically lining up below the notes. It is therefore important to press the spacebar after "Lin-". To further improve the alignment you should left-align "Lin-" below its note rather than have it centered. Put the cursor into the "Lin" syllable with the mouse or ← and → keys. Now press the TAB key and the syllable will toggle between centered and left justified. Your staff should now look like this:

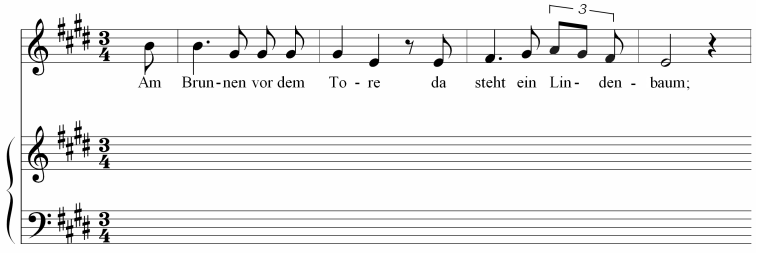


Leave *Lyric Text* mode by touching Esc.

Some of the eighth notes are connected with beams. In songs this is not usual unless they are within a sung syllable. This has happened because there is an automatic beaming facility in *capella*. In this case the eighth notes should be individually flagged. To do this, place the cursor between a pair of notes and select Format → Beaming → Split ( ). It is recommended that you familiarize yourself with the automatic beaming options of *capella* (see page 78).

NB: To split more than two beamed notes you can mark a block of multiple beamed notes and split all of them with one command.

If you have successfully split the beamed notes your piece should look like this (color information is switched off):



The piano accompaniment

Chord mode

Now you will enter the first chord on the second staff. Place the cursor to the right of the time signature on the second staff. If you were to type in the three notes of the chord now, they would appear as three separate notes next to each other. You need to set chord mode. Select Extras → Chord Mode and type G B. The cursor will not have moved after the G and you will have a chord with G# and B. The remaining note is B an octave lower. To enter this you can hold down the left Shift key while pressing B or click the second of the five octave symbols on the note entry toolbar  and then press B.

Now enter the first chord of the lower piano staff. Notice that the note pitch is lowered to match the clef; in this case the E is two octaves below the treble clef. To enter a new chord you must move the cursor horizontally to the next note position. It does not move automatically. Move the cursor with →.

Before you add further chords you will add a fixed barline to define the anacrusis. Select Insert → Fixed Barlines... and before selecting the type of barline tick the check box at the bottom of the dialog box **For all staves of the system**.

Using your newly acquired knowledge you can enter the remaining chords on the staves. You will then see that the following information is still missing:

- The staccato dot in the first full bar
- The slur
- The piano dynamic mark at the beginning

Staccato

In order to set the three staccato dots mark the three chords with the mouse and select Format → Notes/Rests → Notes → Articulation Signs. You find “Staccato” in the drop down list. There are shortcuts using either the icon or the shortcut keys Shift+Ctrl+C.

Slurs

For the first slur in the lowest staff, mark the first three eighth notes in the first full bar and select Draw → Music Notation → Slurs or click . This inserts a slur anchored to the three notes. If you move the mouse pointer over the slur you will see a green line from the left end to the first note, confirming it is anchored there, and a yellow background indicating that the graphic within the outline can be edited by clicking on it. If you delete the note with the line leading to it you will also delete the slur. Click on the yellow frame and four blue boxes – also called *handles* – will appear. Drag these in order to change the shape of the slur. Details about the slur, including the red boxes which you will also see, can be found at page 149.

Additional symbols

In order to insert the piano symbol put the cursor in front of the first chord in the middle staff and select menu: DRAW → MUSIC SYMBOLS → DYNAMICS. Click on the *piano* symbol. This creates a single character text element using the *capella* font. As well as the usual music symbols any character in the *capella* music fonts (see page 194) can be inserted in a similar way by selecting DRAW → PLAIN TEXT.

If the symbol is not automatically placed where you want it you can drag it into position.

What next?

Congratulations! Working your way through this brief introduction has put you firmly on the way to become an expert in notation.

Now and again you might encounter problems whose solution is not immediately clear. Here are two more options to find answers:

To know what's possible

Calls to the *capella* hotline show that some users are not aware that the answer they seek is invariably in the user guide. Of course, the problem lies in knowing where to look to find the information. Below are a few tips to help you find answers in the user guide:

- Read and re-read the user guide. This may seem like a pointless exercise if you don‘t have a problem, but it will enable you to recognize that there is a solution in the guide when you come across a problem. For example, at the moment you have not yet covered putting two or more voices onto a single staff. When you come across this requirement in a score you are likely to remember that the guide had something on this topic if you have read the contents pages a few times. It seems easier sometimes to link the solution to the problem when the solution is already embedded in your subconscious.
- The index at the back of the user guide is often more help than the contents page, as a problem is often described in several ways. For example, if you want to find out how to mark notes you can look under both *Marking notes* or *Note heads ... marked*, increasing the chance that the word you know is also the one that is in the index.
- Go through the tables of shortcut keys at the back of the user guide and memorize the ones that you often use. Shortcut keys can save you a great deal of time.

To make the impossible possible

Many apparently unsolvable problems can be solved by bending *capella's* potential creatively. A separate chapter offers a number of examples on how to achieve the impossible (see page 182).

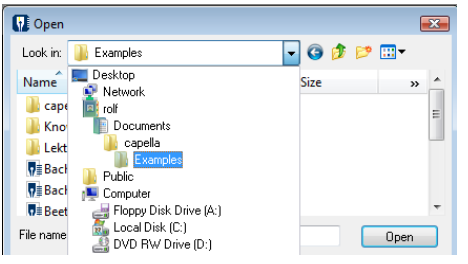
Also check the list of frequently asked questions at www.capella-software.com

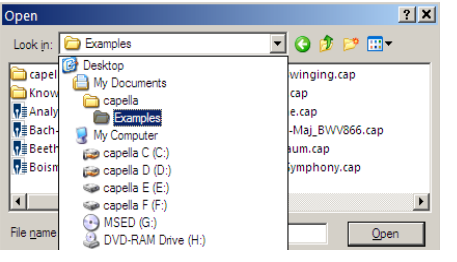
Basic operations

Your personal *capella* folder

During start-up *capella* has set up your **personal** *capella* **folder**. It contains an additional folder for a couple of example scores and should be used to store your own scores as well.

In Windows 8, 7 and Vista your personal *capella* folder has been placed inside your *Documents* folder, in Windows XP it has been placed inside your *My Documents* folder.





Set up *capella* for multiple users

If a second user with their own login name and user account starts *capella*, a personal *capella* folder will be created automatically.

The user interface of *capella*

This user guide assumes that you basically know how to use Windows. The user guide does not contain any instructions about common application program usage. Only *capella*-specific instructions or those that might deviate from common practice are explained.

Color coding for pitch

Wherever you can select different octave levels (e. g. MousePiano, toolbar, piano roll during real time note entry), the following color codes are used:

Color	Each octave
black	from C_1
brown	from C
red	from c
orange	from c^1
yellow	from c^2

Mouse wheel

If your mouse has a wheel between the two buttons, you can use it to control vertical scroll. While holding down the Ctrl key you can use the mouse wheel to zoom in and out. If your mouse wheel supports horizontal scroll (indicated by two small arrows printed on either side of the wheel) you can scroll sideways by pressing the mouse wheel to one side.

Combination letter keys

Except for text entry the keys not used for note entry (i. e. keys other than A to G) are free for other use in *capella*. These other keys are sometimes used in combination with Shift, Ctrl or Alt, to provide shortcuts to the most common commands.

Example: Whenever this user guide instructs you to "press Z+←" you need to hold down Z and while holding it down press ←.

At the bottom left of the status bar you will find letter keys that are currently available for shortcuts. If you press and hold one of them, e. g. P, you will see a description of how to use it. We will take P as an example. Hold down P and press ↑. Each time you press ↑ the note to the right of the cursor will rise a half step.

Toolbars

With the help of the toolbars you can execute frequently used instructions with just one mouse click.

Icon display styles. Icons that are related to changing the properties of objects in the score (e. g. invisible, beams-splitting, margin), generally have a number of appearances depending on what they can currently do:

	Appearance	Meaning	Effect of the icon
	normal	The attribute applies to none of the marked objects.	All marked objects get the attribute.
	pressed	The attribute applies to all marked objects.	All unmarked objects lose their attribute.
	pale gray	No object is marked.	

You can select from the eight available toolbars those that you would require most often, and arrange them in any order on your screen.

Select toolbars. Using menu: VIEW → TOOLBARS you can select the toolbars you wish to display. We suggest that you first switch on all toolbars. As you get used to *capella* you can learn the commonly used shortcuts and then switch off the toolbars containing these. This will give you more usable screen area for your scores.

Moving toolbars. You can drag the toolbars with the mouse. Hold down the left mouse button on one of the raised bars at the left end of a toolbar (or at the top of the drawing toolbar) and drag it into the preferred position. If you drag it into the main window it will turn into a floating window itself. Drag it to either of the four sides of the *capella* window and it will attach itself to the edge.

Exception: The View toolbar cannot be dragged to either side margin. The reason for this is that the zoom list must expand vertically and it cannot do this if the toolbar is placed vertically down a margin. The View toolbar must be horizontal.

	Appearance	Meaning	Effect of the icon
	normal	The attribute applies to none of the marked objects.	All marked objects get the attribute.
	Pressed	The attribute applies to all of the marked objects.	All unmarked objects lose their attribute.
	Not pressed but brightish	The attribute applies to some of the objects.	All marked objects get the attribute.
	Etched gray	No object is marked.	–

NB: If you would like to know if a score contains any invisible notes this is how to find out: Mark the whole score (Ctrl+A) and look at the icon for invisible notes (an eye with a line through it). If

the marked area contains invisible notes the icon will match the *not pressed but brightish* description above.

You can select from the eight available toolbars those that you would require most often, and arrange them in any order on your screen.

Select toolbars. Using menu: VIEW → TOOLBARS you can select the toolbars you wish to display. We suggest that you first switch on all toolbars. As you get used to *capella* you will quickly learn the commonly used shortcuts and then you can switch off the toolbars containing these. This will give you more usable screen area for your scores.

Moving toolbars. You can drag the toolbars with the mouse. Hold down the left mouse button on one of the raised bars at the left end of a toolbar (or at the top of the drawing toolbar) and drag it into the preferred position. If you drag it into the main window it will turn into a floating window itself. Drag it to either of the four sides of the *capella* window and it will attach itself to the edge.

Exception: The View toolbar cannot be dragged to either side margin. The reason for this is that the zoom list must expand vertically and it cannot do this if the toolbar is placed vertically down a margin. The View toolbar must be horizontal.

toolbar**toolbar**toolbartoolbar

Sometimes a toolbar will refuse to move. If this happens you should click and drag again.

Tooltips. When you move the mouse pointer over an icon a brief description and – if applicable – the relevant shortcut key appears alongside it. At the same time a more detailed description appears at the bottom left of the status bar.

Adapt toolbars

You can adapt the toolbars according to your requirements. You can make some of them invisible, create new symbols, change keyboard shortcuts and move symbols to other toolbars or menus. Use menu VIEW → TOOLBARS. The Adapt dialog appears which you will know from other Windows software.

Choice of toolbars. Choose the tab “toolbars” in the Adapt dialog. Here, you can choose which toolbars are to be visible. Please start with switching on all toolbars. As soon as you know all shortcut keys of one toolbar, you can make it invisible in order to save space.

Move symbols. As long as the Adapt dialog is active, *capella* remains in a special state. You can now move each symbol of a toolbar with the mouse to another position on the same or another toolbar.

Should you get tangled up in the structure you created you can restore the original settings by clicking “reset” or “reset all” on the “toolbars” tab.

If your plugin toolbar is involved, all plugin symbols will be replaced by figures, and the plugin menu will be reduced to its top two entries. Don't worry – when starting *capella* the next time everything will be again as configured in plugins.dat (also see page 178)!

Also see page 187 for another method to reset the initial state of the symbols and toolbars.

Status bar

The status bar displays along the bottom edge of the *capella* window. The display can be switched on/off with menu: View → Status Bar. For a description of the individual elements on the status bar please see page 26.

Guide lines

Two cross-over guide lines can be superimposed on the display of your score. Their purpose is to assist you with accurately placing graphic objects. Use menu: View → Guide Lines to switch the display of guide lines on/off. Once displayed, you can move the mouse pointer to its center, where it will change to a cross hair. Hold down the mouse button and drag the the two guide lines to where you want to align your graphic objects. The color of these guide lines can be set in menu: Extras → Options → View and Colors.

Menus

For reasons of brevity we describe the method of accessing commands and options in this user guide by way of using menus, although in many cases there are shortcuts to these commands and options. These shortcuts by means of icons or letter combinations are indicated next to the respective menu items. All menu commands are shown in the form menu: Menu Name → Command → Sub-Menu and/or Menu Name → Command → Tab Card.

Example: Select menu: Extras → Options → General means: Open the Extras menu and select Options. Click on the General tab in the dialog box that opens.

When you find that you often use the same menu command you should take note of the indicators next to the menu commands:

Icon to the left of the menu command: This icon is part of one of the toolbars. In future you can just click the icon to issue the same command.

NB: If you cannot find the indicated icon you need to make sure that the relevant toolbar is displayed. Select menu: View → Toolbars to display all toolbars.

Text to the right of the menu command: You can issue the command with the indicated keyboard shortcut.

Three dots behind a menu command indicate that this menu option does not immediately issue a command but rather opens a dialog box to set (or cancel) further options in connection with the required command.

A **stemless arrow** behind a menu command indicates that an additional sub-menu with further options will open.

Dialogs

Text color. Comments in dialog boxes are shown in different colors to indicate their different type:

Type of comment	Color
Additional information on how to use the dialogs.	light blue
Indicators to alternative methods, e. g. shortcut keys that can be used to issue the command without having to open the dialog.	light blue
Warnings and indicators that options should only be used under special circumstances	red

NB: You can adjust the colors to your personal preferences: Use a standard text editor to open the file `capella.dat` in `C:\Documents and Settings\User\My Documents\capella\config\data\`. Look for the section [dialogs] and edit the values each for red, green and blue to anywhere between 0 and 255. See page 187.

All **Freeform text in dialogs** can be exchanged with other programs via the clipboard: Marked text can be copied to the clipboard with Ctrl+C. Use Ctrl+V to insert the text from the clipboard into another text area. This feature allows you to copy Lyric text from any document into the **Lyric Text** dialog in *capella*.

Tab dialogs. You can skip between tabs in tabbed dialogs using Ctrl+Tab to skip forwards or Ctrl+Shift+Tab to skip backwards.

NB: Expert tip: To facilitate external control via a command interpreter, all first tabs in tabbed dialogs can be activated with Alt+<.

Nested tab dialogs. Because too many tabs next to each other will prevent clarity, we are using several sub-tabs where logic permits. In order to move between tabs without the mouse you can use Tab to move around the first tab level until you highlight the required tab (it shows a dotted outline when selected). When the sub-tab is highlighted use the keys Ctrl+Tab to switch to it.

Undo commands

Commands can be undone up to a maximum number that you set in menu: Extras → Options → General. Enter a number between 1 and 1000. After undoing a command it can also be re-done.

NB: Although the maximum number of undo steps can be set very high, you must bear in mind that the information required to undo previous editing steps occupies space in the working memory (RAM) of your PC. If your PC's RAM is limited in capacity, you should set the number of undo steps to 10 to 100.

For a **single undo command** use the option UNDO or REDO on the EDIT menu.

When you open the EDIT menu you find short descriptions next to the UNDO and REDO commands referring to the most recent activities, unless you have just opened a new file or saved the file, in which case it will say "not possible" next to these commands. The identical short descriptions appear as tooltips whenever the mouse rests on an icon on one of the toolbars.

Multiple commands can be undone and/or redone via menu: EDIT → UNDO/REDO STEPS.... This dialog lists all commands that can be undone or redone. The numbers in front of the commands refer to the initial state or to the last state since a FILE → SAVE command had been issued.

What can be undone? Every action that changes the state of a score (that includes everything that is saved inside a *capella* score) can be undone. Each open score is logged separately. These steps are canceled when the score is saved. They are not canceled by the automatic timed backup.

What cannot be undone? Actions that do not change the state of the score.

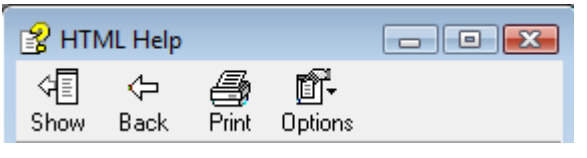
Example: Cut out a piece of the score (EDIT → CUT). As a result of this, the marked content of the score is deleted and the current content of the clipboard is overwritten by the cut piece. You can restore the piece of the score as it is controlled by *capella*, however the data overwritten on the clipboard is not controlled by *capella* and is not part of the score at this point, so it cannot be restored.

However, if you copy and paste between the score and the *capella* Gallery, this is reversible, as it happens all within the *capella* program.

The choice of zoom setting or color display in a window cannot be reversed as it only affects the display on screen and not the actual score i. e. one score could be displayed in separate windows with different color and zoom options.

The *capella* help system

You should find it very easy to negotiate the *capella* help system because its content is identical to the user-guide. When you start Help you should see a separate panel on the left with **Contents** and **Index** tabs. If you do not see these you should click the *Show* icon along the top of the Help window as shown here:



The icon will be labeled *Hide* if it is visible. If you select an Index entry (or click on a cross reference on a Help page) you will be taken to a blue heading and the item you are looking for will be somewhere between that blue heading and the next blue head-

ing. If you search the index for a less often used term you might only find a synonym in in the text.

Help with menus. When you select any item from the menu system you will get a brief explanation of what it does in the status bar. This also applies to grayed out – inactive – menu items.

More detailed assistance on a menu item is available in one of the following ways:

- Point with the mouse to the menu item and while holding down the mouse button press F1.
- Open the menu with Alt + the underlined character in the menu name. Use the ↑ or ↓ arrow keys to reach the menu command you want. Then press F1.

Help with icons. If you move the mouse pointer over an icon you will see information about what it does. A short tooltip appears alongside the mouse pointer and a more detailed description appears in the status bar.

For fully detailed information from the Help system you should hold down the mouse button on the icon and press F1. If the icon appears to be selected after this, briefly move the mouse pointer over the icon to reset it.

Help with dialog boxes. In dialog boxes you can get help either by clicking on the Help button in the dialog box or by pressing F1. With tabbed dialogs the help response depends on which tab is active.

Score information

Select menu: File → Info... to access a tabbed dialog box with comprehensive statistics about a score. The individual tabs offer the following information:

Score Statistics. This dialog displays information about the total playback time of the score including all repeats. It also provides information about the number of pages, systems, staves, voices, rests, chords, note heads, fixed barlines and graphic objects.

Voice range. This gives you a graphical view of the highest and lowest pitch in the voice. It is useful to see if you have written parts outside the usual range, and also for judging how much a voice should be transposed. If you want to see the range of only a single voice within a multi-voice stave you need to use the part-extraction feature (see page 118).

If you want to revise the range for a voice or add a new range click >> to the right of the drop down list box named **Comparative range**.

Comments about the score**.** You can enter comments about your score. These may make it easier to revise the score in the future, or to find the original source of the material.

Author. Once you have clicked on Personal data... and entered your information it will be automatically included in all your future scores.

Navigation

Search for notes

➔ **How to search for a specific sequence of notes.**

1. Select menu: EDIT → SEARCH... . A two-tabbed dialog appears.
2. On the first tab enter a short search melody you want to find in the current score.
3. On the second tab select the options for rhythm:
   - **Exact**: Only note sequences will be found that have the exact values.
   - **Relative**: All note sequences will be found, whose sequence of values is in proportion to the search entry; e. g. if you search for 3/8, 1/8, 1/4 *capella* will also find 3/16, 1/16, 1/8.
   - **Any**: The search will only consider the pitch, but not the rhythm.
1. Select the options for pitch:
   - **Absolute**: Only note sequences will be found that have the identical pitch.
   - **Any octave**: *capella* will also find note sequences that are shifted by one or more octaves.
   - **Relative**: *capella* will also find all note sequences that might arise from a transposition of the search melody; e. g. when you search for c, d, e *capella* will also find e, f#, g#.
   - **Any (rhythm only)**: *capella* will only search for a matching rhythm, not for pitch. You should not combine this setting with **Any rhythm** in step 3 above, because *capella* will then find everything.
1. If you only want to search the voice that contains the cursor, you must set the relevant tick mark at the bottom of the dialog.

NB: Use menu: EDIT → FIND NEXT... or (Shift+F3) to find the next occurrence of your search sequence.
Another search option is to use the script *Search* (see page 181).

Go to specific position

Use menu: EDIT → GO TO... in order to jump to any specific page or system in the current score. You can jump to a system by entering its sequential number or by the number of the first bar in the system.

NB: You can also jump to any specific page or system by clicking the relevant symbol in the status bar (page symbol or system bracket).
To go to a specific system you can also drag the vertical scroll bar up or down and observe the page numbers appearing in a small display along the scroll bar.

Viewing the score

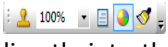
Score windows in *capella 7* are implemented in a new tab style (see page 26). You will see a separate tab for each opened score so that you can easily switch between scores. When several scores are open, you can grab a tab with the mouse and pull it to the right scroll bar. The screen will be divided, and you can now view both scores side-by-side. If you pull the tab to the bottom scroll bar, you can view the scores one below the other. You can edit a score in various views and at different zoom levels.

Multiple view

Use menu: WINDOW → NEW WINDOW to open a second window on the current score. This feature can be very useful when editing two distant parts of the score or to view the score in two different view settings e. g. one with and one without color information.

Split window. You can split a window into two or four partial windows by dragging the little bars at the beginning of each scroll bar down or across as appropriate. Split windows above each other share the same horizontal scrollbar, split windows next to each other share the same vertical scrollbar. Therefore split windows must have the same zoom level.

Zoom

You can set the zoom level from the drop down list on the view toolbar 

. Instead of selecting from the drop down list you may enter any value directly into the text field. Alternatively you can select menu: VIEW → ZOOM...

You can pre-set the values in the drop-down list anywhere between 1% to 5000% at menu: EXTRAS → OPTIONS → ZOOM.

For quick and easy changes of zoom levels in 10% increments up or down use Ctrl+(+) or Ctrl+(-) on the numeric pad on your keyboard or use your mouse wheel while pressing Ctrl.

Page layout

Use menu: VIEW → PAGE LAYOUT to switch on/off print preview. This view displays the score exactly as it will be printed in accordance with the selected printer setting. It will display correct margins, headers and footers (see page 87).

Graphic objects that are anchored to the page are only visible in this view (see page 151).

While page layout view is selected the zoom drop-down list on the view toolbar shows additional entries like page-width and page-height.

NB: While page layout view is switched off all systems will be displayed as if they were positioned below each other on one long page. Page borders will be indicated by horizontal lines, but the bottom margin will not be shown.

Color information

capella normally displays all notes in the color in which they will be printed (black in most cases).

Use menu: VIEW → COLOR INFORMATION F11 to display additional information that would otherwise not be recognizable:

- Inactive voices: These are displayed in pale color, which helps to keep track when entering notes into multi-voice staves.
- Triplets and other irregular divisions
- Incorrectly filled bars
- Invisible notes and rests
- Filling rests
- Tempo settings

The choice of color for these items can be set at menu: EXTRAS → OPTIONS → COLORS.

In page layout view with color information switched on you can also see a useful staff layout spacing device. To the left of each staff you will see a vertical pale gray bar showing the space allocated to that staff in the SystemTemplate. You can drag the bar down, thereby creating more space (see page 96). To do this, move the mouse pointer over the end of a bar. When the pointer changes to an arrow head and horizontal bar, you can start dragging. Any space that is in addition to the default as set in the SystemTemplate is shown in dark gray.

NB: The space below a staff can also be reduced. In that case the dark gray bar is shown next to the pale gray bar.

Refresh view

For reasons of efficiency *capella* only redraws the immediate area edited. This can result in a jumbled display. If this happens you can manually refresh the screen with menu: VIEW → REFRESH SCREEN or press F9. Alternatively you can set automatic full screen refresh every so many seconds with menu: EXTRAS → OPTIONS → VIEW AND COLORS.

SystemTemplate

Select menu: VIEW → SYSTEMTEMPLATE to edit the default properties of your score (see page 100), e. g. size of notes, distance between staves, etc.

Open a score

➔ **How to open one or several scores**

There are various ways to achieve this:

(a) Select menu: FILE → OPEN. The standard Windows file-open dialog appears.

> **NB:** As part of the *capella* installation a collection of completed scores has been copied into a sub-folder in your personal *capella* folder (see page 38).

(b) Open Windows Explorer and select the required score (or several scores) and drag them with the mouse into the *capella* window (*drag and drop*).

(c) Open Windows Explorer and double click the required score. This will start *capella* and load the score automatically.

(d) Start *capella* by adding the score's file name to the program name in the *run* command of the Windows start menu.
Example: `capella.exe example.cap` starts up *capella* and loads the score example.cap.

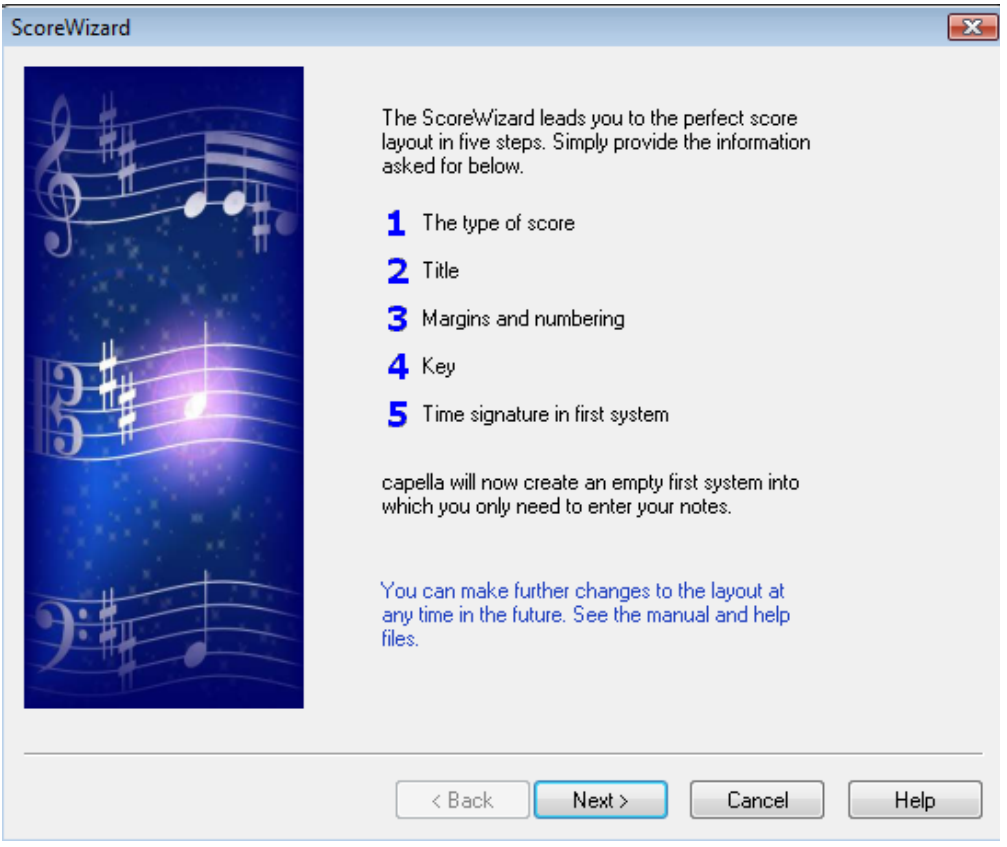
(e) If you plan to work on a specific score over a period of time you might want to create a shortcut on your desktop. Doubleclick the shortcut and *capella* will start and load the specified score.

The ScoreWizard

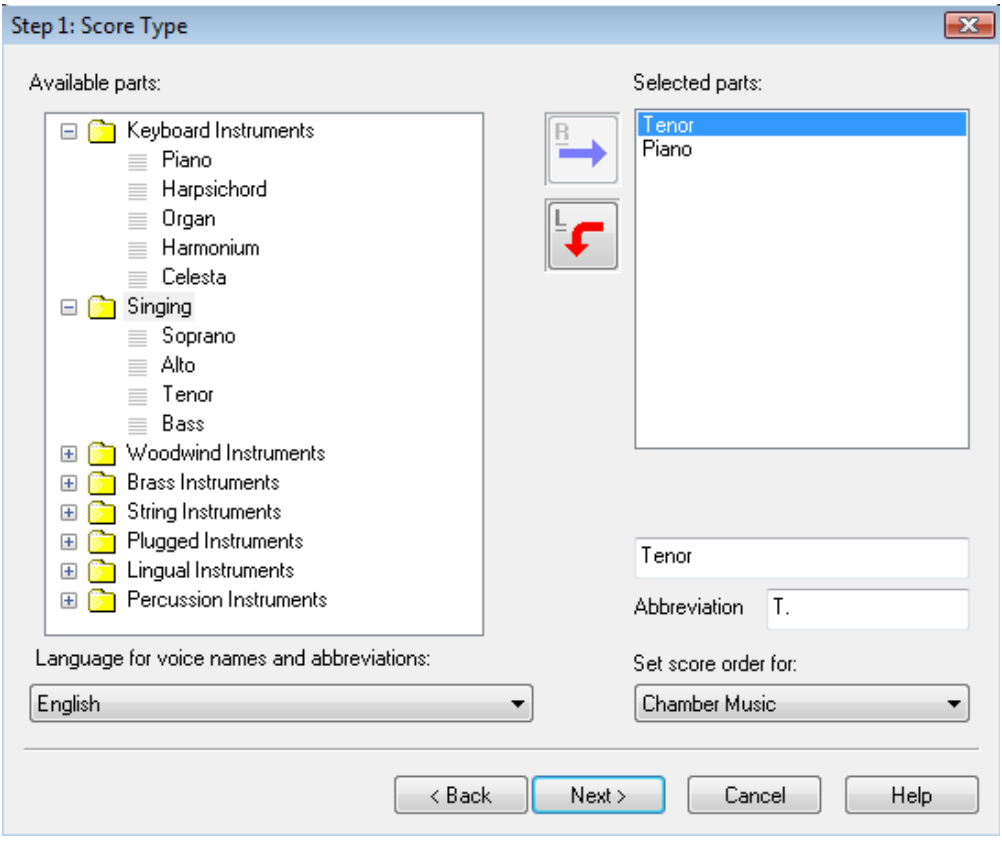
The ScoreWizard guides you through five steps of creating an empty score with your required instruments and voices.

➔ **How to create a starting score**

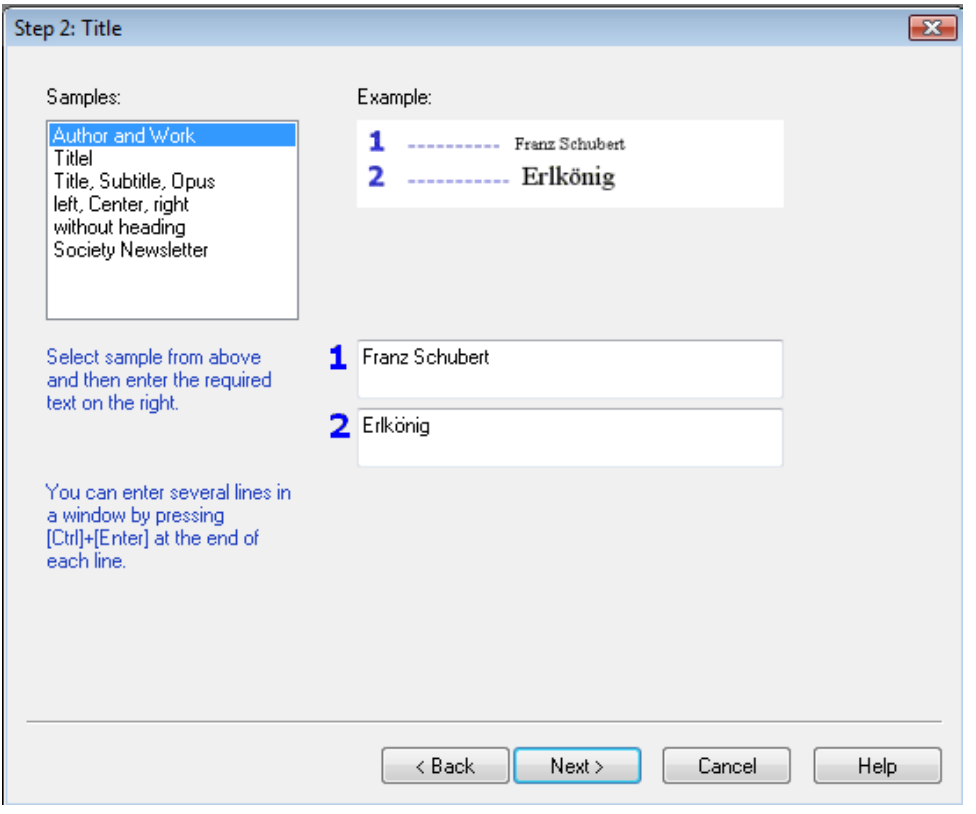
1. Select menu: FILE → NEW → SCOREWIZARD or click  on the standard toolbar. The ScoreWizard's opening screen displays.



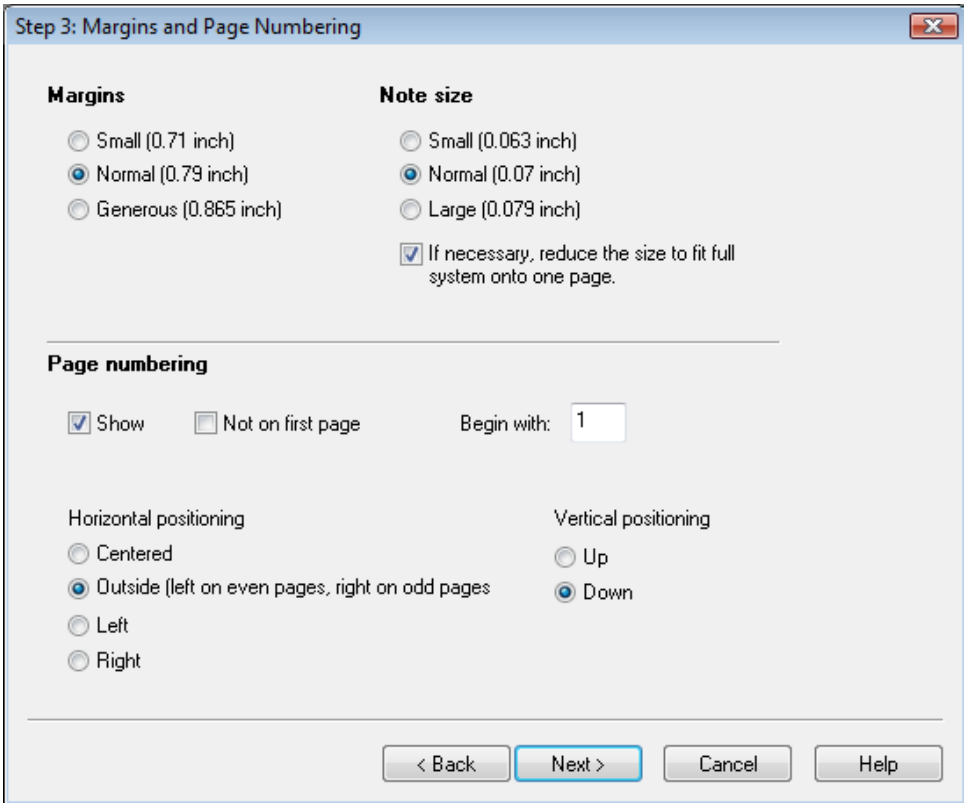
2. Click Next to access step 1 of the ScoreWizard.



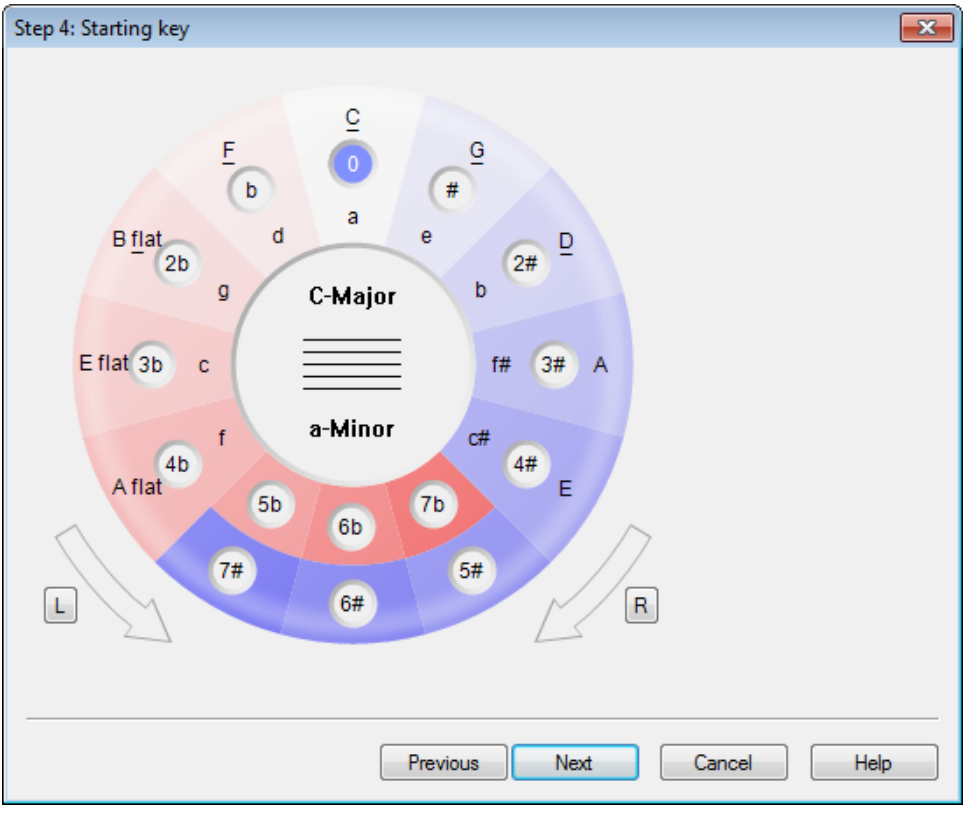
3. At the bottom left of the dialog you can select the language in which the names for voices and instruments should be displayed.
4. At the bottom right of the dialog select the score order. As soon as you add voices and instruments to the **Selected parts** list above these will be arranged in accordance with the selected score order.
5. From the folder display on the left select all the voices and instruments you require and copy them to the right by clicking the blue arrow. You can copy the same instruments several times and then rename them in the text field below the **Selected parts** list. Click the red arrow to remove them from the **Selected parts** list.
6. Click Next to access step 2 of the ScoreWizard.



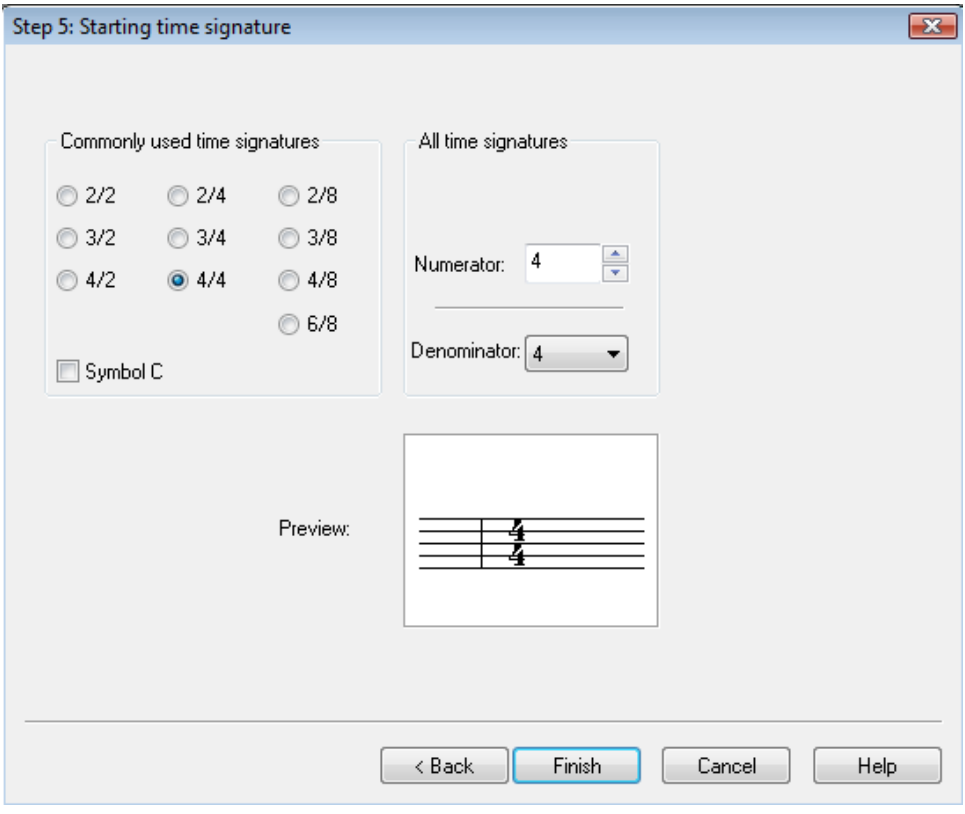
7. If you would like to add a heading to your first page of the score select one of the predefined layouts and modify any one of the text fields to suit your requirements. Select “without heading” if you do not require a heading.
8. Click Next to access step 3 of the ScoreWizard.



9. Select the required options for page **Margins**, **Note size** (= staff line gap; see page 20) and **Page numbering**.
10. Click Next to access step 4 of the ScoreWizard.



11. Select the key for the first system in your score (transposing instruments are automatically adjusted.).
12. Click Next to access step 5 of the ScoreWizard.



13. Select the **Starting time signature**. *capella* will now create a score according to your selections with a first empty system.

For a practical example on how to use the ScoreWizard see page 29.

NB: Tip for experts: The pre-defined score orders, instruments and header layouts are stored in tables that you can modify to suit your preferences.

Score templates

If you repeatedly write scores using the same system layout you can create one example with the ScoreWizard and re-use it over and over. When you open this example score and modify it for the current session you must be careful not to overwrite the original example score when you save it. You must always use menu: File → Save As instead of menu: File → Save to prevent potential disaster.

It would be useful if such potential disaster could be prevented automatically by *capella*. Well, it can, by using *capella's* score templates. You can use any score to serve as a template. Score templates are not required to contain any notes. Their purpose is to provide the user with ready-made score layouts.

➔ **How to open a score as template**

1. Select menu: File → New → From Template....
2. Select the required score from the file open dialog. At this point this score has no name and you will be prompted for a file name when you save it using menu: File → Save.

If you have not prepared an example score you can create a new score from any existing score. Click File → New → From example to create a new score which is based on the SystemTemplate with its graphic objects but without the notes.

Score template vs. SystemTemplate

As described above, a score template is a file containing an entire score for repeated reuse. A SystemTemplate is a file containing the configuration details and part of the formatting of one entire system. This system (or parts of it) is then repeated as many times as is necessary in the score that is based on this underlying SystemTemplate. Each score has its own SystemTemplate. When you create a new score from a score template, the new file will acquire its own SystemTemplate that is copied from the score template's SystemTemplate.

Save score

Use menu options File → Save and File → Save As

Backup copies

To avoid losing documents due to hardware or software failure you should set up *capella* to save automatic backup copies of your work. Use menu: Extras → Options → General to set the interval in minutes when *capella* should back up your work automatically. You can also set whether *capella* should save an existing file with the **.bak** extension when you save your edited file.

capella places the automatically created backup files in a `backup` folder inside your personal *capella* folder (see page 38).

If you have to recover one of these backed up files you should copy (e. g. with Windows explorer) the required file from the backup folder into your personal work folder.

Warning: Under no circumstances should you work with files in the backup folder, as they would overwrite themselves whenever an automatic backup copy is made!

As the backup folder fills up with previous copies of your work you should occasionally clean it up and delete those backup files that are no longer required.

> In case *capella* cannot be started but is shut down directly after the main window has appeared you may by successful by resetting the toolbars. See page 187.

Exchange of files with previous versions of *capella*

Typically, *capella 7* saves in capXML-2.0-Format „CapXML-file (*.capx)“. You can also choose „CapXML 1.0 (until *capella* 2008) (*.capx)“ and *capella* file (until 2008) (*.cap). In *capella 7* a distinction must be made between two different capx-formats. According to this the file type window has priority. If the existing extension does not correspond with the file type window, then an error message will be be displayed.

> If your Windows Explorer is preset not to display file extensions, then you might not see at all if capella is about to save in .capx or .cap format. You will wonder about the error message. In this case please type in .capx or .cap manually.

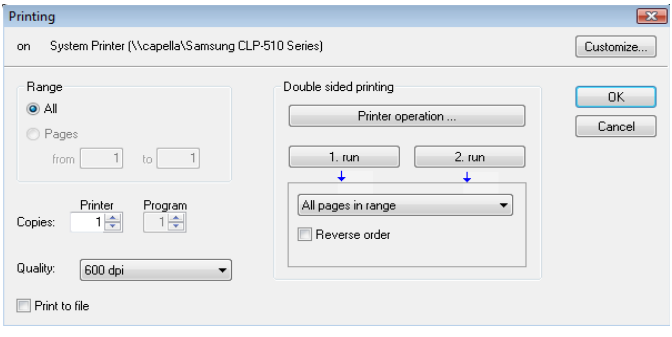
If you save a file in an older format, *capella* will automatically determine whether score properties will get lost. You will receive a warning, and the score will be considered as “changed since the last backup” e.g. the little star on the tab will remain.

You can open files written with *capella* 2.x in *capella* 2008. However, it is not possible to write files in *capella* 2x format with *capella* 7. Therefore you will be asked if you want to overwrite the old file with the new format when saving a *capella* 2x file.

> **NB:** After importing into the current version the appearance of version 2.x files can suffer if you used special “tricks” when creating those files in version 2.x.

Printing

This figure shows the printing dialog that appears when you select menu: FILE → PRINT.... The left part of this dialog contains the common printer settings that you probably know from other Windows programs.



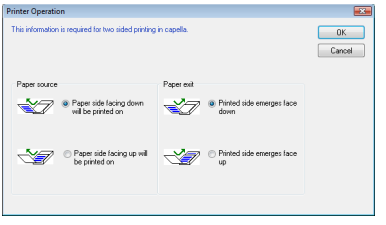
If your printer can print multiple copies of the same page without requiring each page to be re-sent by the computer (this is usually the case with laser printers), you can set the required number of copies in the counter for printer in the above dialog. If your printer does not have this feature you need to set the counter for program to the required number of copies. In this case *capella* will re-send each pages as many times as is required. For technical reasons the progress indicator will not display the correct page numbers in this case.

Double sided printing

NB: The instructions in this section are only required for printers that do not have a built-in duplex capability .

The right part of the printing dialog contains the elements to facilitate double sided printing. From the drop down list you can select whether odd-numbered, even-numbered or all pages should be printed. You can also select reverse order to enable double sided printing in two separate runs. To get these settings right is a tricky brainteaser. *capella* assists you in such a way that there is no need to rearrange the paper sheets.

Printer operation. *capella* requires information about the mechanics of your printer before you start with double sided printing. If you have changed your printer, you have to re-run this step for the new printer. Click Printer operation in the printing dialog and select the correct settings for your printer.



NB: Some printers have different output trays with different paper orientation. For example the straight path used for board may output the page with the printed side up, while the normal output tray used for paper may output the page printed side down. You must remember which output tray you used when you set up double sided printing.

First run. Ensure that there is at least enough paper for half of the number of pages to be printed and click 1. run. *capella* will automatically adjust the settings in the fields below. The number of copies is set to 1. Click OK.

Second run. Place the stack of printed sheets back into the printer in such a way that the unprinted sides can now be printed and with the top margin facing into the printer. Make sure that you do not change the page range to be printed. Click 2. run and OK.

Note entry

This chapter covers the basics for entering music into *capella*. You will find it easier to understand if you first read the "Quickstart" chapter (see page 25).

Current note value (note duration)

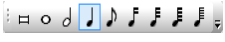
When you enter a note or a rest it acquires the current value (duration). There are various ways of entering notes and rests:

➔ **How to set the current note value**

(a) Use the numeric keys on your keyboard.

Set the required key assignment at menu: EXTRAS → OPTIONS → NOTE ENTRY .

Note value	2/1	1/1	1/2	1/4	1/8	1/16	1/32	1/64	1/128
normal	5	1	2	4	8	6	3	9	7
alternative	9	1	2	3	4	5	6	7	8

(b) Click the required icon on the note duration toolbar . If this toolbar is not visible you can select it at menu: VIEW → TOOLBARS.

(c) Click the note symbol at the bottom right status bar. A menu opens, offering a selection of note and rest values as well as accidentals and dots.

NB: The appearance of a breve can be set for the entire score to either **Mensural notation** or **Modern notation** (see page 104).

Note entry with PC keyboard

Unless you have changed the default values for note entry (EXTRAS → OPTIONS → NOTE ENTRY), you can use the lower-case keys C, D, E, F, G, A, B to enter the corresponding notes. For treble clef you enter the octave above middle C, for tenor and alto clef you enter the octave at middle C and for bass clef you enter the octave one below middle C.

If you hold down the **right** Shift key while touching the letter keys you can enter the notes one octave **higher**. If you hold down the **left** Shift key you can enter the notes one octave **lower**. Be careful that you do not press ⇩!

NB: Windows has problems distinguishing between the left and right shift keys. If you need to distinguish between them for the octave setting in *capella* you should press the left shift key once before you press the right one each time Windows has been restarted.
If you prefer the setting of previous *capella* versions, using both Shift keys to move up by one octave, you can modify the setting at Extras → Options → Note Entry.

If you prefer alternative key assignments you can set these at menu: Extras → Options → Note Entry (see page 200).

Rests are entered with the space bar.

NB: Ledger lines are set automatically by *capella*.

Note entry with mouse

You can enter notes with the mouse. This method is particularly useful if you struggle with naming notes or when you are copying a score that is set in an unusual key.

Mouse entry mode. Select menu: Extras → Mouse Click Note Entry or click . Position notes by clicking the required spot on the staff. Either click between existing notes or at the end of the staff. The note pitch is determined by the position where you click. To enter additional notes into an existing chord click in the chord at the required pitch. You can remove notes from a chord by clicking on them.

Accidentals must be selected by the keyboard before you click the note in place (see page 64).

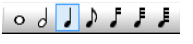
To exit mouse entry mode press Esc or repeat the menu selection Extras → Mouse Click Note Entry.

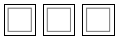
Note entry with MousePiano

The MousePiano can be switched on/off via menu: View → MousePiano. Use the MousePiano to enter notes and to set the current note value.

Notes foreign to the scale. When you enter notes that are foreign to the current key it is not immediately clear how they must be spelled. A piano keyboard cannot distinguish between C# and Db. How these notes are spelled depends on the settings at menu: Extras → Options → Sound → Input.

The toolbar of the MousePiano  displays from left to right:

- Icon for chord mode
- Icons (and indicators) for common note values 
- Icon for entering rests

- Icon for dotted notes 
- The speaker symbol  allows you to switch on/off the playback of notes as they are entered and also enables you to select the preferred sound.
- The piano key symbol  switches the zebra stripe mode on or off. If this mode is switched on all keys on the MousePiano display a gray horizontal stripe. If you click on this gray area a note with the current value will be entered. If you click above or below the horizontal stripe, double or half the current note value will be entered on the staff.
- Three symbols to quickly change the size of the MousePiano . You can select one of three different standard sizes. To modify the pre-set size for any of the three icons you can resize the MousePiano window by dragging one of its corners with the mouse and then while holding down Shift click on one of the three icons. The new size will be assigned to that icon.

  When you stretch the MousePiano sideways more piano keys will be displayed. If you stretch it vertically the size of the keys will be adjusted.

Rests can be entered with a right-mouseclick. While zebra stripe mode is switched on you can enter rests of three different values.

NB: Lost MousePiano: If you pushed the MousePiano off the side of your monitor and can't get it back you must switch its display off and on again with menu: VIEW → MOUSEPIANO. It will automatically re-appear in the center of the screen.

Note entry with MIDI keyboard

Before you can use your MIDI keyboard for note entry you need to verify the settings at menu: EXTRAS → OPTIONS → SOUND → INPUT.

Normal Note entry (Step entry)

To enable normal note entry (step entry) you must select menu: EXTRAS → ACTIVATE MIDI KEYBOARD LINK or click the corresponding icon  on the sound toolbar .

NB: You can switch this toggle off to practice a tune on the keyboard without disturbing your score in the interim. Then switch it back on again when you are ready to set the notes.

You can switch between the four methods of note entry (PC keyboard, MousePiano, mouse and MIDI keyboard) at any time. With the MIDI keyboard you can also enter chords without going into chord mode by simply holding down the required keys of the chord simultaneously. *capella* moves on to the next chord/note as soon as all the keys are released. Until you release all of the keys you can make corrections to the chord by touching the wrong note again. This feature means that you must avoid legato playing during step entry, otherwise the overlapping notes will be entered as a chord.

Real time entry

The advantage of real time playing in is that you do not have to keep stopping to adjust a note value. The disadvantage is that your playing must be very accurate to avoid incorrect note values.

Put the cursor at the point where you want to start entering notes. You can play in two staves at once, i. e. piano left and right hand. To do this the cursor must be in the upper of the two staves.

Select menu: Extras → Rhythmic Playing In... or click the corresponding icon  on the sound toolbar .

You can adjust the sound of the metronome with Extras → Options → Sound → Metronome.

Shifting the note entry range

The range of note entry can be shifted by up to two octaves up and down:

F2	one octave below the current entry range 
F4	one octave above the current entry range 
Shift+F2	two octaves below the current entry range 
Shift+F4	two octaves above the current entry range 
F3	return to current (normal) entry range 

Instead of pressing the function keys you can also click the corresponding icon on the note entry toolbar .

The currently selected entry range is indicated by a highlighted icon. The symbol for the currently selected range is also shown at the bottom right of the status bar. Click that symbol and all five symbols will appear for selection.

In combination with Shift keys you therefore have access to seven octaves from Shift+F2 and entry while holding down the left Shift key to Shift+F4 while holding down the right Shift key.

Rests

Whole bar rests are entered by pressing 1 followed by Space.

Semibreve rests, i. e. rests that have a value of 1/1 regardless of the time signature are entered with Shift+Space.

NB: Semibreve rests and whole bar rests are automatically set in the center of the bar, as is common practice in contemporary notation.

Breve rests. Entering breve rests (normal key assignment: 5, alternative assignment 9; see menu: Extras → Options → Note Entry) also distinguishes between bar-dependent and bar-independent rests. The latter are entered with Shift+Space while the bar-dependent rest is entered with Space.

Multiple bar rests can be inserted with menu: Insert → Multiple Bar Rest... . Different representations can be selected.

Rests are entered automatically if the staff to be extracted in any system during voice extraction does not exist. Such systems are filled automatically with rests. These rests will be deleted when you change back to full score view. If you have switched on color information you will see that these rests have the same colors as for example triplets (Also see page 78).

Filling rests can also be entered and deleted automatically. With color information switched on they will be displayed in light green (you can change this color – see page 48). With color information switched off and on your printed page they remain invisible. Filling rests are to support you when editing multi-voice scores such as piano scores where you usually need to enter invisible rests. Filling rests make sure that the different voices of your score stay synchronized behind the position you are currently working at. You can decide whether and when they will be entered automatically via Extras → Options → Filling rests:

- When entering notes in a voice, filling rests can be entered in the other voices.
- When entering notes in a voice, all voices ending earlier can be filled up with filling rests.
- When deleting notes the deleted notes can be replaced by filling rests.
- When entering new voices the entire voice can be filled with filling rests.
- When reducing the length of a note or rest with < this reduction can be compensated with filling rests.

Filling rests are different from invisible rests. Graphic objects cannot be anchored to them, and they can be automatically deleted, shortened, extended or split in case notes or visible rests are set in their place. You can convert invisible rests to filling rests and vice versa, see page 78. You can delete filling rests manually when color information is switched on. Please be aware that the remaining notes of the voice will shift left and that another filling rest may possibly take the place of the deleted one.

If you wish to have filling rests in older *capella* scores (until *capella* 2008) you can apply the script Rests → Filling rests (see page 180). It will convert all invisible rests into filling rests.

Cursor movement

The keyboard commands for cursor movement can be found in the appendix. Alternatively you can position the cursor by clicking the mouse in the required spot. For multiple-voice staves see page 96.

Accidentals (sharps, flats and naturals)

When you enter notes *capella* considers the current clef and key. If you make any changes to the clef or key *capella* will correctly adjust the notes. For example, if you work in G Major simply type F (with normal key assignment) to enter an F#. *capella* knows that F# is the seventh note of G Major. When entering notes via the PC keyboard you only need to add accidentals if you deviate from the key. If you are entering notes with the MousePiano you will need to press the F# key, just as you would on a real piano keyboard.

Pre-select alteration

Use the following keys to raise or lower a note in relation to the current key:

+ The next note will be raised by a half step in relation to the key.

- The next note will be lowered by a half step in relation to the key.

* The next note will be raised by two half steps in relation to the key.

_ The next note will be lowered by two half steps in relation to the key.

0 cancels a pre-select alteration, including dotting.

Alternatively you can click the note value symbol on the status bar and then select the required alteration.

The pre-selection of an alteration is only valid for the next note. E. g. if you work in C Major and enter +GG, you will get a G# followed by a G.

Example: When you work in G Major and press * and then G *capella* will set a Gx (double sharp). If you enter * and F *capella* will set a F×#. By the same token triple flats can occur.

More Examples

	Key: F Major		Key: G Major	
Enter	Accidental displayed	Note	Accidental displayed	Note
F	-	F	-	F#
B	-	Bb	-	B
+ F	♯	F#	𝄪	F×
+ B	♮	B	♯	B#
− F	♭	Fb	♮	F
− B	𝄫	Bbb	♭	Bb
* F	𝄪	F×	♯𝄪	„F×#“
* B	♯	B#	𝄪	B×
_ F	𝄫	Fbb	♭	Fb
_ B	𝄫𝄫	„Bbbb“	𝄫	Bbb

Forced and suppressed accidentals

You can determine for each individual note head that

- an accidental is forced (alteration or natural) i. e. that it is displayed although according to notation rules this would not be necessary (courtesy accidental).
- display of an accidental is suppressed (only required in exceptional cases in multiple-voice staves).
- an accidental is enclosed in parenthesis (e. g. a courtesy accidental) and/or shifted horizontally (e. g. to avoid collision on a multiple-voice staff).

Select menu: Format → Notes/Rests → Heads and set your preferences in the “Accidentals” group.

Dotted notes and rests

The following key commands affect the following or the second following note.

. The next note will be dotted. 1/128 notes cannot be dotted.

: The next note will be double dotted. 1/64 and 1/128 notes cannot be double dotted.

Alt+. The next note will be triple dotted. 1/32 and shorter notes cannot be triple dotted.

0 Cancels a pre-set dotting (also increase and decrease).

A shortened note (a complement) usually follows a dotted note. Because this is a common occurrence *capella* provides shortcuts:

, The next note is dotted and the following note (the complement) will be half the current value. The following notes will revert to the current value.

; The next note is double dotted and the following note (the complement) will be quarter the current value. The following notes will revert to the current value.

Alt+, The next note will be triple dotted and the following note (the complement) will be an eighth of the current value. The following notes will revert to the current value.

Dotting of the next note will be indicated on the status bar behind the current note value. If you typed , or ; you will also see the value of the complement note. Once you have entered the dotted note the complement note and its following note are displayed on the status bar. After the complement note has been entered only the current default value will be indicated on the status bar.

For more information about dotted notes see page 96.

Clef, key, time signature

You can change key, clef or time signature any any point in the score. *capella* will automatically adjust to display the correct notation.

➔ **How to insert clef, key and time signature changes**

1. Position the cursor where the change should take effect.
2. Select menu: INSERT → CLEF, KEY, TIME SIGNATURE... or click on the note editing toolbar. A dialog opens with one tab each for **Clef**, **Key** and **Time Signature**.
3. All three tabs are initially set to **Unchanged**. Enter your changes on all or any of the tabs.
4. If required check **All voices of the system** at the bottom of the dialog. In this case the signatures are inserted at the same chronological position in all voices.

NB: *capella* displays changes of clef, key and time signature according to the common conventions of notation. Whenever you change clef, key or time signature, *capella* will automatically remove any clef, key and time signature changes that have been rendered superfluous through the change.

➔ **How to set clef, key and time signature simultaneously for all staves of a system**

(a) Before you select the relevant menu, extend the cursor to a system cursor (see page 75).

(b) Set the check box for **All voices of the system** at the bottom of the dialog.

➔ **How to delete clef, key or time signature for all staves in a system**

1. Mark the section across all staves of the system that contains the clef (and/or key, time signature).
2. Delete the marked section with Del.

Clef

Automatic octave shifting with clef change. Select menu: EXTRAS → OPTIONS → NOTE ENTRY and decide whether transposition should occur automatically when clef changes are made. Such transposition would be effected up to the end of the staff or until the next clef change is encountered. If you set the relevant check box the octave will be shifted in such a way that the notes maintain more or less the same position on the staff. If you don't set the tick mark the absolute pitch is maintained.

Octave shifting instruments. When changing the clef in the **Clef, key and time signature** dialog ( ) you can set the preferred octave shifting. This will be indicated by a small figure 8 above or below the clef.

NB: If you do not want to display the octave figure 8 attached to the clef you can define the instrument as transposed by one octave up or down at the SystemTemplate level (click , then click). Click to return to your score.

Key

You can select from two styles of **key change notation**. In one style only the sharps/flats contained in the new key will be shown. The alternative style displays naturals to show previous sharps/flats which are canceled by the new key signature. To change between these two options select menu: FORMAT → SCORE → GENERAL. Tick or cancel **Key change with redundant naturals** to suit your requirements.

Automatic transposition with key change. Select menu: EXTRAS → OPTIONS → NOTE ENTRY and decide whether transposition should occur automatically when key changes are made. Such transposition would be effected up to the end of the staff or until the next key change is encountered. If you set the relevant check box the octave will be shifted in such a way that the notes maintain more or less the same position on the staff. If you don't set the check box the absolute pitch is maintained.

NB: Unusual keys: If you want to set a score that is neither major nor minor, e. g. using only Bb and C# as accidentals, you need to outwit *capella's* automatic behavior: In our example you could use the F Major key and insert the sharp at the beginning of the staff as a graphics object. In order to get the playback to sound right you then need to attach the accidental to each C# and suppress the accidental via menu: FORMAT → NOTES/RESTS → HEADS.

Time signature

You can select any time signature. For irregular time signatures you initially select the longer one and then manually insert fixed barlines for the shorter bars where they are required (see page 71).

Example: When changing from 2/2 to 3/2 time signature you initially set 3/2 and then insert a fixed barline at the end of the 2/2 measure.

No time signature: If you want to notate without any barlines, you can select "No time signature" in the INSERT → CLEF, KEY TIME SIGNATURE... dialog.

When you insert a 2/2 or 4/2 time signature you can decide whether this is indicated by the alla-breve symbol 𝄵. For 4/4 time signature you may select the 𝄴-Symbol.

NB: The symbol for the regular alla-breve time signature and the symbol for double alla-breve time signature is identical. If you switch on color information at menu: View → Color Information or , the double alla-breve sign is indicated in blue.

capella automatically places barlines whenever the bar is full. To set an up-beat you can insert a fixed barline after the note with menu: INSERT → FIXED BARLINE or .

NB: Up-beats are not included with the automatic bar numbering (see page 116).

Chords

As mentioned earlier, the term *chord* is used in its technical and not its musical definition: A chord is a group of simultaneously played notes with identical value. Therefore a single note could be seen as a chord with only one note head. Hence the terms *note* and *chord* are interchangeable in this user guide.

Chords (with more than one note head) can be entered as follows:

- In PC keyboard mode by selecting chord mode () and then entering the notes,
- in mouse mode () by clicking above or below another note,
- in MIDI keyboard mode by touching the piano keys simultaneously (see page 61).

➔ **How to switch on/off chord mode**

1. Use Ins as an on/off switch or select menu: EXTRAS → CHORD MODE or click  on the note entry toolbar .
2. Click the chord symbol  at the bottom right of the status bar.

	Normal mode	Chord mode
Mouse pointer	Arrow	Arrow with chord symbol
Note entry	The current note is inserted at the cursor position.	The current note is added to the chord to the right of the cursor.

While in chord mode you can remove a note (except for a single-note chord) by entering it again. A single-note chord can be deleted by marking the note and touching Del.

While you are in chord mode and the cursor is on the right of the last note/chord, you can enter a series of single-note and multiple-note chords by touching → after each chord.

Repeated chords

To repeat a chord place the cursor behind the chord and select menu: INSERT → REPEAT CHORD or press /.

Ties and slurs

Important: Ties and slurs look identical but their function is distinctly different.

> **NB:** If you set a slur instead of a tie between two notes it may look correct, but playback will be interrupted between the two notes. For correct playback it is therefore very important to acknowledge the difference between the two.

Ties connect two or more notes of identical pitch to one unit that is played back by *capella* without interruption.

Slurs (or phrase marks) connect two or more notes of any pitch. A long slur, covering several notes, gives the instruction that the notes should be played as a musical sentence. In one breath, as it were. They should still sound as distinct notes though. A slur is sometimes referred to as a legato bow or phrase bow, indicating a subtly different feel to the playback.

Ties

Ties are produced automatically by *capella*. It is not possible to tie two existing notes together.

➔ **How to set a tie**

1. Position the cursor on the right of the note (or the chord) that will be the first of the tied notes.
2. If the tied note/chord has a different duration to the first note/chord select the required value in the usual way.

3. Select menu: Insert → Repeat Chord with Tie or press (=). The chord will be repeated and both chords are joined with a tie.

Ties between two systems. To split a system under a tie put the cursor in position and press the Enter key. *capella* will automatically create a tie at the end of the first system and at the start of the second system.

Ties between dissimilar chords.

(a) *More notes in the second chord*: Enter the tied chord with the greater number of notes, repeat the chord with tie and then delete the surplus note heads from the first chord.

(b) *More notes in the first chord*: This is only possible by using a "trick". You need to add an additional voice and put in a chord containing just the extra notes. If you set this chord to have the same stem direction as the tied note it will perfectly overlay it and playback will be correct. If playback is not important you could use slurs.

Edit orientation: Usually, ties are aligned automatically. Should this automatic alignment not deliver the desired result (for example: notation in neighboring staff), then you can set the tie's orientation via the properties of the left note head (Format → Notes/Rests → Heads).

NB: Ties are included during playback.

Slurs

Slurs (legato slurs, phrasing slurs) are elements of the integrated graphics program (see page 149).

➔ **How to create a slur**

1. Mark the notes that should be covered by the slur.
2. Select menu: Draw → Music Notation → Slurs.

Automatic slurs.

capella automatically shapes the slur to fit the marked notes. In most cases you will be happy with this, however you can drag the slur to any shape (see page 149). NB: If you later transpose the notes or change the number of bars in a system *capella* will automatically reverse the slur to its default (also see page 153).

In staves with two or more voices make sure that you mark the correct notes for the slur. Otherwise you might find that any later adding or removing of notes - or transposition - would cause the slur not to adapt correctly.

You can ask *capella* to automatically reshape slurs without having to transpose the notes. This might be useful if you have added or removed notes after you had drawn the slur. Select menu: Draw → Adapt to notes.

Barlines

Under normal circumstances you do not need to enter barlines, as *capella* adds them as soon as each bar is filled. If it is impossible to fill the bar perfectly because of the combined note duration of the bar *capella* will indicate this with a red barline (if color information is switched on with). If you need to have a longer note than the bar can contain (perhaps for syncopation) you can achieve this by splitting the note length into two tied notes. The tie can span across a barline. Correctly filled bars show green barlines.

There are two exceptions when the automatic barline has to be overridden:

- A score starts with a partly filled bar e. g. up-beat / anacrusis.
- A special barline is required e. g. at the end of sections within the score or repeat barlines.

For these two cases *capella* offers fixed barlines:

➔ **How to insert a fixed barline**

1. Position the cursor, where you want to insert the barline.
2. Select menu: INSERT → FIXED BARLINE or click .
3. If you want to insert the fixed barline into all voices of the system at the same chronological position, you must set the tick mark at "*For all voices in the system*".
4. Click one of the seven barline options. The barline will only be inserted into those staves that show notes or rests at the same chronological cursor position. Compare this with the problems when splitting systems (see page 92).

Mensural barlines

Special rules apply to mensural barlines which you can preselect in page 102. Here, it is permitted that notes are held beyond barlines.

Tips and Tricks

Delete fixed barlines. Barlines including final barlines and repeat barlines can be deleted like ordinary notes with Del or ←.

NB: In *capella* fixed barlines are separate objects like notes and rests.

Vertical Extension. You can specify how the automatic barlines should be drawn by changing settings in the SystemTemplate. Select menu: VIEW → SYSTEMTEMPLATE and in the SystemTemplate window drag the mouse across the staves that you want included in your barline instruction. Now select menu: SYSTEMTEMPLATE → BRACKETS, BARLINES..., where you can specify whether barlines should cut across the selected staves including

the gaps between staves, should only be positioned on each selected staff or should only cover the gaps between the selected staves. Also see page 71.

This setting will now apply to all automatic barlines. You can still vary this by using fixed barlines. For example in a four part choral score you can have automatic barlines set through staves only, leaving space for lyrics under each staff, while putting a fixed barline at the end of the system that cuts across staves and gaps.

Fixed barlines for all staves. There are two ways to position a fixed barline across all staves in a system:

(a) Extend the cursor to a *system cursor* (see page 75) by dragging it vertically across the system before you select menu: INSERT → FIXED BARLINE...

(b) Select menu: INSERT → FIXED BARLINE... and set a tick mark at FOR ALL VOICES IN THE SYSTEM.

Delete fixed barlines for all staves. Mark the fixed barline across all staves in the system and press Del.

For more information see page 193.

Editing notes

Deleting and copying notes

A *capella* staff consists of one or more voices. Each voice is a string of timed objects (chords, rests) and modifiers (key, etc.). For the sake of simplicity we call all objects that are strung along one voice *note objects.*

You can delete note objects with the following commands:

←	Delete single note object or marked note objects to the left of the cursor.
Del	Delete single note object or marked note objects to the right of the cursor.

Block operations

A *Block* is an area of the score that is not empty. Blocks can be marked with the mouse or the PC keyboard. You see a flashing cursor while no block is marked. *capella* distinguishes between six different types of blocks. The following commands can be applied to all blocks (see restrictions with individual note heads):

Delete. All objects included in a block are deleted when you press Del (for deleting a single note head, though, proceed as described in page 68).

Edit. Depending on the type of block, different editing options are available. They apply to all or some of the marked objects.

Blocks of note objects or system blocks (not individual note heads!) can be cut/copied/inserted via the clipboard. Use menu: EDIT → CUT, EDIT → COPY or EDIT → PASTE or their corresponding icons ,  or  for these operations. The *capella*-specific format used in these operations cannot be interpreted by other programs.

Here are the six different types of blocks.

Note head

An individual note head in a chord.

Marking with the mouse: While holding down Ctrl click the note head. If you miss the small note head select menu: VIEW → ZOOM and enlarge the display.

Marking with the PC keyboard: Position the cursor to the left of the chord and press #. The lowest note of the chord will be marked. Press ↑ until the required note head is marked.

Notes

One or more chords or rests in a voice. The block may contain modifiers.

Marking with the mouse: Drag the mouse (with left mouse button held down) across the notes without deviating from the voice.

Marking with the PC keyboard: Position the cursor to the left of the first note to be marked and then use → while holding down Shift to extend the marking to cover the last required note.

Copy: You can copy a marked block of notes to the clipboard with menu: EDIT → COPY or .

Paste: Any block of notes that has been copied to the clipboard can be inserted at the current cursor position into the score with menu: EDIT → PASTE or .

Voices

One or more voices on a staff.

To mark voices see page 98.

Staves

One or more staves in a system.

Marking with the mouse: Hold down [alt] while dragging the mouse (with left mouse button held down) across the stave(s). Then press [alt] again in order to bring the keyboard's focus from menu bar back to score view.

Marking with the PC keyboard: Position the cursor anywhere in the first stave and mark it with Edit → Mark → Voice ([shift]+[Ctrl]+[D]). While holding down the [shift] key, move it to the last required stave.

Systems

One or more systems of a score.

Marking a single system: Position the cursor anywhere in the system and select menu: EDIT → MARK → SYSTEM.

Marking several systems with the mouse: If the entire block that you want to mark is visible on screen you can drag the mouse across the systems. If the entire block is **not visible**, position the cursor at the beginning of the block, scroll to the end of the block and while holding down [shift] click the left mouse button.

Marking several systems with the PC keyboard: Position the cursor anywhere in the first system and while holding down [shift] move the cursor with an arrow key ([up] or [down]) to the last system of the block.

Marking the entire score: To mark all systems of the score use menu: EDIT → MARK → ALL.

Copy: A system block can be copied to the clipboard with menu: EDIT → COPY or .

Paste: Any system block that has been copied to the clipboard can be inserted at the current cursor position into the score with menu: EDIT → PASTE or .

System range

A chronologically limited block of note objects two or more voices/staves deep within a system. Starting and ending points must be synchronous across all voices in the block.

Marking with the mouse: Drag the mouse from a position to the left of the first note object of a voice to behind the last note object of another voice in the system.

Marking with the PC keyboard: Position the cursor in front of the first note object of a voice and while holding down Shift move it with an arrow key (→ or ↓) to behind the last note object in another voice of the system.

System cursor: A system range (see above) without any note objects across the entire system. Drag the normal cursor across all staves until it spans the entire system. This will allow you to insert modifiers in all voices of the system.

Edit individual note heads

Individual note heads of a chord can differ from each other in the following attributes:

- Head shape,
- Display of the accidental (automatic, suppressed, forced, bracketed),
- Correction of the horizontal position of its accidental,
- Mute (do not play back).

If you want to set one of these attributes for an individual note head in a chord, you need to mark the head and use menu: FORMAT → NOTES/RESTS → HEADS (see page 73).

To modify the horizontal position of an accidental place the cursor in front of it and while holding down J use the → or ← key to adjust the position. Use J+Home to re-position to the default location.

Note types

Common characteristics of notes and rests

Access menu: FORMAT → NOTES/RESTS → GENERAL to set certain characteristics about size, visibility and value of notes and rests.

The meaningful combinations of these attributes are explained in more detail here:

Cue notes. Click the button “Cue note” to set the tick mark for “small” and remove the ticks for “No value” and “Invisible”.

Place holder or dummy note. This button switches **off** "small" and switches **on** "No value" and "Invisible". This feature allows you to force additional space on your staff.

Appoggiatura or grace note. This button switches **off** the "invisible" attribute and switches **on** "Small" and "No value". In the drop-down list you can choose between appoggiatura and passing appoggiatura. Grace notes are combined with their "parent" note in the same bar. This is only relevant at the end of a bar.

Acciaccatura. A short forestroke is a small, diagonally crossed out eighth note without value. Access menu: FORMAT → DIRECT NOTE FORMATTING → ACCIACCATURA. If the note is part of a beamed group you need to first split the beam ( ) to obtain a flag.

NB: You can obtain the same result by assigning the attributes "small", "no value" and "tremolo bar" to an eighth note. The tremolo bar will automatically be drawn correctly in this combination.

Note value

Modify. Individual note values can be shortened or lengthened later with < or >. If note objects have been marked their value will be halved or doubled. If the cursor is positioned in front of a note its value will be modified in smaller steps alternating between dotted and non-dotted values.

Access menu: FORMAT → NOTES/RESTS → VALUE to standardize the value of marked notes.

Stems

Direction. Normally you don't need to concern yourself with the stem direction. Notes below the centerline have their stems pointing upwards, above the centerline pointing downwards.

Stem direction of a voice. Whenever you insert an additional voice (menu: INSERT → VOICE...) or if you want to modify a previously entered voice, (FORMAT → VOICES (LYRICS)... you choose between three options:

(a) *automatic:* The stems are aligned as indicated above. This is the standard for single-voice staves.

(b) *upwards:* All stems are directed upwards, regardless of note positions. This is the standard for the upper voice on a two-part staff.

(c) *downwards:* All stems are directed downwards, regardless of note positions. This is the standard for the lower voice on a two-part staff.

Deviating stem direction for single notes. Deviations from the default stem direction can be enforced for each individual note at menu: FORMAT → NOTES/RESTS → NOTES → STEMS.

Notes without stem. Stems can be removed from individual note heads at menu: FORMAT → NOTES/RESTS → NOTES → STEMS.

Stem length. The stem length is automatically defined by the common conventions of notation. However you may modify the stem length at menu: FORMAT → NOTES/RESTS → NOTES → STEMS.

> **NB:** If you shorten the stem by more than 7/2 staff line gaps you will get a "negative stem" that does not correspond to common notation conventions! See page 20.

Tremolo bar. Select menu: FORMAT → NOTES/RESTS → NOTES → STEMS to set up to five tremolo bars in the appropriately named drop-down list.

Note heads

You can select note heads that differ from the standard sloping oval shape at menu: FORMAT → NOTES/RESTS → HEADS.

Example: *Flageolett notation.* This is where rhombic shaped heads are used in chords to indicate where string harmonics occur. Mark an individual note head in a chord by holding down Ctrl and clicking with the mouse. Then select menu: FORMAT → NOTES/RESTS → HEADS to select a different shape.

No note head. Amongst the above mentioned list of shapes for note heads you can also select "No head". This feature enables you to attach any graphic object to the note, replacing the note head, e. g. graphics of flower heads for nursery rhymes.

> *capella* remembers the last set note shape and will apply it to newly entered notes. If you wish to enter standard note heads again simply switch back to standard at the first "wrong" note head.

Articulation symbols

The most important articulation symbols (staccato, tenuto, staccatissimo, normal accent, strong accent, soft attack, more attack) are supported by *capella* as note attributes. Select menu: FORMAT → NOTES/RESTS → NOTES → ARTICULATION SYMBOLS and choose from the drop-down list.

Staccato, tenuto and one user-defined symbol can be inserted and/or deleted directly without opening this dialog.

Staccato: FORMAT → DIRECT FORMATTING → STACCATO or Shift+Ctrl+C or click ·.

Tenuto: FORMAT → DIRECT FORMATTING → TENUTO or Shift+Ctrl+T or click -.

User-defined symbol: Insert/delete with Shift+Ctrl+A.
Pre-define at menu: FORMAT → NOTES/RESTS → NOTES → ARTICULATION SYMBOLS.

> **NB:** Staccato and tenuto can also be selected in combination. This is not a contradiction because the tenuto symbol can also be used as a dynamic symbol.

Notation in neighboring staff

In piano notation, sometimes a single melodic line is to be divided between the two hands, i.e. between two staves. You should first enter the notes in one of the staves, such that ledger lines appear. Then mark the notes that shall change their staff, and

open Format → Notes/Rests → Notes→ Notation in neighboring Staff. In the drop down list, choose the “below” or “above” options. The notes will stay in their home staff, concerning cursor navigation, voice playback, and voice extraction. But they will be displayed in the chosen neighbor staff.

For the typical use case with beamed notes, see also page 79, Beaming across two staves.

Rest properties

Using Format → Notes/Rests → Rests you can influence the automatic vertical positioning of rests and can switch off the automatic. For whole rests and breve rests, you can convert them into whole bar rests and vice versa (see page 62).

Whole bar rests and multiple bar rests

Using Format → Notes/Rests → Whole Measure Rests you can set properties of whole ande multiple bar rests (see page 62). You may select traditional style, which is a combination of single, double and quadruple rests, or multiple bar rest style. You can also shorten or lengthen multiple bar rests like other rests directly using [<] and [>] (see page 76).

Breath mark

Select menu: Insert → Breath Mark (or press [!]). The breath mark is a graphic object that is attached to the note to the left of the cursor. Like any other graphic object it can be edited (e. g. moved or deleted).

For experts: Opinions vary as to what a breath mark should look like. You may therefore decide for yourself which symbol *capella* should use:
Use a text editor to open the file `capella.dat` (see page 187) and look for the `[Defaults]` section where you find the following line:
`BreathMark=0,44,64,-88`
You can modify these numbers in accordance with the following definitions:
1.Number: 0 for capella3.ttf oder 1 for the standard-text **Font** (as defined one line up in `capella.dat`).
2. Number: Character code (here 44 for comma; see page 194).
3. Number: Relative horizontal position in 1/32 staff line gaps (see page 20).
4. Number: Relative vertical position from the center staff line in 1/32 staff line gaps.

Beams and flags

Eighth notes and shorter notes are displayed either with a flag or combined in beamed groups. You can influence beaming in two ways, globally and locally:

1. **Global instruction for systems**: Mark the entire score ([Ctrl] + [A]) or those systems that you want to modify (see page 74). Select menu: Format → Systems... → General. Open the “Beam grouping” drop-down list and choose one of the options (from “Flags only” to “Whole bar beams”) that meet your requirements.

The options “Flags only” and “Whole bar beams” are self explanatory. The following table shows the groupings for the other three options:
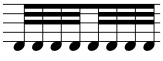
Time signature (Number of units / measure)	2	3	4	5	6	7	8	9	10	11	12
small beam groups	1	1	1	1	1	1	1	1	1	1	1
medium beam groups	1	1	1	2+3	2	3+2+2	2	3	2	3+2+2+...	2
large beam groups	2	3	2	5	3	7	4	3	5	11	3

Do not confuse number “1” with “Flags only”: The table refers to units per bar, not to notes.

2. **Local correction:** Mark the relevant gaps between notes (the cursor itself marks one gap!) and select menu: Format → Beaming → Split; or → Join; or → Subdivide; or → Automatic.

NB: If you choose the current state as local correction – e. g. joining already automatically joined beam – you will see no difference. The instruction however is stored with the notes. If you now change the global settings to “Flags only” you will find the selected beam groups intact.

Beam division



Extended beam groups are often subdivided by splitting all beams except the first one. Position the cursor where you want to subdivide and select menu: Format → Beaming → Subdivide.

NB: Please avoid misleading subdivisions. If you subdivided the beams between the first and second note it would be impossible to distinguish the first note from an eighth note. In reality it is a 1/32 note and *capella* would continue to interpret it as such.

Gradient and position

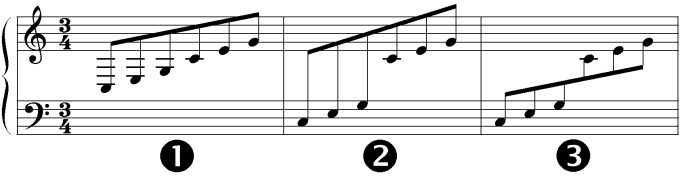
capella calculates a beam's gradient by placing an imaginary line close to the notes in the group. This theoretical gradient is then transferred into a - usually smaller - real gradient. In classic literature relatively steep gradients were common, today more subtle gradients are preferred. You can modify the type of gradient if you don't like *capella's* default value. Select menu: Format → Score... → Beam Gradient.

Placement and gradient of a beam can be directly modified in small steps. Position the cursor on the beam and while holding down N press one of the cursor keys:

← tilts the beam to the left (left lower, right higher),
→ tilts the beam to the right (left higher, right lower),
↑ shifts the beam upwards without changing gradient,
↓ shifts the beam downwards without changing gradient.

With the above commands you can adjust the beam so that it is central with notes above and below it.

Beaming across two staves. Notes and chords can be set in the upper or neighboring lower staff, see page 77. This is particularly useful when notes that extend across two staves should be combined to share one beam, with note stems pointing upwards and downwards as shown here.



For this example proceed as follows:

1. Switch on automatic beaming at menu: FORMAT → BEAMING → AUTOMATIC or .
2. Set all notes in one voice, in this case in the upper staff.
3. Mark the notes you want to move to the neighboring staff, in this case the first three notes, and select menu: FORMAT → NOTES/RESTS → NOTES → NOTATION IN NEIGHBORING STAFF and choose from the drop-down list "Show notes in staff below".
4. Adjust the beam as indicated above with holding down [N] and touching the arrow keys until it is positioned between the staves.

NB: After you have moved notes to a neighboring staff you must still regard them as belonging to the original staff when you want to format or edit them.

Triplets and other irregular divisions

capella supports triplets, duplets, quintuplets and all other bipartite and tripartite irregular divisions up to 15-lets.

➔ **How to create an irregular division**

1. Enter the notes as you would normally do.
2. Mark the notes of the group that will form the irregular division.
3. Select menu: FORMAT → NOTES/RESTS → VALUE.
4. Under "Irregular division" make your choice.
5. At the bottom of the dialog tick the options for bracket and figure if you want the irregular division to be bracketed with the corresponding figure in the center.

If the irregular division extends across a beamed group, and you therefore don't want to set a bracket, remove the appropriate tick mark in step 5 above.

For a triplet you can shortcut the steps 3 to 5 above by selecting menu: FORMAT → DIRECT NOTE FORMATTING → TRIPLET or click . Bracket and figure will be set according to your previous adjustments in the dialog box.

NB: When you switch on color information ( ) you will recognize irregular divisions by the blue note heads.

Uncommon irregular divisions

If you want to apply an irregular division that does not have a shortcut button in the FORMAT → NOTES/RESTS → VALUE dialog, click the **Other** option and click >> in the dialog box. A sub-dialog box will open which contains a full range of irregular divisions. Your previous setting for **Other** is displayed and can be applied without opening the sub-dialog by clicking OK.

Before you determine the group size in the sub-dialog select **Bipartite** or **Tripartite division**:

Bipartite division plays 3 notes in the time of 2 (or 4 if **Lengthen note value** is checked). The total value of the group is a power of two (2, 4, 8, 16, etc.).

Tripartite division (for dotted notes) plays 4 notes in the time of 3 (or 6 if **Lengthen note value** is checked). The total value of the group is three times the power of two (3, 6, 12, etc.).

NB: Make sure that the total note value of the group of notes that you mark is perfectly divisible by the type of irregular division, i. e. exactly divisible by 3 for triplets, 5 for quintuplets etc.

Triplet brackets

Irregular divisions in *capella* are automatically provided with an appropriate bracket, except in cases where the marked block extends across more than one voice. The bracket is a graphic object from the built-in drawing program and can be edited as such.

Automatic orientation. The same rules apply as for slurs (see page 70).

NB: You can delete a bracket without affecting the irregular division property of the notes. If you convert irregular divisions back to regular divisions the bracket will be removed automatically.

Brackets over beamed notes can be suppressed, just leaving the number. Select menu: FORMAT → NOTES/RESTS → VALUE and select regular division, click “OK” and then re-apply your required irregular division without setting the tick mark for either bracket and/or number. You can also delete the bracket like any other graphics object and then re-apply the formatting with or without bracket / number.

Large runs of triplets etc. can be produced by marking large blocks, turning them into triplets and then deleting the brackets.

If you mark several staves *capella* automatically leaves the triplet brackets off.

Canceling irregular divisions

To cancel an irregular division follow the steps above to create one, and at step 4 select the “Regular” option. You can also cancel multiple marked irregular divisions in this way.

Setting several triplets simultaneously

When setting several triplets within the same voice *capella* will automatically split the marked area into several triplets with brackets. In the rare case that such automatic division will cause unwanted groups, you can undo (EDIT → UNDO or ↶) the division and re-create a triplet with a single bracket using the dialog at menu: FORMAT → NOTES/RESTS → VALUE.

NB: *capella* will group the brackets in a suitable manner for the run of notes. For example if you mark 15 eighth notes you will get 5 bracketed sets. To create a single bracket over all the notes add or delete a note so that the number is no longer divisible by the irregular division. *capella* will now create one long bracket and you can add or delete the extra note. Now adjust the bracket length like any other graphics object.

Moving notes, rests and accidentals

It is sometimes necessary to move notes, rests or accidentals to avoid clashes, especially in multi-voice staves. Notes and accidentals can be moved horizontally and rests can be moved horizontally and vertically. For information on moving notes musically, i. e. transposition, see page 114.

➔ **How to horizontally move one or more notes**

1. Mark the notes.
2. Select menu: FORMAT → NOTES/RESTS → GENERAL.
3. Set the required horizontal position with the slider.

This method is particularly useful to reset every note in a score to zero.

The blue text in the dialog points to a quick method for individual notes:

➔ **How to horizontally move one note**

1. Position the cursor to the left of the note.
2. While holding down J press ← or → repeatedly until the note is in the required position.

➔ **How to horizontally move an accidental**

1. Mark the note head.
2. While holding down J press ← or → repeatedly until the accidental is in the required position.

Colors

NB: In medieval handwritten music color was used extensively, to add information and to beautify the score. When printing was introduced color was no longer practical and so it disappeared. You can indi-

vidually color all elements of a *capella* score. The use of color can be very helpful in teaching environments.

➔ **How to assign color to the individual elements**

System bracket: FORMAT → SYSTEMS... → COLOR OF SYSTEM BRACKETS.

Staff: FORMAT → STAVES → COLOR OF STAVES.

Notes/Rests: FORMAT → COLOR. For notes the selected color applies to heads and stems.

Clef, key, time signature, fixed barline: FORMAT → COLOR.

Beam: If all notes within a beam group have the same color this color will also apply to the beam. Otherwise the beam will remain black.

NB: If you want a black beam when all the notes have the same color you can achieve this by making one of the notes very slightly different to the others. This is enough for *capella* to apply the above rule. For example mark one of the notes and access the Color menu. Click the "More Colors" button. Select the basic color you used for the notes and then in the Red Green Blue boxes enter a small variation. If you selected red then these boxes will be 255,0,0. Change them to 254,0,0. The difference is too small for the eye to detect, but *capella* will leave the beam black.

Graphic objects: Right-click the object and from the context menu select EDIT... → COLOR. For multiple objects in a marked block select menu: FORMAT → COLOR (NOTES GRAPHICS)...

Text

Text can be inserted anywhere in the score. Special functions are provided for entering instrument names and Lyric text, as these types of text have their own categories in *capella*.

Text elements of the integrated drawing program

The integrated drawing program provides two types of text objects: *Plain text* and *Freeform text*.

Plain text is commonly used for small text elements that do not require extensive formatting. Basic formatting like bold, italic and font size are available, but these elements cannot contain more than one font type.

Freeform text is commonly used for headers, footers and for annotations and allows for more extensive formatting including different font types within one element.

For information about anchoring and editing these objects please see page 149.

The following overview should help you choose which type of text to use.

	Plain text	Freeform text
Font	Uniform for the entire element	Each character can be formatted individually
Paragraphs	Each line break must be entered manually	Only new paragraphs need to be added - text wraps around automatically
Memory (RAM) requirement	Low	Higher
Font size	Relative - changes with staff size change, see page 20	Absolute - remains at size entered; independent of size of notes but dependent on Windows settings, therefore not 100% portable
National characters	Depends on regional settings in Windows	Exchangeable
Automatic page numbering	with #	Not available
Automatic page numbering	with $(|)	Not available
Automatic voice names	with $(_), $(-), $(.), $(:)	Not available
Frame	Adapted to text	Not available

Plain text

Position the cursor to the left of the note to which the text must be anchored and select menu: DRAW → PLAIN TEXT... or click [T].

New lines are created by pressing [↵]. Although Plain text can only contain one font type and size you can get around this by adding several separate Plain text entries together. As Plain text is re-sized in step with any changes to staff size (see page 92), this form of text is the most appropriate choice for performance instructions such *ff, rall etc*.

Plain text allows you to insert field commands i.e. certain strings which are not displayed but which are replaced according to certain rules by other content.

String	Will be replaced in the score by
#	Page number (only if anchored to the page)
$(|)	Bar number (only if anchored to note objects)
$(_)	Instrument name (for objects anchored to the page if there is only one

	instrument name in the score or in the voice extraction)
$(.)	Abbreviated Instrument name (see above)
$(-)	Instrument name between staves (see above)
$(:)	Abbreviated instrument name between staves (see above)

NB: When you enter *Plain text* it will always start in the default font. You can change the default font by amending an entry in the `capella.dat` file (see page 187). Open this file using a text editor such as Notepad. Look in the section [Defaults] for a line that will probably say Font=Times New Roman,12,0,0. Replace this with your preferred font, for example Font=Arial,18,1,1. The 18 is the point size and the second number is 0 for normal and 1 for bold. The third number is 0 for normal and 1 for italic. If you have entered Plain text throughout the score in the default setting then changing this in the `data\capella.dat` file will revise all the entries in the score.

Freeform text

Position the cursor to the left of the note to which you want to anchor the text and select menu: Draw → Freeform Text.

Freeform text offers much greater variety than Plain text. Freeform text is saved in Windows Rich Text Format (RTF) and because of this you can copy and paste Freeform text between *capella* and other Windows programs. Text will wrap around automatically and you need to use ↵ only to start a new paragraph.

National special characters. In *capella 7*, unicode is used, so you can enter and mix any special characters from different languages even in Plain text (see page 91). But if you want to use changing fonts or want to produce scores with foreign language characters that can be seamlessly processed by older versions of capella, freeform text is the best choice.

Older versions of Windows used a system referred to as *codepages* to handle different international character sets. In Rich Text Format, characters are stored in a portable format that includes the codepage information, so *capella* freeform texts can be restored under any foreign language setting.

Special paragraph formats. To edit Freeform text right-click it with the mouse to access the context menu and select Edit. Several formatting options are available in the dialog. For additional formatting options you can write your text in Wordpad (part of the Windows installation) and use its formatting features e. g. hanging indent or tabs. Then mark the paragraph in Wordpad and copy it to the clipboard with Ctrl+C, from where you can paste it into the editing dialog in *capella* with Ctrl+V .

White background. Due to an incompatibility between the various Windows versions, the background of a Freeform text in Windows 2000/XP/Vista/7/8 is white and not transparent as in Windows 98/ME. It could therefore happen that Freeform text would

cover your notes. To avoid this you can position the Freeform text behind the notes (see page 154).

NB: If you have older *capella* scores that used to display the text with transparent background (and that now covers your notes) you can use the "text to background" script that is included in this version of *capella* to position all Freeform text of a score to behind the notes (see page 180).
On several systems, crashes were reported after incorrect calibration. As a precaution the "old" procedure creating dotted slurs and white background for Freeform text has been set. In your "...my documents\capella\"folder you will find the line `RichTextPatch=opaque` in section `[Defaults]` in the file `capella.dat`. If you replace this line by `RichTextPatch=opaquePdf`, then a transparent background will be displayed on screen and on standard printers. When printing PDF, however, the background will remain white (see page 169). Delete this line or write `RichTextPatch=none` to create a transparent background for PDF printing (see page 187).

Calibration

The size in which Windows displays the Freeform text is independent of the staff line gap (see page 20). Starting with version 7.1-16, it is also independent from the Windows text size settings (START → CONTROL PANEL → DISPLAY → SETTINGS → ADVANCED → GENERAL). Thus it is no longer necessary nor possible to run the calibration procedure with `calibrate.cap`, located in the program folder.

Headers and Footers

Headers and footers that should appear on every page or on selected pages only (e. g. odd or even pages) can be added by anchoring text objects of the integrated graphics program to the pages (see page 151).

Watermarks. In the same way you can create watermarks i. e. page backgrounds. These must be layered as background (see page 154).

Page numbers. Create a Plain text object with the "#" character and anchor it to the page (see page 151). The "#" will automatically be replaced by the relevant page number when you select "Page Layout view" ( ) . To define on which pages the page numbers should appear right-click the page number in the document, select EDIT from the context menu and open the "Pagination" tab. A multitude of options is available.

If your score extends over several files you can adjust the page counter for each file accordingly at menu: FILE → PAGE SETUP.

Title

To provide space for a title you should go to the SystemTemplate ( )and select menu: SYSTEMTEMPLATE → SPACING... ( ) where you can increase the space above the first system.

Additional information: See page 118.

Lyrics

capella offers two options to edit lyrics:

- **Lyrics mode** allows you to edit the text directly in the score. It is the easiest way to enter lyrics.
- **Lyric Text dialog** allows you to edit the Lyric text in a separate window and can be very helpful with subsequent modifications to the lyrics.

Lyrics mode

To enter lyrics place the cursor in the correct position on the relevant voice and select menu: Extras → Lyrics → Edit in Score or click L.

A smaller cursor appears below the staff. You can now enter the syllable under the current note. To end a syllable and to jump to the next note press Space at the end of a word or - for the next syllable of the current word.

Syllables can have the following attributes:

Attribute	Meaning	How to set or delete the attribute
Left-justified	The syllable is left-aligned with the note (chord) above. Normally syllables are centered to the note head above.	Position the cursor anywhere on the syllable and press Tab.
Hyphen	A hyphen is placed in the middle between one syllable and the next – space permitting .	Position the cursor at the end of a syllable and press -.
Underline	Extends from end of syllable to end of next note, signifying an extended syllable. In this case the next note should not have a syllable of its own.	Position the cursor at the end of a syllable and press _ (underscore). This setting also positions the syllable left justified.

You can navigate Lyric text with the cursor keys:

←	To the next letter left. If the cursor is positioned at the beginning of a syllable it will jump left to the next syllable.
→	To the next letter right. If the cursor is positioned at the end of a syllable it will jump right to the next syllable.
↑	To the next verse above.
↓	To the next verse below (maximum nine verses). **NB**: Do not press this key repeatedly to obtain more space between verses. Set this space as explained below. The maximum number of nine verses is defined as nine lines i. e. that would include blank lines.
Ctrl+←	To the next syllable left.
Ctrl+→	To the next syllable right.

NB: Be careful that the lyrics are positioned within the area that the SystemTemplate has allocated as bottom margin. Otherwise the text will not be displayed properly.
Lyrics with several verses are easier to read if only the first verse is set below the notes and the other verses are printed as blocks of text at the bottom of the page.
If you want to add a hyphen after the last syllable (rather than between syllables) you will need to add a dummy letter after the last syllable to get the spacing right. You can delete the dummy letter after adding the hyphen. Use the same technique to continue an underline to the end of the music.

Lyric text dialog

Select menu: Extras → Lyrics → Edit in Window in order to work on all the verses of a voice at once and/or to copy and paste lyrics. A quick way to understand how to write Lyric text into this window is to enter a couple of verses directly into the score and then to view and edit them in this dialog.

Verse numbers can only be entered in this dialog and not directly (see explanation in the dialog). Everything else can be entered either directly into the score or via this dialog. In some cases the use of this dialog can save a lot of extra work.

Suggested uses of the Lyric text dialog

The following editing options are available:

Copy Lyric text from one voice to another voice. Open the **Lyric Text** dialog, mark the entire text and use Ctrl+C to copy it to the clipboard. Close the dialog (click on "Cancel") and position the cursor in the other voice. Open the **Lyric Text** dialog again and paste the text from the clipboard via Ctrl+V.

Shift several syllables of a verse. To shift all syllables of Lyric text over to the next note insert a slash "/" at the beginning of the line in the **Lyric Text** dialog.

Insert verse between two existing verses. Open the **Lyric Text** dialog and position the cursor at the end of the text of the first verse and press Ctrl+↵. You can then either

enter the new verse immediately into the dialog or close the dialog and insert it in lyrics mode.

Fonts and spacing of verses

You can set the font for each verse of a voice and also the spacing between verses at menu: FORMAT → VOICES (LYRICS)...

To change the font throughout the score select the entire text with Ctrl+A before you access menu: FORMAT → VOICES (LYRICS)...
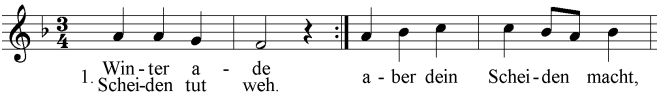
> **NB: You might want more than one font in a verse.** In older *capella* versions, you needed to copy and paste the notes to a new voice in the same staff to achieve this. This also copied the lyrics. You could then format the lyrics of the second voice differently from the first voice. You might find such detours have been taken in older *capella* scores.

Change default font. If you find that again and again you change the font for lyrics to your preferred standard font, you can change the default in all your score templates.

1. Open your score templates one by one (see page 55); do not use menu: FILE → NEW → FROM TEMPLATE but FILE → OPEN.
2. Mark the entire file with Ctrl+A
3. Select menu: FORMAT → VOICES (LYRICS)... to change the font and set the required distance between verses. You will not see any immediate difference, because the templates do not contain any text, but the properties are now set for any text that will be added to documents based on these templates.

Varying distances between verses. You can vary the distance between verses by first reducing the distance and then using ↵ to insert several blank lines between the verses in the **Lyric Text** dialog.

Mixed verses. This example shows that it is easy to create Lyric text consisting of partially one verse and partially two verses.



There are actually three verses here. The second verse skips the first five notes/rests. In this example the distance between verses has been set to half the standard value.

Instrument names

Instrument names are set in the SystemTemplate (VIEW → SYSTEMTEMPLATE or) by using menu: SYSTEMTEMPLATE → NAMES... or abc and are automatically shown for all relevant staves. The left margin will be adjusted automatically depending on the font and font size you select in this dialog. It is not recommended to use plain text objects for instrument names, except in combination with the automatic voice names $(_) or $(.), which refer to the names set in the SystemTemplate (see page 84).

Variations of instrument names. For each staff you can set a full description and an abbreviation for instrument name (e. g. “Violin” and “Vln.”). See also step 1 of the ScoreWizard. Which of the two descriptions will be used in the score can be set for the current and/or the marked system(s) at menu: FORMAT → SYSTEMS... → GENERAL. You can also select “None”.

Special characters

In all texts of a *capella* score (plain text, freeform text, lyrics, instrument names) you can enter any special characters. There are several ways to do that, quite similar as in most word processing software:

- For characters bound to a foreign language, simply change the Windows keyboard language. You may also open the on-screen keyboard (All Programs – Accessories – Ease of Access), to see which character is associated to which key.
- For other special characters use the Windows Character Map (All Programs – Accessories – System Tools). Choose the font and the character, and copy it to the clipboard. You can then paste it in *capella*. This does not work, though, in lyrics mode. For lyrics, you have to open the lyric text dialog (see page 89) and paste it there.
- If you know the numerical code of the character (it is displayed in the status line of the Windows Character Map, when you have chosen a character), you can enter it as decimal number via the numerical block on your keyboard while pressing the Alt key. *Example*: The copyright sign © (Unicode U+00a9) can be entered as Alt+0169.

With every special character, you should check that the chosen font really contains it.

Troubleshooting

At the end of Plain text the last character is not printed. This is a result of poorly written printer drivers. Add a space to the end of the text using the text editing dialog.

The last line of text is not printed. Open the Plain text dialog and add a new line at the end of the text with Ctrl+↵.

Components of a score

Staff lines, size of notes

The number (usually 5), type (solid or broken) and position of each staff line can be set for each staff separately in the SystemTemplate.

Normal and small staves. You can set two different heights for staves in the SystemTemplate. Each system can contain any number of normal and small staves. Access the SystemTemplate ( ) and then select menu: SystemTemplate → Spacing or click .

NB: For special applications a staff graphic is also available from the integrated graphics program. This is scaled automatically by *capella* to the size of the staff that the cursor is on. These graphical staves can be stretched to any length and positioned anywhere on the score. They are useful for special effects.

If you only want to change the size of your notes, take this shortcut:

➔ **How to enlarge or scale down the size of notes in a score**

1. Select menu: Format → Direct Note Formatting → Note Size → Bigger/Smaller. Alternatively click the relevant icons or on the direct formatting toolbar several times until you have the correct size.
2. After major enlargements or reductions in size it might be necessary to adjust the page makeup / pagination to achieve a well-balanced score display (see page 119). For smaller adjustments it is often enough to align left and right page margins. See menu: File → Page Setup.
3. If the font size of lyrics does not fit properly after resizing the notes and/or staves, you must mark the entire score with Ctrl+A and select menu: Format → Voices (Lyrics)... to set the correct font size.

NB: Do not confuse the zoom settings with enlarging or downscaling of notes and staves. If you increase the percentage of the zoom value on the view toolbar (100%) only the display on the monitor is affected, not the print size. When you select a zoom level of 100% the display on the screen will be more or less the same size as the print.

Edit system

Extend system

➔ **How to insert one or more staves into an existing system**

1. Select menu: Insert → Staff. A dialog opens, listing all staves from the current SystemTemplate.

2. Select those staves/instruments you wish to add to your score. Staves with a green name are already part of your score and cannot be added a second time.
3. If the required staff/instrument is not present in the list, cancel the dialog and modify the SystemTemplate first (see page 100 Extending the SystemTemplate).

1. You can access this dialog in SystemTemplate view via menu APPLY TO SELECTED SYSTEM or via the icon on the SystemTemplate toolbar.
2. In SystemTemplate view, you can also double-click the staff to directly add it to the place where your cursor is positioned. If this staff already exists, the INSERT→ VOICE... dialog appears.

Break and join systems, add new system

If a system turns out to be too high for a single page it can be split into several systems. You can also tear off a new empty system from the end of a system.

➔ **How to add an additional system**

1. Position the cursor at the end of a system.
2. Select menu: EDIT → SPLIT SYSTEM or press ↵.

➔ **How to split a system**

1. Position the cursor where you want to split the system.
2. Select menu: EDIT → SPLIT SYSTEM or press ↵.

➔ **How to join two systems**

1. Position the cursor in the lower of the two systems.
2. Select menu: EDIT → JOIN SYSTEM TO ONE ABOVE or press Ctrl + ←.

capella 7 automatically takes care of the following tasks when splitting or joining two systems:

- If a tie, slur, crescendo, decrescendo, volta bracket or octave bracket has to be split, then a continuing element will be automatically created for the following system. If you join systems later, these elements will be merged into one again.
- If you join two systems which do not have the same staff or voice allocation, missing staves or voices are created automatically and filled with filling rests.
- If a system is to be split within a bar, the automatic bar lines will be correctly positioned in the following system. You will not have to enter a fixed barline.

- If the first system is split, several properties of the former second system are automatically taken over into the new second system, for example left indent and style of instrument names.

NB: Take care to split a system at a point where notes/rests are beginning in all voices/instruments to avoid shifting the rhythm in the new system. For example you should not divide a system between two quarter notes in one staff if there is a half note in the same position in the next staff. You can check that the note values are equal either side of the point where you want to divide the staff by trying to create a System Cursor (see page 75). If you can create one then there is a balanced value of notes either side of it.

Left and right indent

Left and right indent of a system can be set at menu: FORMAT → SYSTEMS... → INDENT.

For the left indent you should normally select **Automatic** to allow *capella* to set this indent according to the length of instrument names in your score.

The right indent should normally be zero. For special applications like incipits and coda you can change this value (see page 185).

Justification

To stretch one or more system(s) to the right margin, mark the system(s) and select menu: FORMAT → SYSTEMS... → INDENT and tick **Justified** or click  on the direct formatting toolbar.

If you use voice extraction it might be of interest to select different settings for single voice view and score view. Then tick **different if displayed as** and choose the type of view. (see page 118).

capella ignores the tick mark for **Justified** if the notes cover less than 1/4 page width without justification.

NB: You can also set or remove justification on a marked system with menu: FORMAT → DIRECT NOTE FORMATTING → JUSTIFICATION.

If notes are still extending beyond the right margin in spite of justification being set, this is an indication that too many notes are present in the system. Re-distribute the notes across the systems (possibly using menu: EXTRAS → SCORE WRAP AROUND...), or select menu: FORMAT → SCORE... → NOTE SPACING and tick “Allow extra compression of notes along staff”. This will compress the notes regardless of readability and possibly to a point of being unreadable.

Note alignment within a system
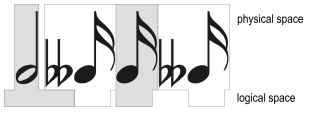
NB: This section is intended for expert users only. Normally the default settings will cater for most requirements.

capella spaces out the notes automatically using rules that experience shows produce a readable score. For unusual circumstances you can modify the automatic spacing settings. To do this select FORMAT → SCORE... → NOTE SPACING. The dialog box contains a pair of sliders that will modify the automatically applied note spacing throughout the score.

In order to understand these settings you must understand the *block model* used by *capella*. Imagine each note was printed on a wooden block like a scrabble piece. These pieces are placed side by side as you enter notes. The *capella* block model however is a bit more complicated in that the pieces are made up of two rectangles.

The physical rectangle is defined by the actual size of the note as a graphic object including its accidentals. The logical space is defined by the note's duration. The pieces are then pushed together until either the physical or the logical rectangles meet.

This figure displays a half note at the left, which requires little physical space. The logical rectangle of that note is larger, matching its duration. The next note is a sixteenth note with double flats and flags, requiring a lot more physical space than its duration requires. As the logical rectangles of these two notes touch the additional space required for the flags is added to the physical space on the right.



The first block is based on the physical size of the note. The second block is sized by the duration of the note.

You see a half note with a long second block reflecting the fact that a half note has a longer duration. If you compare this to the sixteenth note you will see that the second duration block does not add any space to that taken by the upper block, which has to provide width for the flags. If you look at the double flat for both you will see that the one next to the half note is contained within the space allocated to a half note length (you can see a gray block under the flats). The flats next to the sixteenth note are in their own space. The duration block for the sixteenth note does not extend under the flats - they are creating their own space based on the graphic block.

Using the settings at menu: FORMAT → SCORE... → NOTE SPACING you can influence the alignment of notes within the system:

- **Right slider** (absolute note spacing). The change is applied evenly to the logical space.
- **Left slider**. The change affects the relationship of the logical values between the notes.
- **Move notes to allow for lyrics**. More space is given to notes if the Lyric syllable below the note requires it.
- **Allow for graphic expansion of notes**. Notes are re-spaced according to their physical space. If this tick mark is left blank notes will be spaced only according to their logical space.
- **Permit extra compression of notes along the staff**. If you set right justification *capella* will reduce or enlarge the logical note space in such a way that the system stretches to the margins. In order to preserve an easily readable score *capel-*

la will only squeeze up the notes until their respective physical blocks touch. If you tick this box the notes will be squeezed to fit regardless of appearance. You should usually leave this unchecked, however some imported *capella* 2.2 scores may overflow the right margin if it is not ticked. Ticking is therefore a quick fix, but it is preferable to split the system.

System braces

The system braces are displayed in accordance with the settings in the SystemTemplate (see page 100).

Staves

Insert. To insert a new staff into your score select menu: INSERT → STAFF, where you can choose one of the unused staves from the underlying SystemTemplate (see page 100). If there are no more staves available, modify the SystemTemplate of the current score (see page 92, step 3).

Delete. Select menu: EDIT → DELETE → STAFF/VOICE to delete an entire staff from a system. If the staff contains several voices the voice under the cursor will be deleted. Once the last voice has been deleted the staff will also go. Alternatively you could select all voices (see page 98) of the staff and delete them with Del. The staff will be deleted at the same time.

Distance between staves. This distance is normally set in the SystemTemplate. If individual systems require a different setting (e. g. to insert graphics or to set once-off specially low notes), you can set the distance at menu: FORMAT → STAVES... → SPACING. Alternatively use the mouse (see page 48).

NB: Do not use the additional space in order to force a new page. A separate function is available for this (see page 104).

Polyphonic staves

Polyphonic staves are needed to notate several rhythmically independent voices in one staff (polyphony). Rhythmically identical voices could be written as chords.

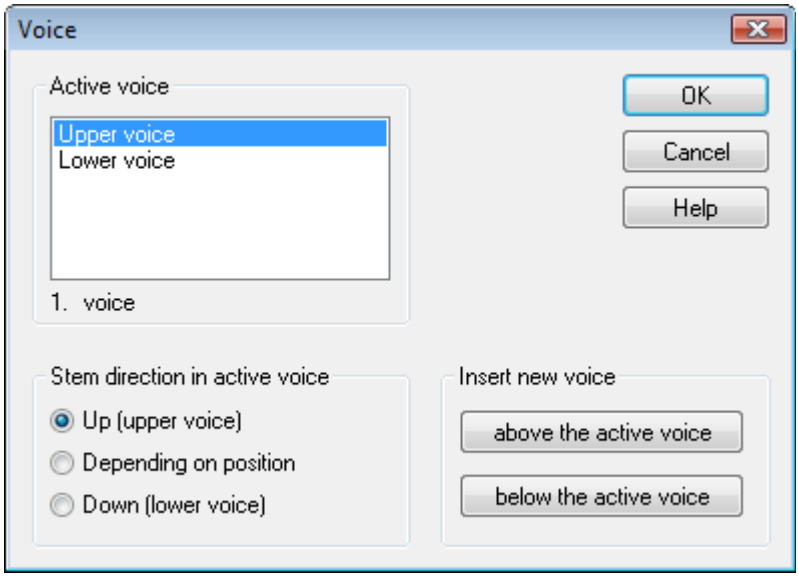
In a polyphonic staff one of the voices is always “active” and this is the voice that notes will be added to or deleted from. We recommend that you switch color information on () when editing polyphonic staves to help you distinguish between active and inactive voices.

In color view the active voice is a different color to the inactive voices. The default is black for active and gray for inactive. To change the colors select EXTRAS → OPTIONS → COLOR.

Insert voice

➔ **How to insert an additional voice into a staff**

1. Select menu: INSERT → VOICE... .The dialog shown here displays.



2. You can also reach this dialog by double-clicking an existing staff in SystemTemplate view.
3. In the list of available voices click the voice to which you want to insert the new voice either above or below.
4. Click the required button at “Insert new voice”. The new voice will be shown in the list of available voices. Repeat step 3 if required.
5. If necessary set the stem directions for existing and new voices by clicking a voice in the list and then choosing one of the three options below. Repeat for all voices.

capella automatically fills the new voice with invisible filling rests so that visible notes of the additional voice do not necessarily have to start at the beginning of the staff.

Stem direction

Stem direction. For each voice you can determine whether stem direction should be set automatically (depending on position on the staff) or whether you want all stems to point downwards or upwards.

The default value for single-part staves is “automatic”.

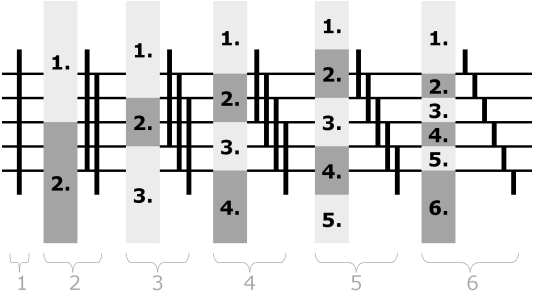
To change individual stems (for example to avoid a clash with other voices) see page 76.

Mark voices

Marking with the mouse. Hold down [alt] while dragging the mouse (with left mouse button held down) across the stave(s). Then press [alt] again in order to bring the keyboard's focus from menu bar back to score view.

Marking with the PC keyboard. Position the cursor anywhere in the first stave and mark it with EDIT → MARK → VOICE ([shift]+[Ctrl]+[D]). While holding down the [shift] key, move it to the last required stave.

Areas of marked voices. Depending on the number of voices per staff, these can be marked in more or less narrow bands. The figure below shows these bands in a five-line staff with up to six voices.
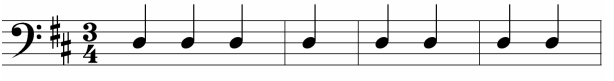


Click the respective areas to mark a specific voice.

Size and position of the cursor depend on the number of voices and position of the active voice: This figure shows all positions of the cursor as vertical black lines for 1 to 6 voices.

Support for correct notation
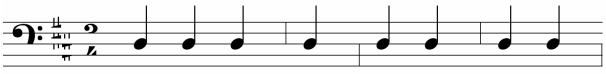
Please bear in mind that in polyphonic staves (as well as in several staves of the same system) clef, key, time signature and barlines only apply to the voice where they are entered. In order to easily detect unwanted problems *capella* displays these objects only partially in the various voices while color information ( ) is switched off. Only if the object (e. g. a clef) applies to all voices will it appear correctly.

Look at this figure as an example from a previous version of *capella* of what can go wrong:



At first sight you see the note “D” eight times and what looks like three fixed barlines. If you would play back this staff, you would hear several chords consisting of “D” and “B”.

If you open the score in *capella* 7.0, you will immediately see what went wrong:



Only the upper half of the bass clef is visible. This indicates that the staff contains two voices h and the lower one has no clef (which will be interpreted by *capella* as having a treble clef). The second voice obviously contains the note “B” eight times, in the same positions as the bass notes. It also becomes obvious that the upper time signature is 3/4 while the lower voice is 4/4 without time signature indicated.

Tips and Tricks

Irregular polyphonic systems; partially filled voices. If an additional voice does not start at the beginning of a system and does not yet contain filling rests, you can fill the beginning with rests and format them as invisible at menu (Format → Notes/Rests → General). Even better is to format them as automatic filling rests (Format → Notes/Rests → Rests). *capella 7* automatically fills newly added voices with filling rests.

> **NB:** You can complete an incompletely filled staff at the end with the script “RestPadder” (see page 178).

Moving rests. In upper and lower voices *capella* automatically moves the rests up or down. If the result is not what you want you can manually move the marked rest with menu: Format → Notes/Rests → Rests. Rests that are shared by upper and lower voice can be positioned in the center.

Colliding chords. If chords in upper and lower voices collide you can move them horizontally. Put the cursor to the left of the chord to be moved. Hold down: J and press ← or →.

You can mark individual note heads in a chord and move the associated accidentals in the same way.

Problems with accidentals when voices collide. *capella* sets accidentals automatically at the first appearance of a note in a bar. In multiple voices a problem can arise because the automatic process works independently on each voice. For example, in a two voice staff in C Major the first voice enters the notes C, F sharp, F sharp. The first F sharp gets the accidental and the second does not. If the second voice contains the notes F sharp, C, C, then the first note will get a sharp. In the score the F sharp in the first voice has become superfluous. Remove the superfluous accidental by marking the note and use menu: Format → Notes/Rests → Heads to suppress the redundant accidental.



Dotted notes. In this figure two notes occur at the same point in two different voices, upon the staff line. Because they have their stems in different directions (following correct practice for two voices on a single staff) their dots are in different positions as well. If you only wish to show one dot, mark the lower note and select menu: Format → Notes/Rests → Value. Tick the box labeled “Invisible” under “Dotting”. The same procedure may be feasible, e.g. if the note head is between the staff lines, and one of the notes has flags,

which leads to a greater dot distance, which makes both dots appear beside each other, which looks like a never intended double dotting.

> Should only one voice remain in a single staff after voice extraction, then *capella* will show the dotting again.

The SystemTemplate

If you frequently write for the same instruments the fundamental design of your scores will remain the same. Only the music content will change.

For example if you write for the piano you will always need two staves with a brace on the left and barlines through both staves. You will want a treble clef on the top staff and a bass clef on the lower staff. Once you have these settings available then all you need to add is the key and time signature, plus of course the music!

There are many more possible settings in an orchestral score. For example:

- Each instrument has a full name for the first system and an abbreviated name, which can be used on subsequent lines.
- The staves of similar instruments (brass, woodwind strings etc.) are grouped with their own brace. There is a slightly wider gap between instrument groups than between instruments.
- Each instrument is written with its own key signature.

You can specify the essential structure of the score in the SystemTemplate. In addition you have full control over what staves contained in the SystemTemplate are actually used at any particular point in the score. For example if you have a lieder score you do not need the two piano staves and single vocal staff to be present throughout the score. If you select menu: INSERT → STAFF... you will see a list containing the three available staves. You can untick the vocal line staff to remove it from a particular system and tick the box later in the score to re-insert it.

You will soon realize that the one-off effort to set up a SystemTemplate will be a major time saver when you write your score later.

Of course you can always use the ScoreWizard to quickly knock up an empty system to meet your current requirements and come back to the SystemTemplate at a later stage.

The SystemTemplate window

Use menu: VIEW SYSTEMTEMPLATE or click  to activate or deactivate the SystemTemplate window. You can also right mouse-click a blank space beside the tool tips and choose SYSTEMTEMPLATE in the appearing context menu. In *capella 7*, you can look at SystemTemplate view and score view at the same time. It is a good idea to dock both views to the right and the left margin of the score window. You can then change from one view to

the other with one mouse click. The SystemTemplate window shows the structure of the entire system with all staves that might or might not appear in the score.

You can mark a staff by simply clicking on it. To mark several staves click the first one and then drag the mouse across the others.

Extending the SystemTemplate. With menu: SystemTemplate → Insert Staff Above ( ) or SystemTemplate → Insert Staff Below ( ) you can add new staves to the template above or below a marked staff.

With menu: SystemTemplate → Delete Staff ( ) you can delete marked staves provided that they are not currently in use in the score. You can see if they are in use or not by checking for a box to the right of the instrument description. If the staff is used in your score it will state the number of lines it is used in. For example “in 2 Systems” etc.

To exit the SystemTemplate window and return to the score you simply left-mouse click the score view.

Formatting staves in the SystemTemplate

You can **modify the properties of marked staves** using the first six options on the SystemTemplate menu (alternatively you can click their corresponding icons on the SystemTemplate toolbar as indicated below):

Names. ( ) This dialog box contains the three descriptions that are associated with a staff. The *Description* is the name used by *capella* to identify the staff. It is not used in the score. The *Full Name* is used on the first system. It can be used on the other lines or you can specify that the abbreviated name should be used. See Format System to specify how these names are to be used. You can switch both names off. You might want to do this in an extracted part.

The *Between both staves* fields are only active if you have marked two consecutive staves. A common use for this is to place the word “Piano” between the treble and bass staves.

You can enter multiline instrument names. By clicking Ctrl+↵ you activate carriage return in the Freeform text. If instrument names are written in multiple lines or contain slashes „/“, during voice extraction only one part of the entire instrument name will be displayed as *capella* interprets this character as a separator.

Spacing. ( ) For each staff individually enter the space above and below. Therefore the distance between two adjacent staves within a system is the sum of the space below the upper staff plus the space above the lower staff. The following information is important to ascertain correct spacing when you are not utilizing all staves of the system in your current score or when you extract parts to a new system.

- With a vocal part you should add extra space below for the lyrics. Do not enter “Space above” on the staff below, which can cause the display of entered lyrics not to be refreshed properly.

- The Additional group spacing field is a convenient way of adding additional space between groups of instruments. As with all the other special spacing options, it is much less likely to cause future layout problems than adding extra space after a particular staff, which may come and go throughout the score.
- To increase the space between systems you should set ”Inter system space”. If you add space above the first and below the last staff, you will get incorrect spacing between systems if one or both of those staves are not used in the score.

All measures which are independent of marked staves can be defined separately for the entire score and for voice extraction. To do this tick the box “*different*”.

Staff lines. ()This dialog is essentially self-explanatory. To add staff lines first select the type (solid or dashed) and then click the green ledger lines.

Standard clef. In this dialog box you set the default clef that will appear when you insert the staff. You can later change the clef at any point in the score.

Sound. () In this dialog box you can assign any of the 128 general MIDI sounds to the staff. If you use *capella-tune* for playback, you can define more features such as the stereo panorama value or choose a sound sample from a VST library such as the *capella Vienna orchestra*.

These settings will be assigned to all voices in the staff. Via the context menu of the list “for voices” or by double-clicking this list you can create a new set of parameters for the second and all following voices. This set of parameters will always be applied when there is more than one voice in a staff. This way you can create up to six sets for up to six voices of a *capella* staff.

Transposition. On this page you can specify an interval by which the instrument is to be transposed up or down during playback. Octave clefs transpose automatically. If you change these properties, the button “transpose notation accordingly” is activated. This way you can automatically display the transposed staff in the whole score so that in the end you will hear the same sound as before transposition.

Data base. You can use the ScoreWizard's instrument data to assign properties to a SystemTemplate staff. If the score has been created with the page 49 ScoreWizard, you will find a record in the “database key” box. Clicking “search” opens the dialog box “instrument properties as per database” with the preselected instrument. You can also further open the tree view “available voices” and choose the desired instrument. After having clicked “OK”, the areas “description”, “abbreviation”, “clef”, “transposition (halftone steps)” and “tone” are filled and the corresponding buttons are active.

Brackets, braces and barlines

System braces, brackets and barlines are set in VIEW → SYSTEMTEMPLATE followed by SYSTEMTEMPLATE → BRACKETS, BARLINES... or ().

Systemic barlines. This dialog allows you to select one of three options for barlines: *Normal*, *through staves* or *between staves only* .

NB: If staves are connected with mensural barlines, note values can go beyond barlines without the barlines being displayed in red (not plausible) (page 71).
If the score contains only some of the staves from the underlying SystemTemplate, barlines will be broken between two staves if there is a break between the two corresponding staves from the SystemTemplate *anywhere* in the score.

Fixed barlines can be set independently of the SystemTemplate.

NB: Square brackets are used to connect two or more staves to form a system or to group certain instruments within a system. Braces are used to connect the two staves to a grand staff for instruments such as piano, harp, marimba etc. or for a subgroup within a square bracket. Brackets and braces should not intersect, but braces may be positioned inside square brackets.
If a score contains only some of the staves from the underlying SystemTemplate, *capella* will automatically adjust all brackets and braces. If the score consists of only one staff, braces will be suppressed but a square bracket will be displayed, if it is not the only staff of the system.

Re-grouping the SystemTemplate

The layout of staves in the SystemTemplate can be changed at any time. These changes will reflect in all existing and new systems of the current and future score(s) that are based on the template.

➔ **How to move one or more staves in the SystemTemplate**

1. Mark the required staff or staves in the SystemTemplate.
2. Select menu: SystemTemplate → Move Staff Upwards or SystemTemplate → Move Staff Downwards. Alternatively click the corresponding icons ⬆ or ⬇ on the SystemTemplate toolbar.

Example: Your score displays the string instruments above the wind instruments. You want to change this arrangement to comply with standard notation conventions. Mark all string instruments in the SystemTemplate and click the ⬇ icon as many times as is necessary to position the string instruments below the wind instruments. Now leave the SystemTemplate ( ) and inspect your score. All systems have been rearranged to reflect the changes in the template.

NB: Whenever you move entire groups of instruments *capella* adjusts the system braces accordingly. In some cases you might have to manually adjust braces after the move.

Sound mapping

Select menu: SystemTemplate → Sound Mapping to adjust input and playback of percussion instruments for the marked staff/staves, (see page 119).

Quick access: Insert

Using SystemTemplate → Insert you can insert systemTemplate staves into your score easily. This function will call the dialog box that appears also if you select Insert → Staff (see page 96).

With a double click on a systemTemplate staff, you can trigger insertion of a single systemTemplate staff immediately. If the systemTemplate staff is already contained in the cursor system, the dialog box from INSERT → VOICE will be called, which allows you to insert another voice into the corresponding staff (see page 97).

Quick access: Voice extraction

Using SYSTEMTEMPLATE → VOICE EXTRACTION you can choose the marked systemTemplate staves for voice extraction in a very easy way. Only if you want to choose some voice inside a staff differently from another in the same staff, or if the staves to be extracted are not adjacent, you need the complete dialog accessible with Extras → LIVE VOICE EXTRACTION (see page 118).

Score properties

Page setup

Page orientation (portrait or landscape), page margins and page format are set at menu: FILE → PAGE LAYOUT. It is advisable to set these parameters before you start editing a score because these settings have a bearing on the appearance of the score, in particular on the justification.

In *capella* 7, these settings are recorded in the score and are not dependent on the printer any more. The score's appearance remains unchanged if you set a different page size in your printer driver. Merely the page orientation (portrait or landscape) is automatically synchronized between score and printer driver.

> For a new score and for a score created with a previous *capella* version the printer's default page format will be used.

If you do not want to print to your default printer you should make the relevant adjustments before you start to edit a score so that *capella* can advise you of potential conflicts between your page setup and the printer's margins.

Page division

capella automatically divides your score across several pages in accordance with your selected margin settings.

Vertical justification. Select menu: FORMAT → SCORE... → GENERAL to set vertical page justification. This feature will insert additional space between systems in order to evenly distribute the systems across a page. If the last page contains fewer systems than the previous pages you should opt for “All except last page” to exclude the last page from vertical justification.

Horizontal justification. Click the justify icon () either before you start editing the score or mark all systems (Ctrl+A)and then apply the justify icon.

> **NB:** If only one system fits to a page no vertical justification will be applied.

Enforced page break . You can enforce a page break after any system. Position the cursor in the system and select menu: FORMAT → SYSTEMS... → INDENT and tick the option "Next system on new page".

Additional score settings

Select menu: FORMAT → SCORE... → GENERAL to make the following adjustments:

Breves. You can select the appearance of breves to follow the conventions of modern notation or mensural notation.

Display of key change. *capella* will normally insert a key change without preceding naturals. The only exception is a change from C-Major to a-minor, where naturals will be displayed. If you prefer to use naturals also for other cases where a key change causes the number of accidentals to be reduced, you can tick "Key change with redundant naturals".

Separating symbols between systems. Systems are often separated by two slanted lines to improve readability of the score. You can instruct *capella* to automatically insert this symbol by selecting "Show two dividing lines between systems" in the GENERAL dialog.

> **NB:** In line with common notation conventions, the separating symbol is only placed between systems with identical left margin and identical settings for instrument descriptions: Full description, abbreviation or none.

Special functions

Playback

Configuring your sound card

Correctly installed sound card drivers are a prerequisite for correct sounds when you play your *capella* scores. You must also have an acceptable driver in the appropriate *capella* settings dialog box.

capella does not talk directly to your sound card, it communicates via Windows. This means that it can only access the sound card features that Windows can access. The main restriction is a limit of 16 channels, one of which is reserved for percussion. Channel 10 is the default for this.

If you play scores with more than 15 instruments some instrument voices will therefore not play back correctly.

NB: The limitation of 15 channels does not apply if you use *capella Vienna orchestra* for playback.

➔ **How to prepare your first playback session**

1. Select menu: EXTRAS → OPTIONS → SOUND → OUTPUT.
2. Select the required soundcard driver from the drop-down list. If you have one with "wav" in the name try this, as the sound quality could be better. The MIDI-Mapper driver is usually a reliable fall back choice.
3. The volume slider control should be set at about 80 for most PCs. This sets the overall playback volume. Individual volume settings per instrument are set in the SystemTemplate (see page 101, Sound).
4. Click on each of the 16 loudspeaker icons to check that your sound card is set up to play back on all the channels. To silence a channel click on the window above the speaker to remove the blue eighth notes picture. Replace it with the blank, or with the drumsticks (by repeatedly clicking the field) if you want this to be a percussion channel.

   NB: To avoid any misunderstanding: The purpose of these fields is to tell *capella* how the individual channels are working, not to rearrange the channels. For most sound cards the default settings will be correct.

Determine tempo

The starting playback tempo for each system can be set separately. You can attach a tempo change to each note or rest if the tempo should change within a system (accelerando/ritardando).

➔ **How to make tempo variations visible in your score**

1. Click the color information icon on the view toolbar  if it is not switched on (see page 48).
2. Select menu: EXTRAS → TEMPO → SHOW TEMPO BARS WHEN COLOR INFORMATION IS ON.

The individual tempo settings will now be indicated with little colored bars wherever they occur in the score. Green bars indicate the primary playback, while blue and red bars indicate first and second repeats respectively.

> **NB:** Although you can use *capella-tune* (see page 110) to set a different tempo for all repeats, *capella* will only show three to maintain clarity.

➔ **How to set the tempo from a specific note or rest onwards**

1. Position the cursor to the left of the note or rest from where the tempo should change. This note/rest may be part of any of the voices on the staff. You should however stick to the same voice within a system for all your tempo changes.
2. Select menu: EXTRAS → TEMPO → SET and enter the tempo value into the dialog. The selected tempo will be set at this point in the score and for the rest of the score the tempo will be adjusted pro rata.
   Example: You increase the tempo at one position from 100 to 120 i. e. by 20%. If the next system contains a previously entered tempo change to 110 it will automatically increase by 20% to 132.

   > **NB:** Click the "Options >>" button in the dialog to see a list of repeats. The list could show additional tempos that will be considered during playback. These tempos are better set with the tempo control in *capella-tune* during playback (see page 110).

➔ **How to set a uniform tempo for one or more system(s)**

1. Position the cursor in the required system or mark all systems for which you want to set a common tempo.

   > **NB:** If the same tempo should be applied to an entire score select menu: EDIT → MARK ALL before you apply the tempo change. Otherwise select just the systems of one movement.

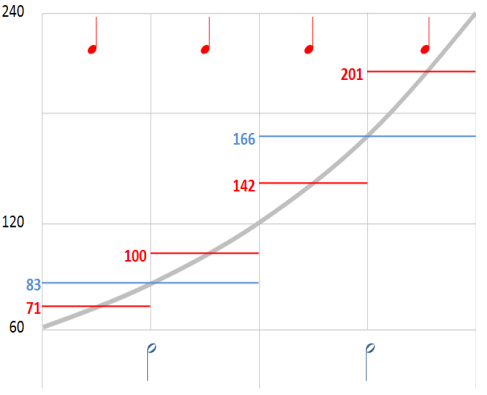
2. Select menu: FORMAT → SYSTEMS... → GENERAL and enter the required value into the dialog.

Uniform tempo changes (interpolation)

To correctly play back tempo variations such as ritardando or accelerando it would be tedious to set individual tempo marks for each note/rest. You can therefore evenly distribute ("interpolate") the tempo change across a marked section of notes/rests. Different methods are available:

Please refer to this graphic to understand the different methods:

Across four quarter notes the tempo should be accelerated from 60 to 240. The curved gray graph indicates the course of the tempo based on the recommended setting of "continuous exponential". The four red lines indicate the effective tempos for each of the quarter notes, while the two blue lines indicate the effective tempos for two half notes.



"*Continuous*" means that the tempo also continuously accelerates during the playback time of an individual note. *capella* will then automatically calculate the overall tempo of all marked notes.

"*Exponential*" means that the tempo grows like your money in the bank. If the tempo changes during the first half note from 60 to 120, then it must also double up during the second half note (from 120 to 240). For "*linear*" interpolation the tempo would increase by the same amounts, i. e. the value half way between 60 and 240 is 150.

Besides "continuous exponential" you can select "discrete linear" or "continuous linear". The differences between these three methods only become apparent during extreme tempo variations. The method "discrete linear" has the disadvantage of being dependent on the value distribution of the notes.

➔ **How to set accelerando or ritardando**

1. Set the tempo (see above) for the first and last note of the ritardando or accelerando section.
2. Mark the section from the first to including the last note of the section (see page 73).
3. Select menu: EXTRAS → TEMPO → INTERPOLATE.

Play back notes

You can play back any number of voices/instruments from the SystemTemplate.

To play back percussion notation see page 119.

➔ **How to play back notes**

1. Make sure that the correct tempo has been set for all systems and that you have selected the correct instruments and volumes in the underlying SystemTemplate.
2. Position the cursor where you want to start playing back.
3. The next steps depend on which voices you want to play back:

- If you only want to play back the voice that contains the cursor select menu: Extras → Playback → Voice under Cursor or click .
- If you want to play back all voices select menu: Extras → Playback → All Marked Voices or click .
- If you want to play back only a selection of voices/instruments select menu: Extras → Playback → Playback Filter... or click  and mark the required voices. Then select menu: Extras → Playback → Playback All Marked Voices or click .

1. End playback by pressing Esc.

NB: Playback automatically continues with the next system unless you stop it. If the next system contains the same voice from the underlying SystemTemplate that voice will be played back, otherwise the numerically corresponding staff will be played back.

➔ **How to play back individual notes step by step.**

[1200,studio|The step by step playback feature is not available in @.]

1. See to it that the correct settings have been made at Extras → Options → Sound → Audible Note Entry.
2. Position the cursor to the left of the first note/chord and press P or 0 (not zero!). The chord will be played back. As you lift your finger off the key the cursor will jump to the next note/rest and you can repeat playback in the same manner. While you are holding down P or 0 you can correct (also audible) the chord using ↑ or ↓. This is where it depends on whether you touched P or 0: P for enharmonic trans**p**osition or 0 for diat**o**nic transposition (see page 111).

➔ **How to play back a chord's individual notes (broken chord)**

1. See to it that the correct settings have been made at Extras → Options → Sound → Audible Note Entry.
2. Position the cursor to the left of a note/chord and select menu: Extras → Playback → Broken Chord or click . All notes that start or are still active at the current cursor position are now played back successively from lowest to highest. The cursor will then jump to the next chord.

Playback options

Select menu: Extras → Options → Sound → Playback to configure playback options.

We strongly recommend that you select “Use *capella-tune*”. This advanced and powerful module, which is based on Hartmut Lemmel's research and development, allows you to configure very detailed and intricate musical parameters for your playback. For a detailed description please see page 122.

No sound during playback?

During playback the volume is dependent on several different settings. If you hear nothing or the volume is too low please verify the following:

- the volume setting of your speakers (e. g. volume control on speaker)
- Windows system settings for MIDI playback (WinXP: Volume control → SW-Synthesizer; Vista, 7, 8: Volume mixer)

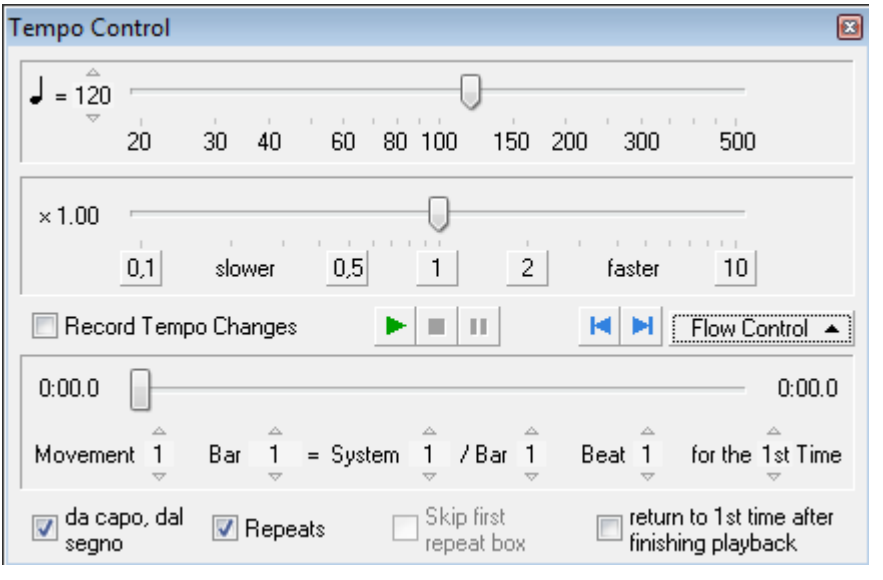
NB: Windows distinguishes between sound files with general sound recordings (*.wav) and music files with a note-related format (*.mid). It could be possible that you can hear sound files like those that are played back when Windows starts up and yet you cannot hear music files because your soundcard is not configured properly. If you can hear a *.mid file from the Windows\Media folder by double clicking the file then your soundcard is set up correctly.
NB: Under certain circumstances Windows resets the „SW-Synthesizer“ controller to zero. This happens every time you play a *.mid file with Windows Media Player 11. If you cannot hear any playback from *capella* please check this setting first! This problem does not occur under Windows Vista.

- basic volume settings at EXTRAS → OPTIONS → SOUND → OUTPUT
- individual instrument settings in SystemTemplate (VIEW → SYSTEMTEMPLATE or and then SYSTEMTEMPLATE → SOUND or)
- settings in *capella-tune* (see page 122) on the “Instruments” and “Dynamics & Rhythm” tabs.

capella-tune tempo control

The tempo control window

The tempo control window allows you to modify the tempo on the fly – even during playback.



The elements of the tempo control window:

1. Use the upper slider to adjust the tempo (also during playback) by absolute values i. e. quarter notes per minute.
2. Use this slider to adjust the tempo relative to the existing tempo. This is particularly useful when you want to correct a continuously changing tempo during playback.
3. Set this tick mark if you want *capella* to import the settings from slider 1 and 2 after playback has finished.
4. This button opens/closes the lower part of the dialog.
5. Use this slider or any of the six control elements (Movement, Bar, System, System-Bar, Beat, Repeat) to access any specific position in the score. If the score contains repeats they will be run through successively. The indicator on the right shows the number of the current repeat.

   NB: For *capella-tune* a new movement starts whenever the bar numbering is reset to 1.
6. These four tick marks are self explanatory.

➔ **How to adjust tempo during playback**

1. Select menu: EXTRAS → TEMPO → SHOW TEMPO CONTROL or click  on the sound toolbar.
2. If required set the tick mark for “Record Tempo Changes”.
3. Start playback (see page 108).
4. Adjust the tempo with one of the two sliders: If your score has a uniform tempo the first slider is recommended (absolute). If your score already contains several tempo changes the slider number 2 is recommended (relative).
5. End playback. With the relevant settings (see page 106) the new tempo is now displayed in the form of colored tempo bars.

NB: Tempo can also be adjusted without playback. Open the tempo control window and click on “Flow Control” to display the bottom part of the window. There you can access any specific position in the score and then set the required tempo changes.

Transposition

capella distinguishes between the following types of transposition:

Transposition with key change *(Key transposition*). All marked notes are shifted by the same interval and the key is adjusted accordingly. If you only transpose part of a staff the previous key will be inserted at the end of the transposed section. There are three options:

(a) s*trict as to interval*. The notes are shifted up or down by the specified interval. If the interval would produce a key with more than seven accidentals *capella* will replace the target key with the enharmonic equivalent with fewer accidentals. For example if you ask *capella* to transpose up a perfect fifth from C# Major this would in theory produce the key of G# Major with eight sharps. In this situation *capella* will substitute the key of A flat Major, the enharmonic equivalent of G#.

(b) *prefer sharps*. The following example shows the effect of Prefer Sharps: C# and D flat would both become G# Major when transposed up by a perfect fifth.

(c) *prefer flats*. The following example shows the effect of Prefer flats: C sharp and D flat would both become A flat Major when transposed up by a perfect fifth.

NB: If the area marked for transposition includes staves without notes there will be no change of key signature on these staves.

Transposition without key change (*chromatic shift*). The key signature remains unchanged and the notes are shifted by the specified interval.

There are two choices for transposition without key change:

(a) s*trict as to interval*. As an example, transposing up a perfect fifth will always give G# from C# and A flat from D flat. In extreme cases where a triple sharp/flat would result, the target key will be enharmonically simplified.

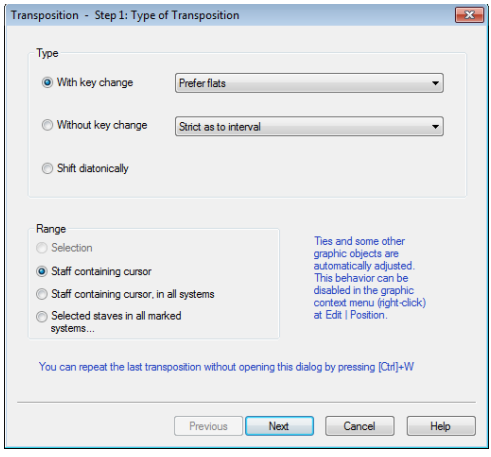
(b) *enharmonic simplified*. Only chromatic intervals are considered. Notes are moved in half steps. For example there are 7 half steps (steps) in an interval of a fifth. If C# and D flat are transposed by two chromatic steps the result will be the same. Whether this generates a D# depends on the settings in the EXTRAS → OPTIONS → SOUND → INPUT → PREFER SHARPS/FLATS menu.

Diatonic shift. Notes are moved a specified number of diatonic interval steps, i. e. degrees of the scale. The original key is retained. The interval structure and melody will be changed. For example, in C Major two steps would go from C to E (a Major third) or D to F (a minor third).

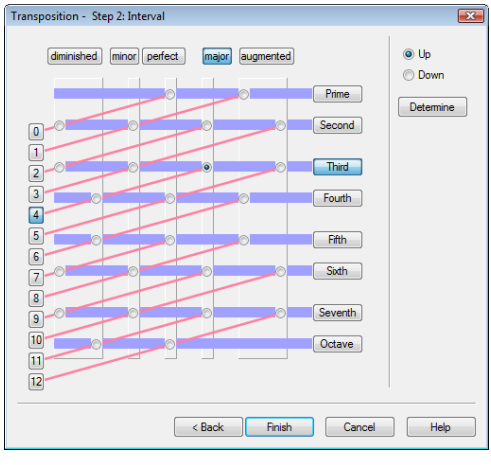
Example: To change a score from C Major to C minor shift down by two diatonic steps. The result is A minor. Now transpose up a minor third. The piece is now in C minor.

➔ How to implement a transposition

1. Mark the range (notes, staves or systems, see page 73). The transposition dialog then allows you to restrict this range to a group of instruments (e. g. all except trumpets).
2. Select menu: FORMAT → TRANSPOSITION. A two stage dialog will open. The information entered in this dialog will dictate the contents of the second window.



3. Select one of the three types of transposition. With the first two types you can choose an appropriate variant from the adjacent drop down lists.
4. Select the range you want to transpose. If you choose the fourth option a dialog will open to select the required voices.



5. In the dialog on the right you can select the number of steps for diatonic movement or the interval for chromatic movement.
6. With chromatic transposition selected only fields 0 to 12 are available. The diagonal lines indicate for each chromatic interval the relevant enharmonic perfect interval. For standard interval transposition all buttons are available. E. g. to select a Major third you can either click major and Third or click on the spot at the confluence of the “major” columns and the “Third” row.
7. If you click one of the chromatic intervals (0-12), *capella* will select the matching standard interval. You can also ask for assistance with determining the correct interval by clicking the “Determine” button in the dialog.

   When you are done click “Finish”.

NB: Intervals that do not exist cannot be selected. There is, for example, no such interval as a "Major fifth". There may be occasions, for example if a perfect fifth is selected and you would prefer a Major third, when it will not be possible to click on major. In fact *capella* will move to augmented. Instead, click on third and major will be automatic.

Slurs and automatic triplet brackets. These are inverted automatically if the transposed notes require it, provided that this has not expressly been excluded for some of these objects.

Transposable symbols. See page 156.

Potential problems with transposition

Extreme accidentals. In extreme cases (rare in reality) *capella* will modify the required interval to the enharmonic equivalent to avoid unacceptable alterations.

Extreme key signatures. *capella* limits the number of flats or sharps in the key to seven. If transposition could lead to key signatures containing more accidentals than seven *capella* will select an enharmonically equivalent key (one that sounds the same but is spelled differently) with fewer accidentals. For example transposing C# Major by a perfect fifth would give G# Major (which has eight sharps). *capella* will change this to A flat Major (which has four flats).

Transposition using shortcut keys

➔ **How to repeat the last transposition**

1. Mark the range (notes, staves or systems, see page 73) that you want to transpose. If no area is marked *capella* will transpose the voice containing the cursor as far as the end of the staff.
2. Press Ctrl+W. The marked range or current voice will be transposed (or diatonically shifted) by the same interval that you last set when you used the transposition dialog.

➔ **How to transpose an individual note**

1. Place the cursor to the left of the note
2. Press and **hold down** O (letter, not number!) for diatonic shift or P for chromatic shift.
3. Press any of the following keys ↑, Page Up, ↓, Page Down as many times as are required to achieve your result.

Enharmonic change

On occasion it will be necessary to change the way *capella* shows the pitch of a note. There are two ways of doing this: simple enharmonic change (limited to single accidentals) and extended enharmonic change (double accidentals allowed).

Simple enharmonic change

Simple enharmonic change is sufficient for most cases. It is always unambiguous. It can therefore be applied to any marked range.

➔ **How to change notes enharmonically**

1. Mark the required range (notes, staves or systems, see page 73) that you want to change.
2. Select menu: FORMAT → ENHARMONIC CHANGE or click .

This method can be used in all circumstances **except** where you have entered a double sharp or flat with * or _. If the double sharp or flat has been entered by *capella* because of the key then the method can be used. Simple enharmonic change can be applied in all key signatures to the four notes adjacent to the two half steps and to the five notes foreign to the scale.

Example: In G Major if you enharmonically change the note G you will get F double sharp (here single sharpening), B becomes C flat and A and G double sharp remain unchanged.

Extended enharmonic change

With an extended enharmonic change double sharps and flats are permitted. There are therefore up to three possibilities for each note. Example: D# can be E flat or F double flat. Thus for most notes there can be two alternative descriptions and therefore it does not make sense to mark and change blocks of notes. For this reason *capella* only allows extended enharmonic change to be applied to individual note heads. This avoids errors that would certainly occur if blocks of notes were changed enharmonically.

➔ **How to change a note head enharmonically**

1. Mark the required note head (see page 73).
2. Press Alt+← for double flats or Alt+→ for double sharps.

NB: Note: *capella* does not allow two identical notes in the same chord, but this could happen if you enharmonically change one note head to match another note in the same chord. If this happened you might not be aware of it because it would be hidden by the original note.

Enharmonically simplify parts of the score

If you want to enharmonically simplify part of (or an entire) score you can use the transposition feature of *capella*: In step 1 of the transposition dialog select “Transposition without key change” and from the drop-down list to the right select “Chromatic interval”. In step 2 select interval 0 (zero). The notes are now set in the same way as if you had played them in from the MousePiano or MIDI keyboard with the “Prefer sharps/flats” option set in EXTRAS → OPTIONS → SOUND → INPUT.

Enharmonically change key signatures

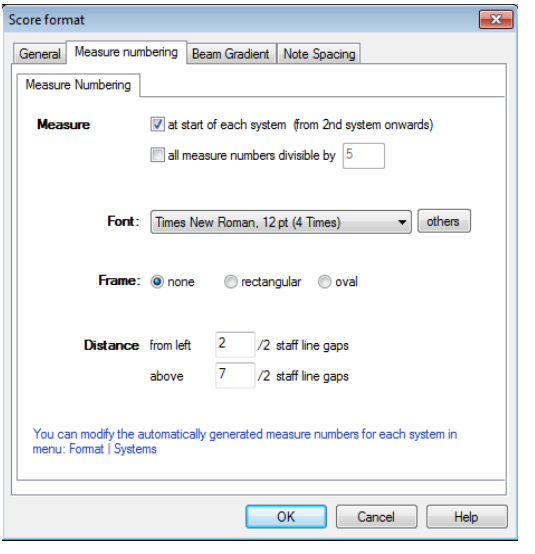
The enharmonic changes described above relate to the notes and not the key. You can also transpose the key through the Transposition dialog. There must be at least one note on the staff. As an example we will go from C# Major to D flat Major. Position the cursor to the left of the first note (or immediately to the right of the key to be changed). In step 1 of the Transposition dialog select “With key change” and from the drop-down list on the right select “Prefer sharps”. In step 2 select interval 0 (zero).

Bar numbering

capella can automatically place bar numbers at the beginning of each system (starting from the second system). Alternatively, or in addition, *capella* can place bar numbers at regular intervals (e. g. every 5 bars). With $(|) you can also anchor plain text to a note or rest at any place in the score (also see page 84).

➔ **How to switch on/off automatic bar numbering**

1. Select menu: EXTRAS → BAR NUMBERING or click 12. The “Score format” dialog opens with the bar numbering tab displayed.
2. Set the first tick mark if you want bar numbers to appear at the beginning of each system.
3. Set the second tick mark if you want bar numbers to appear at regular intervals throughout the score. Set the interval by entering the appropriate number.



4. You can format the bar numbers with the following entries in the dialog if at least one of the two tick marks has been set: You can change the font – and its color – by clicking the “others” button and you can apply frames and change the position.
5. As soon as you select one of the two options for frame two more tabs will appear to set the fill color and transparency and the border color and weight.
6. See page 20 for an explanation of staff line gaps.

NB: If you modify your score after switching automatic bar numbering on all bar numbers will be adjusted in real-time to reflect any changes.

Adjusting bar numbering

In some cases the automatic bar numbering will not show the numbering you want. For example you may wish to discard one of the two bars of a repeat box.

➔ **How to adjust bar numbering**

1. Position the cursor in the system whose numbering you want to adjust.
2. Select menu: FORMAT → SYSTEMS... → BAR NUMBERING and enter the correction into the dialog. The number that you enter will be added to the automatically calculated number of the current and all subsequent systems.

Correction of adjustments. If you have lost track of where you made changes you can mark a number of systems (see page 74) and go to the bar numbering dialog at menu: FORMAT → SYSTEMS... → BAR NUMBERING. If a number is displayed (usually a zero) it applies to all marked systems; a blank number field indicates that you have made varying adjustments within the marked systems.

In order to return the whole score to standard bar numbers mark the entire score (Ctrl+A) and in the box “Raise or lower by this number” enter a zero.

Independent bar numbering

If you have a score that consists of several separate pieces you can reset the bar numbering to 1 for each piece. With the cursor in the correct system select menu: FORMAT → SYSTEMS... → BAR NUMBERING and set the tick mark for “Reset to 1 at current system”.

Bar numbering is either on or off for the entire score, however you can exclude systems from the count by putting the cursor in each system in turn and ticking the option “Reset to 1 at current system”. As bar numbering does not show on any first system you can repeat this operation for every system to be excluded from the bar count.

To reset the entire score to default bar numbering see above at “Correction of adjustments”.

Bar numbering for scores split into several files

If you have very large scores it is recommended that you split these into several files to reduce the risk of disaster in case of hardware malfunction or power cuts. For the first system of a follow-up file enter the number of bars of the preceding files into the dialog at menu: FORMAT → SYSTEMS... → BAR NUMBERING.

Voice extraction

You could create a voice extraction by deleting all unwanted staves and then using menu: File → Save As... to save the reduced score as a new file. However, *capella* provides a flexible voice extraction system which allows for the extraction of any combination of parts, and also for individual voices.

➔ **How to extract a part**

1. Select menu: Extras → Live Voice Extraction...
2. The dialog box shows you all the staves in a "tree" structure. If you want to select individual voices on a staff click the + symbol. To see all individual voices click the "All voices" button at the bottom right.
3. Tick the required staves and/or voices to be included in your extraction.

NB: If you tick a staff all voices on that staff will be automatically included (or excluded if de-selected) in your selection. If you tick only one of several voices on a staff this will be indicated by a gray-lined checkmark for the staff.

If you accept the choice with OK, only the selected staves and voices will be shown in score view. And much more is new with live voice extraction:

- In layout view, the de-selected staves are marked with crosshatches to show that they are inactive. Staves in which only a part of the voices is to be de-selected are marked with lighter crosshatches.
- The new button for live voice extraction is active on the Direct Formatting toolbar and in menu Format → Display Single Voice. This button and this menu item allow you to switch between score view and single voice view. In score view with layout view, the crosshatches are replaced by diagonal hatches.
- If you want to see a staff in voice extraction which does not exist in the system to be displayed, this staff will be automatically inserted and filled with (visible) rests. If this staff is then edited and changed in voice extraction, it will be added to the entire score. The rests which have been automatically created are shown in the same color as triplets. Via their editing dialog they can be transformed into regular rests.
- If a multi-voice staff in the entire score turns into a single voice due to voice extraction, the stem direction of its notes will be automatically set "depending on position".
- In voice extraction of a single staff, instrument names (complete or abbreviated) will not be shown. In voice extraction of more than one staff, instrument names are shown. With large range instruments such as the piano which are usually noted in two staves these two staves are counted as only one.

It is possible to configure graphic objects in a way that they are shown with different properties in the entire score and in single voice extraction (for example in a different

place, with different font size, suppressed in one of the views). For more information see page 149.

You can start playback via captune for each displayed combination of single voices. Alternatively, the vocal range can be determined via File → Info → Vocal range. Via Extras → Save Voice Extraction you can save the voice extraction as separate file.

Mutual header. If you anchor a header to a note or rest, it will be lost during voice extraction when the voice is de-selected (see page 87). To prevent this you can anchor the header to the page (and have it displayed on page 1 only). Also, you can use the property "validity" of the graphic objects (see page 152) and select “Entire System”. This way the object will also be shown in voice extraction of those voices even if it had not been anchored to the voices before.

Instrument names. After having done a single voice extraction you usually don't want to have the instrument name displayed at the beginning of each stave. However, you can use plain text to display the instrument name once. The command is $(_) which you simply write into your plain text field (for more details see page 84). Proceeding like this and ticking “instrument name is to be seen in voice extraction only” on the plain text tab you can add the instrument name to each extracted stave.

Score wrap around

Use menu: Extras → Score wrap around... to instruct *capella* to redistribute the systems of the current score. Three options are available:

- Distribution into systems with optimal filling.
- Distribution into systems with consistent (selectable) number of bars.
- Combine whole bar rests.

NB: Creating an attractive, readable score is a creative process. Therefore either of these two automatic methods should be regarded as an initial step only. For example *capella* is not able to judge where you would like to see page breaks.

You can reformat the score from the cursor position onwards, as well as format the entire score. This allows you to manually improve a section and then reformat from that point onwards.

NB: If your score contains key signature changes you should restrict the redistribution to regions with the same key signature.

Percussion notation

This section describes the general options for handling percussion in *capella*.

Staves. A staff can be defined as a percussion staff in the SystemTemplate. Percussion staves have different playback properties to normal staves. Note pitch is used to select an instrument.

> **NB:** The ScoreWizard offers a selection of percussion instruments. It automatically assigns a percussion clef to the "Percussion" instrument. All other percussion instruments like drums, cymbals, timpani, etc. are assigned a traditional staff with treble or bass clef. These assignments can be changed anytime, e. g. in the SystemTemplate.

Percussion clef see page 66.

Note heads. Special note heads can be selected at menu: FORMAT → NOTES/RESTS → HEADS for any marked notes or individually marked heads within a chord.

Playback. With a percussion staff the note pitch is used to select an unpitched percussion instrument. This is specified in two steps:

1. Access the SystemTemplate ( ), mark the required staff (staves) and select SYSTEMTEMPLATE → SOUND or click . In this dialog window tick Percussion. When you exit the SystemTemplate ( ) and play back the staff ( ) you will hear a different percussion instrument for each pitch.
2. Return to the SystemTemplate and select menu: SYSTEMTEMPLATE → SOUND MAPS.. or click .
3. Click on "Edit output sound map..." The dialog box allows you to specify which instrument should be assigned to which pitch. If the standard sound map does not suit your requirements you can change it in this window.

Example: In an empty single-line staff enter the notes for the triangle part. Enter the notes as B so that they are positioned on the line. "B" corresponds to MIDI pitch 71. Go to step one above. Mark this staff as a percussion staff and click on the Playback icon. You will hear a "Short Whistle" as this is the sound associated with the number 71 in the General MIDI sound map. To turn this into a triangle sound go to step 2 above. Click on the MIDI number 71 in the left half of the window and then in the drop down list headed "Quick selection" select 81 Open Triangle. You will see the triangle under the heading "Replace with".

Playing in from MIDI keyboard. You can assign any unpitched percussion instrument to any key on your MIDI keyboard using the methods described above.

Changing the style of a score

You can adjust the appearance of your scores in many ways to meet your personal preferences. You can select individual fonts for notation symbols and pass the values of these symbols on to *capella* and you can freely define the shape of the square system brackets. A combination of these personalized settings can be saved as a style. *capella* already includes a number of pre-defined styles for you to choose from.

➔ **How to select a style for your score**

1. Select menu: EXTRAS → OPTIONS → GENERAL
2. Open the drop-down list “Music symbols style” and make your choice.

Linking a style to a *capella* score

If you have written a *capella* score that must be displayed according to a specific style, proceed as follows:

1. Access menu: FILE → INFO... → COMMENTS
2. Anywhere in the “Comments” field of this dialog enter the following line:`<style>My Style</style>` replacing “My Style” with the actual name of your saved style. When *capella* opens a file that has such a line placed in its comment field it will try to activate the relevant style.
3. If you want to pass the score on to someone else, you must also include the relevant style section from your `capella.dat` file (see page 187) together with instructions on how to insert this section into the recipient's `capella.dat` file. If your style incorporates a special font don't forget to include the relevant font file as well - without contravening any copyright laws!

NB: If you are working on two scores in separate score windows and they have different style sheets then *capella* does not redraw the linked style each time you view the other score window. It uses the style sheet from the last score loaded. This is to save time and does not overwrite the properly associated style sheet. You need to actively select the style to see its effect in the score window.

capella-tune

capella-tune is used by *capella* and other programs in the *capella* suite to play back *capella* scores and to convert them into MIDI files. This process takes into account numerous settings from within the *capella* file, e. g. accidentals, dynamics, piano pedal marks, trills and ornaments, repeats, swinging rhythms, historic tunings and many more. These features are configured on the various tabs of the *capella-tune* dialog.

Furthermore *capella-tune* provides an interface to VST plug-ins. This interface provides you with access to the wide world of sample libraries like the *capella Vienna orchestra.* Sample libraries contain the recorded sounds of genuine instruments. As a result the quality of playback via such a sample library is far better. Sample libraries also include special sounds for the different performance marks, e. g. legato/staccato, sforzato, pizzicato/arco, tremolo, with/without damper, drum roll etc. *capella-tune* can evaluate the performance instructions and automatically assign the correct sounds from the library. For more details about the VST interface see page 146.

Use of *capella-tune* in the different programs

	➔ How to open the *capella-tune* dialog	➔ How to select the playback device
capella	• Extras → Options → Sound → Playback → Playback-Options • Keyboard shortcut: Shift+Ctrl+J	• *capella-tune* dialog → Instruments → Profiles • or in the *capella* System Template individually for each voice
capella-scan	• Edit → Options → Playback → Details... • Keyboard shortcut: Shift+Ctrl+J	• *capella-tune* dialog → Instruments → Profiles
capella playAlong	• The dialog is integrated in the tab no. 10, Fine tuning. Only the *capella-tune* tabs are shown which are relevant for *capella playAlong*.	• The playback device is managed directly by *capella playAlong*.

NB: MIDI sound cards as well as VST plug-ins can be selected as playback device.

NB: On the *capella-tune* tab INSTRUMENTS you can assign a different playback device and sound to each instrument of your *capella* score. By selecting your MIDI sound card profile, all instruments will be set to that sound card.

➔ **How to select the playback device in *capella 7*:**

With *capella 7* and the *capella* file format CapXML 2.0 you can select the device and sound for each individual voice already in the System Template of the *capella* score. There you have two options:

- Set the DEVICE to UNSPECIFIED and select an instrument under SOUND. This way the *capella* score remains independent from the sound libraries and sound cards installed on a specific computer. The actual sounds during playback are taken from the INSTRUMENTS tab.
- Alternatively, select a specific device and a specific sound already in the System Template. These settings will be saved in the *capella* file. If you transfer the file to another computer the specified sounds may not be available. In this case the INSTRUMENTS tab will be searched for adequate substitutions.

The Tabs of the *capella-tune* Dialog and the Chapters of *capella-tune* Manual

- **Instruments:** Define which instruments have which articulations and which sounds must be used for these. For sounds you can assign those of your MIDI sound card and those from your VST plug-in. See page 124.
- **Articulations:** Define how the various articulations are represented in the score. See page 126.
- **Playback Devices:** Install and configure your VST plug-ins. See page 128.
- **Dynamics & Rhythm:** Define the volume for various dynamics and tone duration for various articulations. Define special rhythms e. g. swing or Viennese Waltz. See page 131.
- **Repeats:** Repeats and jumps (like da-capo) are defined directly in the score. Details are explained here: page 134. There are no further configuration options in the *capella-tune* dialog. Repeats and jumps can be turned on and off globally in the playback options of the main program.
- **Trills & Ornaments:** Define how the various trills and ornaments are to be played back. See page 137.
- **Tunings:** Activate and sample various historic tunings or switch on Hermode Tuning. The latter is a special method that automatically tunes chords for just intonation. See page 141.
- **MIDI options:** Define various parameters which are mainly relevant for the MIDI file export. See page 144.
- **VST plug-ins:** Information on setting up VST libraries can be found here: page 146.

Instruments

capella-tune dialog, Tab INSTRUMENTS

Here you can determine how the individual *capella* instruments will sound during playback by setting the playback device (see page 125) and the sound (see page 125) for each instrument. Furthermore, you can create individual articulation entries (see page 124) for each instrument, to define which specific sounds should be used for the various articulations. In columns VOL (volume) (see page 125) and PAN (panorama) (see page 125) you can individually set volume and stereo position respectively.

Example: You want to play back the score of a violin sonata. You have set the instrument in the System Template of *capella* to "violin". This setting points to the entry "violin" in the column CAPELLA INSTRUMENT. On the same row of this instrument select a playback device and a suitable sound for the violin. You can create additional entries via the right-click context menu of the violin for special articulations, e. g. for pizzicato. Thus you can select a suitable sound for the plucked violin. During playback, *capella-tune* will then automatically use the pizzicato sound whenever it encounters the relevant articulation symbol in the score. The Articulations tab (see page 126) is used to define which instruction symbol will switch on/off the pizzicato sound. You can also define completely new articulations there.

NB: From *capella 7* onwards (file format CapXML 2.0) you can select specific sounds already in the *capella* System Template. In this case the instrument list of *capella-tune* will be ignored unless you select DEVICE = UNSPECIFIED in the System Template. The latter setting is recommended in order to make the *capella* file independent from locally installed sound cards and sound libraries.

➔ **How to mark several fields to apply a common value**

- To select several individual fields click the fields while holding down Ctrl.
- To select a continuous list click the first field and while holding down Shift click the last field.
- To select an entire column click the column heading.

Column: capella Instrument

Click the "+" sign in front of an instrument group name to display the list of corresponding instruments. Then right-click an instrument name to open a context menu which offers the following options:

- Option NOTATION RANGE allows you to determine whether an instrument refers to an individual voice or all voices on a staff or even several staves in a *capella* score. This setting influences the range that is affected by articulation instructions.
- Option NEW ARTICULATION ENTRY creates an initially blank entry for the marked instrument. Right-click this new entry to select one or more articulations from the context menu. The list of available articulations can be edited on the ARTICULATIONS tab (see page 126).

- You can also remove an articulation entry via the context menu.
- Option Optimize for resets all sounds and articulations for the marked instrument to the optimum value of the playback device.

NB: To optimize the entire list of instruments for a particular playback device simply select the relevant device under Profiles at the bottom of the Instruments tab (see page 126).

- At the bottom of the instruments list you find the percussion channel, where the context menu offers an option to Add Percussion Sound. Here you can add your own entries for specific percussion tones to assign your own sounds to these tones. The main entry Percussion Channel determines the settings for all percussion tones that do not have their own entries.

Column: Playback Device

Use the context menu to select the playback device for each marked entry. You can select from all MIDI devices (sound cards) and VST plug-ins (see page 146) that are installed on your PC. You can register additional VST plug-ins with *capella-tune* on the Playback Devices tab (see page 128).

Column: Sound

Use the context menu to select the sound for the marked entries. For MIDI devices you have a choice of the standard MIDI sounds. For VST plug-ins the choice depends on the range of options of the plug-in.

Column: Vol

Right-click the displayed value for each instrument to access a volume slider. You can also click the value and press F2 to enter a numerical value. The volume setting in this column is a percentage of the volume setting in the *capella* System Template (see page 101), i. e. you can increase or decrease the volume of individual instruments. The default value is 100%.

Column: Pan

Right-click the displayed value for each instrument to access a stereo panorama slider. You can also click the value and press F2 to enter a numerical value for left or right. The default value is 0.

Same sound for all instruments

This setting will deactivate the Instruments tab. Use this setting to achieve a uniform sound for all voices without considering the different instruments and articulations. The sound to be used is set on the Playback Devices → Test → Default sound tab (see page 129).

View: MIDI / Generic

This setting determines the sort order of the instruments displayed in the list. The MIDI view is common computer standard, but the range of instruments is limited and the

sorting order is not always intuitive (e. g. kettle drum with the strings). The GENERIC view is based on *capella*'s score wizard. It contains more instruments and is structured in a musically more systematic way. The additional instruments can be used only from *capella 7* onwards (file format CapXML 2.0) and only if suitable VST libraries are installed (see page 146) because they are not available on ordinary MIDI sound cards.

Preset Profiles on Instruments Tab

Open the PROFILES drop-down list to load one of the preset profiles.

Click ORGANIZE... to open a menu with options to create and administer your own profiles.

Click APPLY to save your changes of the current tab. If you have modified a standard profile a new profile will be created with the addition "(modified)" in the profile name. To return to the previous state click ORGANIZE → RESET TO PREVIOUS STATE.

Click OK to save the current settings on all tabs, or click CANCEL to dismiss all changes that have not yet been saved.

Articulations

capella-tune dialog, Tab ARTICULATIONS

This table lists how the different articulations are identified in the score. The identification can be by note attributes, *capella* symbols or text objects.

Some articulation signs have to be anchored to each affected note (i. e. tenuto ties), while others can be set to indicate the beginning and end of a section (i. e. the text object "pizzicato", which means plucked).

You can define any number of identifications for each articulation. The articulation will be activated as soon one of the identifications is present in the score.

The entries in the articulation list are required for the following features:

- Distinction of articulations on Instruments tab (see page 124).
- Generation of special rhythms on the Dynamics & Rhythm tab (see page 133).

The settings for ATTACK INTENSITY and NOTE SHORTENING on the Dynamics & Rhythm tab are not affected by the articulation list.

Column: name

Right-click on any entry to open the context menu, which allows you to create, delete, rename and reorder articulations.

The sequence of articulations in this table is of relevance when no entry can be found that exactly matches the identifications presented in the score.

Example: Let's assume you have created two articulation entries, pizzicato (plucked) and marcato (emphasized), for instrument violin in the list of instruments and you have

assigned specific sounds to both of them. As *capella-tune* reads a *capella* score it encounters an emphasized pizzicato, but no specific sound has been defined for this combination. *capella-tune* therefore has to decide which of the two sounds to use. This is where the sequence of entries in the articulation list is of importance. In our example it is obviously preferable to use the pizzicato sound than the marcato sound, which is only bowed. That's why the pizzicato setting must be higher up in the list than the marcato setting.

Column: articulation sign

Define the articulation sign that must be present at all relevant notes. You can define several identifications per articulation via the context menu. For each entry you can choose the type of identification marks from the context menu (see page 127).

You can also define a grouping symbol like a bracket or a wavy line. This will extend the articulation across the entire group.

The entry Bracket in the sub-menu Grouping refers to both repeat box brackets and tuplet brackets. When entering these brackets in a *capella* score you need to deactivate the number.

The context menu option Entry Defines Exception allows you the exclude specific notes within an articulation section.

Section Start and Section End

Set the beginning and end of an articulation section. You may define several entries via the context menu. For each entry you can define any of the possible entry types from the context menu (see page 127). The start and end instructions are not paired, i. e. any type of entry may start the articulation, while any non-related type may end the instruction. Simply put, any instruction in the second column will end any instruction from the first column.

Types of Articulation Marks

- Text: Enter the text that you have previously inserted as a text object into a *capella* score. You may add an underscore "_" as the last character to enable finding text objects that are longer than the entry, i.e. *pizz_* will respond to text objects like *pizzicato, pizzikato, pizz*, etc.
- Special Note Heads: Select rhombus heads, triangular heads, etc.
- Articulation Signs: Select any of the signs from the sub-menu. These can be entered into the *capella* score either as note attributes or as music symbols.
- Ornamentation Signs: Choose any symbol from the sub-menu.
- All capella Symbols: For the sake of completeness we include this option, although all common symbols are included in the above options.
- Tremolo Bars: Select numbers 1 to 5.

Preset Profiles on Articulations Tab

Open the PROFILES drop-down list to load one of the preset profiles.

Click ORGANIZE... to open a menu with options to create and administer your own profiles. For example you can save a preset profile in a file and transfer it to another computer. Select MERGE FROM FILE to load a file and integrate the articulations into the current list. Select IMPORT FROM FILE to replace the current list.

Click APPLY to save your changes of the current tab. If you have modified a standard profile a new profile will be created with the addition "(modified)" in the profile name. To return to the previous state click ORGANIZE → RESET TO PREVIOUS STATE.

Click OK to save the current settings on all tabs, or click CANCEL to dismiss all changes that have not yet been saved.

Playback Devices

capella-tune dialog, Tab PLAYBACK DEVICES

This dialog box assists you in administering your playback devices. It lists your MIDI playback devices as well as any VST plug-ins (see page 146) that have been registered with *capella-tune.* In order to select any of these for playback please refer to the tab INSTRUMENTS, see page 122.

MIDI and VST Playback

This table lists all MIDI devices installed in your PC and all VST plug-ins that have been registered with *capella-tune*.

➔ **How to register a new VST plug-in with *capella-tune***

1. Right-click in column MIDI AND VST OUTPUT and select ADD VST PLUG-IN from the context menu.
2. Select the plug-in file from the PLUG-IN-DLL dialog. All VST plug-ins have a *DLL* file extension. However not all files ending in *.DLL* are VST plug-ins. Therefore you need to watch where the plug-ins are placed during installation of the plug-in software. Alternatively you can select a *capella-tune* configuration file which is named like `..._captune.ini`.
3. Once you have selected a particular plug-in *capella-tune* will verify the installation. Any errors or incompatibilities will be indicated.

NB: *capella Vienna orchestra* is automatically registered with *capella-tune* during installation.

Column: delay

With every MIDI or VST device there is a delay between a note being touched and the sound being played back. This delay usually amounts to only a few milliseconds and should not pose a problem. However, as soon as you use several playback devices si-

multaneously for separate voices of a *capella* score you may find that some voices drag behind others, if the delay of the different devices is not identical. To synchronize all devices you can modify the delay. There are no known rules to this, only trial and error will lead you to an acceptable result.

VST Effects

This list shows all VST effects that have been registered with *capella-tune*. VST effects are filters that can – for example – apply cathedral type acoustics to the otherwise dry studio recordings of the sample library.

➔ **How to register a VST effect with *capella-tune***

1. Right-click in column VST EFFECT to open the context menu and select ADD VST PLUG-IN.
2. From the FILE OPEN dialog select the required plug-in file. All VST plug-ins have a file extension of .DLL, which is not to say that all .DLL files are VST plug-ins. When you install any additional VST plug-in software you must record in which folder the software is installed in order to find it again for this *capella-tune* registration.
3. After selecting the file *capella-tune* will verify the plug-in. Any errors or incompatibilities will be reported.

At the right margin of this list you can switch the plug-ins on or off. The VST effects will always affect the overall sound, i. e. all voices of your score. If you activate more than one VST effect these will be applied in the sequence in which they are listed in this table. You can re-arrange this sequence via the context menu where you can shift the plug-ins up or down in this list.

> NB: VST effects are only applied if you play back using your sample library. If you play back via your MIDI sound card the VST effects will not be utilized.

Double click the name of the special effect in the list to open the effect's own control dialog, where you can set certain parameters. If the plug-in offers a list of pre-defined settings then these can be selected from the context menu: LOAD VST PROGRAM that opens when you right-click the plug-in name in the VST Effect column.

Recommended Echo Effect Plug-ins

We have looked around for some affordable yet good quality plug-ins. We recommend:

- **FreeverbToo:** This plug-in is freeware and is automatically installed by *capella-tune*. Publisher: `http://www.sinusweb.de/freetoo.html`
- **Ambience:** This plug-in is donationware and can be downloaded for a donation from: `http://magnus.smartelectronix.com`.

Test box

You can test your selected device in this section of the dialog box. You may either use the keyboard display or connect a genuine MIDI keyboard. Select a default sound of

your choice from the drop-down list of instruments. This setting will also be used in other parts of *capella-tune,* i. e. on the Trills & Ornaments and Tunings tabs. You can shift the range of the keyboard (up or down by up to two octaves) by setting the SHIFT OCTAVE option on the TUNINGS → RELATION TO KEY tab.

MIDI RESET: Click this button to set the MIDI interface to its default values.

Wave Output for VST Devices

VST devices are virtual devices that compute Wave sounds. Once computed, a sound is sent to a real Wave-out device which you can select here.

- BLOCK SIZE: This is the size of data packets into which the Wave-sound will be divided. The smaller this value is, the less delay will be experienced. If you hear a crackling noise you need to increase this value.
- NUMBER OF BLOCKS: This setting determines the number of data packets that should be calculated in advance. The smaller this value is, the less delay will be experienced. If you hear crackling noise you need to increase this value.
- THREADS: This setting determines the number of threads that are deployed to calculate a data packet. Using more than one thread facilitates parallel calculation of voices/instruments. This can be an advantage with dual core processors and with streaming based plug-ins that continuously load samples from the hard disk.
- WAVE OUT: Select the output device. You can choose between MME and ASIO devices. MME is the slightly outdated Windows Sound Engine. MME devices require higher values for block size and number of blocks to prevent crackling. We therefore recommend that you use ASIO devices instead of MME devices. Most sound cards are equipped with ASIO drivers. If you cannot find such a driver in this drop-down list we suggest that you download and install the free tool Asio4all from this website: http://www.asio4all.com. It will provide you with an ASIO interface to your sound card and yields much improved results over the MME driver.
- ASIO...: Once you have selected an ASIO device this button will access the configuration dialog of the ASIO driver.
- L and R: If you select an ASIO device this setting allows to determine the sound card channels for left and right stereo output.

Configure VST Plug-in

See page 146.

VST Volume

This slider allows you to set a factor by which the Wave sounds will be multiplied before playback.

Test Tuning

TEST TUNING: If you work with historic tunings or Hermode Tuning (see page 141), the pitch of each tone has to be slightly modified. Several MIDI and VST instructions are available for this purpose, but not all of them are equally supported by all devices. We therefore recommend that you test the tuning for each device so that *capella-tune* knows what options are available.

The following instructions will be tested:

- PITCH BEND (MIDI COMMAND E0): This instruction should be understood by all devices. The disadvantage of this instruction is that individual notes cannot be corrected. A device can only be tuned higher or lower in its entirety. Therefore a chord can only be tuned properly if each note of the chord is played back on a different device. *capella-tune* can circumvent this problem on MIDI devices by splitting the notes across separate MIDI channels.
- SINGLE NOTE TUNING: This option allows you to tune individual notes. Unfortunately very few devices support this instruction.
- VST: This option also allows you to tune individual notes. However this instruction is only available on VST devices, and only in the non-real-time version.
- REAL-TIME: In this context *real-time* means that sounding notes can be retuned afterwards.
- NON-REAL-TIME: Notes can be struck at any pitch, but cannot be retuned afterwards. This will be sufficient for historical tuning. Dynamic Hermode Tuning however requires real-time functionality.

Dynamics & Rhythm

capella-tune dialog, Tab DYNAMICS & RHYTHM

Dynamic Levels

You can set the attack intensity for all dynamics from ***ppp*** to ***fff***. Attack intensity will also influence tone quality, contrary to the volume setting in the *capella* System Template and on the **Instruments** tab.

fp will be played back as *forte* at the beginning with a subsequent decrescendo to *piano*.

Articulation Sign

You can set the ATTACK CHANGE and NOTE SHORTENING for selected articulation signs.

The ATTACK CHANGE is a relative value in percent referring to the current dynamic setting in the DYNAMIC / ATTACK INTENSITY sub-dialog on the left. Example:

- Set Attack Intensity on the left for piano (***p***) to 67 and for forte (***f***) to 110.
- Set Attack Change for sforzato (***sf***) to 150%
- Now a note marked sforzato will be played back with an attack intensity of 100.5 in a piano section (67 * 150% = 100.5). In a forte section the sforzato note would be played with an attack intensity of 165 = 110 * 150%. However, the latter value would be reduced to 127 as this is the maximum value.

The Note Shortening can be set via its right-click context menu either as a relative value or as an absolute value. The relative value refers to the note value, while the absolute value indicates the rest in milliseconds before the next note. This is particularly useful for broad articulations like tenuto and portato.

At the end of the list you find the setting for arpeggio. An arpeggio sign means that the notes of a chord will not be played back simultaneously, but in succession. The value entered at Note Shortening indicates the time between the successive sounds. Setting the value to "0" switches the arpeggio function off.

crescendo and diminuendo (decrescendo)

Crescendo hairpins and text instructions like *cresc.* and *dim.* will be considered. You may define additional instructions with the *crescendo* and *diminuendo* entries on the Articulations tab.

The length of the hairpin is irrelevant. De/crescendo will always be stretched from the start of the hairpin to the next dynamic sign or to the next reverse hairpin. In cases where no target volume is indicated in the score you can set the number of dynamic gradations required.

Changes in volume for sustained notes will be considered by *capella-tune* as far as the respective instrument is capable of doing so. Naturally, changes of volume within a sustained note are not possible for pianos, plucked instruments and percussion instruments, while string instruments and wind instruments *are* capable of changing the volume. In cases where a sustained note contains two opposing hairpins the note will be split into two tied halves.

Scope

This setting allows you to determine which groups of voices should be affected by dynamic signs. If you de-select all options a dynamic sign affects only the voice to which it is assigned.

You can increase the scope of effect step by step:

- All voices on a staff
- All voices that are grouped with {
- All voices that are grouped with [
- The entire system

It is irrelevant in which voice of a group of voices the dynamic sign is placed. Contradictions will be resolved at random.

NB: With *capella 7* (file format CapXML 2.0) the scope is defined directly in the properties of each dynamical symbol. Right click the symbol in *capella* and chose EDIT → POSITION → SCOPE.

Include Dynamics during playback

This option switches the inclusion of dynamics control on or off.

Preset Profiles on Dynamics & Rhythm Tab

Open the PROFILES drop-down list to load one of the preset profiles.

Click ORGANIZE... to open a menu with options to create and administer your own profiles.

Click APPLY to save your changes of the current tab. If you have modified a standard profile a new profile will be created with the addition "(modified)" in the profile name. To return to the previous state click ORGANIZE → RESET TO PREVIOUS STATE.

Click OK to save the current settings on all tabs, or click CANCEL to dismiss all changes that have not yet been saved.

Special Rhythms

Distinctive rhythms like swing or Viennese Waltz are defined in this list.

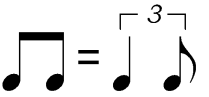
Column ARTICULATION: Right-click to open the context menu and select one of the articulations (see page 126) to define how this special rhythm is indicated in the *capella* score. From the context menu's sub-menu NOTATION SCOPE you determine the scope of voices that this articulation should affect.

Column GROUP OF NOTES: Define the size of the group of notes whose rhythm must be modified. Right-click the number and/or the duration of the note to pick a suitable value from the context menu.

Column PROPORTION OF NOTE DURATION: For each note of the rhythm group you find a numeric value. These values indicate the duration relationship between the individual notes, which is also indicated by the length of the green bars. The numeric values can be edited via their context menu or by pressing F2. It is irrelevant whether you specify the relationship as 2:1 or as 200:100. The sum of all numeric values does not have to amount to a specific value. If you want to compare the tone durations with their original duration we recommend that you start off with e. g. 100:100 and maintain the total sum. 120:80 would then indicate that the first note will be lengthened by 20% while the second note will be shortened by 20%.

Example: Swing Rhythms

A swing rhythm is usually notated with normal eighths, where the first eighth is played a little longer and the second eighth is played a little shorter, approximately in a ratio of 2:1.



The identification of *swing* in the *capella* score is defined on the Articulations tab. You can switch on swing rhythm with the text object *swing* and switch it off with another text object, e. g. *straight*. To interpret individual pairs of eighths as swung you might also attach a triplet bracket in the score.

> NB: Do not format the eighth note as triplet, attach a triplet bracket as a graphic object to the notes. To interpret individual pairs of eighths within a swung section as normal you can attach a duplet bracket.

The ratio of the duration of the two swinging eights is defined on the tab Dynamic & Rhythm under Special Rhythms, column Proportion of Tone Duration. Here you see two values which represent the length of each note. The default value of 125:75 is something in between triplet rhythm (133:67) and regular (100:100).

Example: Viennese Waltz

With a Viennese Waltz the second beat is a little early, while the third beat is a little late. You will get usable results with a setting of 75:130:95 or – more moderate – 85:115:100. These values have been selected to total 300. This helps to interpret each number as a percentage in relation to a uniform 3/4 time with the values 100:100:100.

There is no specific notation for the Viennese Waltz rhythm. It is usually applied intuitively, mostly in the accompaniment rather than in the melody voice. It is a lot of work to properly set up a *capella* score for this rhythm. We have defined the text objects *WrW* (derived from the Austrian *Wiener Walzer*) and *NrW* (normal Waltz) on the Articulations tab as on/off instructions. You can insert these text objects into your *capella* score. To hide them from view format them with text color white.

Include Special Rhythms During Playback

This option switches the inclusion of special rhythms on or off.

Repeats & Repetitions

All kinds of repeats and repetitions are controlled by musical instructions in the score, where the guidelines of this chapter should be taken into account. Repetitions and section repeats can be globally turned on and off in the playback options of the main program (e. g. *capella*, *capella-scan*, …).

Repetitions

Repetitions are played back as usual. Nesting is possible. If the opening repeat sign **𝄆** is omitted, repetition starts at the beginning, or – if present – at the last final double barline **𝄀**.

Repetitions in a da-capo section are usually not repeated. If this is still required the jump instruction must be supplemented with *con rep*. This is derived from the Italian "con repetizione" = with repetitions. Example: *da capo al fine con rep.* = repeat from the head (beginning) to the end with repetitions.

Repeat brackets with 1. are acknowledged. If you de-activate repeats on the playback dialog of the main program you can decide whether the first repeat box should be skipped. The scope of repeat brackets must be set to "Entire System" in *capella*, see *capella* menu DRAW → EDIT OBJECT → POSITION → SCOPE. In *capella* versions older than 7 (or *capella* file formats older than capXML 2.0) repeat brackets must be anchored to the first voice used in the current system.

Section Repeats *(da capo* and *dal segno)*

There are repeat marks (e. g. segno) and repeat instructions (e. g. dal segno). Both are defined in text objects, either as text or using music symbols. The scope of the objects must be set to "Entire System" in *capella*, see *capella* menu DRAW → EDIT OBJECT → POSITION → SCOPE. In *capella* versions older than 7 (or *capella* file formats older than capXML 2.0) the objects must be anchored to the first voice used in the current system.

Repeat Marks

The chronological position of repeat *marks* corresponds to the *beginning* of the note to which they are anchored.

The following repeat marks are available:

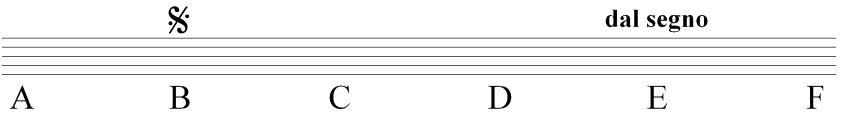
as text:	capo	segno	coda	fine
as music symbol:	𝄋	𝄋	𝄌	

capo is usually defined as the beginning of the file or the movement but may be placed in a different position if so required. Any system where the automatic measure numbering is reset is considered a new movement. The text mark *segno* can basically be used for both symbols shown in the above table. If in doubt it will be identified with the first symbol.

Repeat Instructions

The chronological position of repeat *instructions* corresponds to the *end* of the note to which they are anchored. Therefore these instructions must be anchored to the last note of the old section.

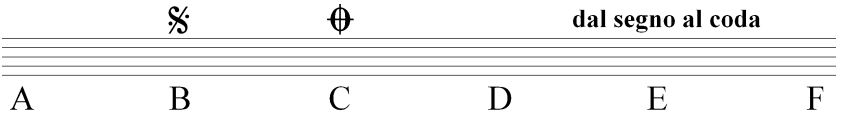
- **Repeat instruction *da <mark>:*** The section between <mark> and repeat instruction is repeated. The following example creates the sequence A-E, B-F.



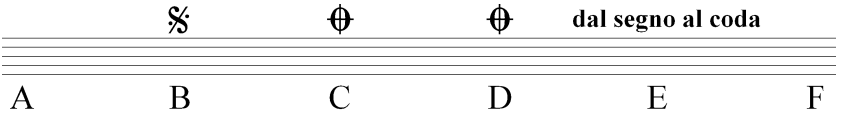
Repeat instructions can begin as follows:

as text:	*da ...* *d. ...* *dal ...*	Abbreviation for *da capo*: *d.c.*	*Abbreviation for dal segno*: *d.s.*
as music symbol:		*D.C.*	*D.S.*

- **Repeat instruction *da <mark1> al <mark2>:*** The section between <mark1> and <mark2> is repeated. Afterwards continuation begins after the repeat instruction. The following example creates the sequence A-E, B-C, E-F.



Repeating the second repeat mark will create the following sequence: A-E, B-C, D-F.
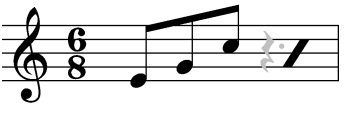


All parts of a repeat instruction *da ... al ...* must be placed inside the same text object. Concatenation of several text object will not be recognized. Repeat instructions that are a combination of text and symbols therefore must have the form of a Freeform text.

- **Examples**: *D.C.* al 𝄋, D. 𝄋 al 𝄌
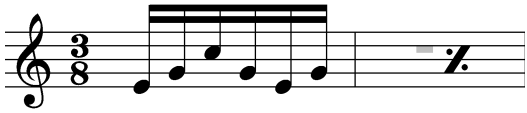
Repeat Signs

Repeat signs indicate the repetition of the last group of notes (𝄎), or last measure (𝄏), or the last two measures (𝄎 𝄏). In *capella* these signs are text objects without note value. For *capella-tune* to interpret these correctly during playback they must be anchored to a rest, which is then formatted as invisible. These rests are shown in gray in the following illustrations.
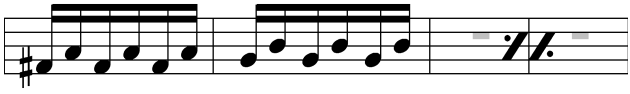
The repeat sign for the last group of notes must be attached to a rest that - through its value - indicates the length of the group.



Measure repeat signs must be attached to a whole-measure rest.



Double measure repeat signs may be attached to the first or second whole-measure rest.



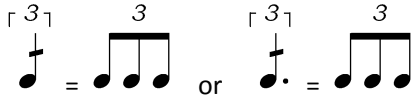
Abbreviations

Tremolo bars are used to indicate rapid repetition of notes. The number of bars indicates the note value of a single note, which will be repeated until the overall note value is reached.



Triplet note repetitions can be achieved by placing a triplet bracket above the note.

Example: A quarter with one tremolo bar and triplet bracket above will generate three triplet eighths. The quarter note itself must be either a regular quarter or a triplet quarter with a dot. It depends on the context, which notation is more suitable.
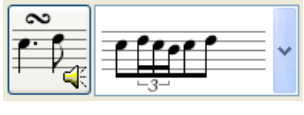


NB: Tremolo bars are also used to indicate tremolos and drum rolls see *roll* on the Articulations tab. If the roll articulation has been assigned to an instrument on the Instruments tab (e. g. timpani for *capella Vienna orchestra*) *capella-tune* will play back a sustained note with roll sound.

Trills & Ornaments

capella-tune dialog, Tab TRILLS & ORNAMENTS

These symbols belong to the group of trills and ornaments: tr, tr, ~, ~, ~ as well as grace notes and passing appoggiaturas, i. e. miniature notes without value. There are certain conventions on how to play these ornaments, depending on the epoch and the composer, but ultimately taste and skill of the musician will influence the interpretation.

For each trill and each ornament you find a list of options, e. g.:



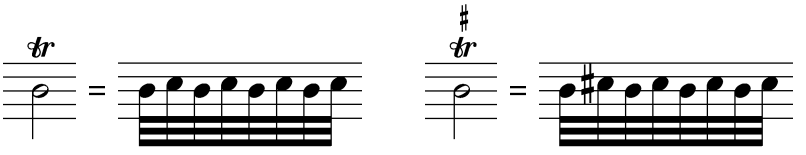
The current setting can be played back by clicking the respective button on screen.

The displayed note values should not be seen as absolute values, in that they depend on the playback tempo. With faster tempos the note values will increase to avoid fast trills that cannot be played back any more. The note values will be shortened only if an ornament does not fit into the value of the main note:

Tempo	**indicated 16th will be played as...**
quarter = 40 to 80	32nd
quarter = 81 to 160	16th
quarter = 161 to 320	eighth

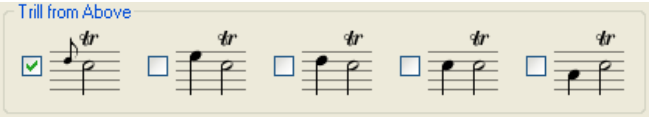
Trills

Accidentals for the auxiliary note can be placed as a text symbol above the trill symbol:

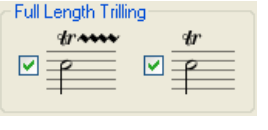


You have 5 options to indicate when and how the trill should begin with the auxiliary note:
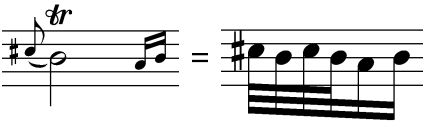
- with grace note
- preceding note is higher
- preceding note has same pitch as auxiliary note
- preceding note has same pitch as principal note
- preceding note is lower



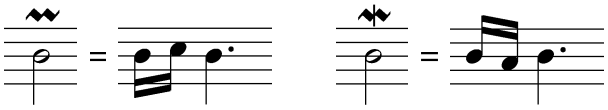
capella allows you to indicate a trill by setting either a trill symbol or a wavy line. You can decide for both cases whether the trill should be sustained along the entire note. Otherwise only two trill beats will be played.



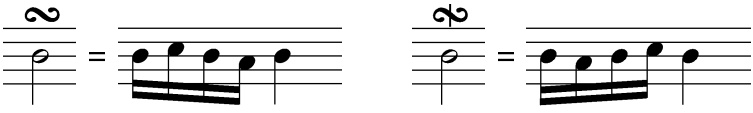
Combinations with passing appoggiaturas are also possible:



Upper mordent, mordent
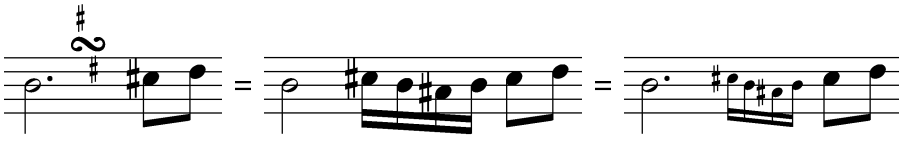


Turn, Inverted Turn
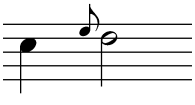


With a normal turn the ornament is first placed above and then below the principal note. The opposite applies to inverted turn. The inverted turn is either marked with a single line or a mirrored symbol.

Accidentals for the upper auxiliary note are positioned above the turn symbol, accidentals for the lower auxiliary note are placed below:
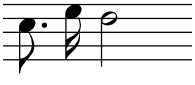


In this example the turn symbol is not positioned above the note, but above the gap to the next note. These cases are dealt with separately in the trill dialog.
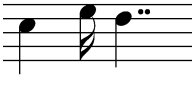
Single Grace Notes
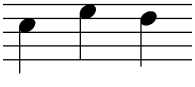


Single grace notes can have three different functions:



Acciaccatura before the beat: The preceding note is shortened. The grace note is played before the stroke.
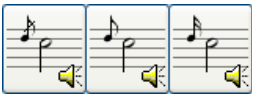


Acciaccatura on the beat: The grace note is played on the beat and the main note is shortened accordingly.



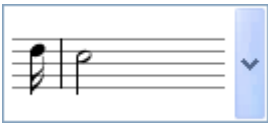
Passing appoggiatura: The grace note assumes half the value of the main note (or more if the main note is dotted).

There are no general rules as to how to notate which grace note. You may therefore set the interpretation individually for the following notations:
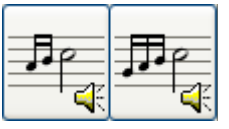
- crossed out eighth
- normal eighth (or longer note values)
- 16th note (or shorter note values)
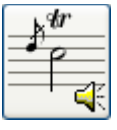


In the drop-down list of each symbol you will find that the execution before the beat is symbolized by a barline.



For two or more grace notes you can determine whether the notes should be played before or on the beat.



Single Grace Note Preceding a Trill

Single grace notes preceding a trilled note are merged into the trill according to the settings at .

This setting is used for all notations of grace notes, whether crossed out or not. However, the following conditions apply:

- In the trills dialog the function of this type of grace note must not be set to "passing appoggiatura", compare with preceding section.
- In the *capella* score the grace note has to be formatted as "appoggiatura" and not "passing appoggiatura".

Otherwise grace note and trill are interpreted separately.

Include Trills and Ornaments During Playback

This option will switch on or off the inclusion of trills and ornaments during playback.

Preset Profiles on Trills & Ornaments Tab

Open the PROFILES drop-down list to load one of the preset profiles.

Click ORGANIZE... to open a menu with options to create and administer your own profiles.

Click APPLY to save your changes of the current tab. If you have modified a standard profile a new profile will be created with the addition “(modified)” in the profile name. To return to the previous state click ORGANIZE → RESET TO PREVIOUS STATE.

Click OK to save the current settings on all tabs, or click CANCEL to dismiss all changes that have not yet been saved.

Tunings

capella-tune dialog, Tab TUNINGS

What are Tunings?

Modern musical instruments (and computers) divide an octave into 12 equal half step steps. The advantage is that any given interval or chord will always sound alike, regardless of the starting note. The disadvantage is that except for the octave, no interval sounds perfect. Minor beatings will always be audible. This tuning is called equal temperament tuning.

When is an Interval Perfect?

All string instruments, wind instruments and the human voice have a harmonic overtone spectrum. In this case harmonic means that the frequencies of the overtones are integral multiples of the tonic. We sense an interval to be perfect when many overtones match precisely without any friction. It follows that the frequencies of the tonics or roots must also relate to each other in integral proportions.

Where is the Problem?

With equal temperament tuning the integral frequency proportions are relatively well approximated, though not exactly met. To properly tune a chord the individual pitches need to deviate slightly from the equal temperament tuning. All qualified musicians will do this automatically as far as their instrument allows. Hermode Tuning takes this into consideration (see page 142).

Select and Test Tuning

Select the tuning in the left part of the Tunings tab. To create your own tunings you can right-click any of the listed items and from the context menu administer the tunings. On the right part of this tab you see the scale with the individual notes. To play back a specific chord you need to click the required notes and then press F5 or click PLAY CHORD at the bottom left of the dialog. The default sound as set on the Playback Devices tab is used. To listen to individual notes you can right-click their respective button. As you flip through the various pre-defined tunings, watch the area below the tab label between PITCH DISPLAY and ABSOLUTE TUNING change its function from PURITY (Hermode Tuning) to ENHARMONIC to NOT AVAILABLE.

Pitch Display

Pitch can be shown in cent or as frequency ratio. For cent values you can set the number of decimals from 0 to 5.

- Frequency ratios are of special interest for natural harmonic tunings, where the intervals are determined by integral ratios. The reference note is defined as 1:1,

the octave as 2:1. Therefore the higher note has double the frequency of the lower note. To add or subtract intervals you need to multiply or divide the frequencies.

- The cent display runs linear with our sense of pitch and is useful to compare different tunings or intervals. The reference note is defined as 0 and the octave as 1200. An equal-tempered half step step is equal to exactly 100 cent. To add or subtract intervals you need to add or subtract the cent values.

Conversion of a frequency ratio to per value is achieved as follows:

cent value = 1200 * log(numerator / denominator) / log(2)

Conversion of cent value to frequency ratio is achieved as follows:

frequency ratio = 2^ (cent value / 1200)

There is no explicit solution to further break apart the frequency ratio into numerator and denominator. *capella-tune* achieves the best result by trial and error.

Intonation Display

Click the Intonation display button to open a small window to show which notes are currently (when you click on Play Chord) sounding with which intonation. This is particularly useful for Hermode Tuning (see below) because the intonation display is continuously adapted.

Hermode Tuning

With Hermode Tuning the intonation of individual notes is automatically optimized to match the musical context. Therefore there is no static tuning scale and the values in the right part of the tab are of no relevance.

Hermode Tuning usually provides the best sounding results. This method fits the technique of good musicians with instruments without any intonation restrictions. The list of tunings on the left offers several different Hermode variants. The differences are explained in the small window below the list. The following additional options are available for the four preset Hermode Tunings:

- Purity: Set the purity of the tuning. 100% is equivalent to absolute purity, while 0% corresponds to equal temperament tuning.
- Include mute voices: If you play back only a single voice out of several, and this option is set, *capella-tune* will take into account the harmonies of the mute voices when calculating the intonation.

Historical Tunings

In the course of the history of musical instruments there were numerous attempts to improve the tuning of instruments. This tuning problem was particularly pressing with keyboard instruments, in that their intonation cannot be corrected during play. Histori-

cal tunings are working from a static tuning scale where each note of the scale has a fixed pitch. There are twelve-part scales that correspond to a normal keyboard instrument, and extended enharmonic scales that differentiate between sharps and flats. The latter can really only be accessed via the computer, although there have been instruments with split black keys in the past.

You can activate the ENHARMONIC option to extend the twelve-part scale. However some tunings have been defined for the twelve-part scale only and therefore do not offer this option.

Relation to Key

With historical tunings the purity of an interval depends on the starting note, and thereby also on the key. Click the RELATION TO KEY tab to define in which way the key should be handled:

- KEY: Select a key to experiment with; playback of a *capella* score uses the key from the score.
- BEGIN SCALE WITH: Decide whether you want to always use c Major or whether the displayed list of notes on the right should match the scale of the selected key.
- 0 CENT = 1:1: Decide whether the numerical values in the list of notes should be displayed relative to *c* or to the tonic of the key. This setting only affects the display on screen. The notes' pitch is not affected.
- RELATE TUNING TO: If you select *c* this setting will correspond to a piano. The individual notes are permanently tuned, regardless of which key you play in. Therefore the different keys can acquire different characteristics depending on the tuning. If you select TONIC OF THE KEY, the setting will provide the following scenario: A trumpeter plays a c-Major piece on a c-trumpet and a b-Major piece on a b-trumpet. Utilizing the natural harmonic tuning, in the first case the interval c – e will produce a pure Major third, in the second case an interval b – d.
- ABSOLUTE TUNING: Decide which note should maintain its pitch when you change the tuning.
- USE SOUNDING KEY WITH TRANSPOSING VOICES: Decide whether the sounding or the noted key should be used with transposing instruments. Because the sounding key is calculated you still have to determine whether sharp or flat keys should be used when in doubt. This option is only relevant if you relate the tuning to the tonic of the key.
- SHIFT OCTAVE: Shift the displayed scale up or down by up to two octaves. This setting will also influence the pitch on the Playback Devices tab. It shifts the range of the piano keyboard in the test section.

Absolute Tuning

This option allows you to shift the entire scale up or down. You can either enter a frequency for concert pitch, e. g. 430Hz, or an interval that sets the tuning relative to the standard concert pitch of 440Hz. The interval may be entered either as frequency ratio, in our case 43:44, or as cent value, in our case -39. This will lower the tuning of the tone scale by 39 cent.

Bear in mind that the frequency specification for a' is only symbolic and is only correct, if you set ABSOLUTE TUNING to a' in the RELATION TO KEY dialog box on the left. If you set the ABSOLUTE TUNING to c, for example, and the concert pitch is set to 430Hz, then *capella-tune* will first calculate the interval between 440Hz and 430Hz as a cent value. Next, the c will be tuned lower by this interval than it would sound in equal temperament 440Hz tuning. Finally, the a will be calculated depending on the selected tuning style.

The settings for absolute tuning are saved with each tuning style separately.

MIDI Options

capella-tune dialog, Tab MIDI OPTIONS

General

- DON'T TRANSPOSE PERCUSSION: Percussion voices are usually not transposed since the pitch has no melodic meaning but defines the percussion instrument in the MIDI percussion channel. Deactivate this option if you nevertheless want to use the transposition given in the System Template to shift the standard instrument assignment in the MIDI percussion channel. This procedure is not recommended. Better use the sound maps in the *capella* System Template.
- DETERMINE VOLUME FROM: The following parameters can be taken into account for calculating the MIDI volume:
- ▪ *capella* basic volume: This parameter is set in the main program, e. g. in *capella* under EXTRAS → OPTIONS → SOUND → OUTPUT.
- ▪ System Template: With the volume setting in the System Template of a *capella* score you can balance the volume between voices of the score.
- ▪ Tab Instruments, Column Vol%: With this *capella-tune* setting you can globally balance the volume between certain instruments for all *capella* scores.

    ▪ Plug-in configuration file (*_captune.ini): With the volume setting in the plug-in configuration file (cf. page 146) you can balance the volume of instruments and articulation sounds within a VST sound library.

MIDI File Export

- USE PERCUSSION PITCH FROM PLUG-IN CONFIGURATION FILE (*_CAPTUNE.INI): Let's assume you have a triangle tone in the percussion voice of a *capella* score. In the simplest

case the tone is directly written with the pitch a'' as this pitch creates the sound of a triangle in the percussion channel of a MIDI sound card. If you play back the score with a VST sound library the note-on command is not sent to the MIDI sound card but to the VST plug-in for the triangle sound. This plug-in might expect a note-on command with a different pitch. E. g. the triangle plug-in of the *capella Vienna orchestra* requires a note-on command with the pitch c'. This is defined in the plug-in configuration file and is automatically taken into account during playback. However, in the case of MIDI file export it is up to you to decide which pitch is written into the file.

Deactivate this option if you want to create a General MIDI compatible file. In the above example the tone is saved as a'' and can still be identified as a triangle.

Activate this option if you want to use the MIDI file in a sequencer program which uses the same VST plug-ins as *capella*. Then the percussion pitch is already adjusted to the requirements of the plug-ins. However, the percussion instruments cannot be identified any more by the pitch. Instead you should use the following option to save instrument identifications.

- EXPORT SOUND AND DEVICE NAMES (META EVENT 08, 09): Sound and device names can be saved by the MIDI meta events 08 and 09 respectively. This way you can always check which device and instrument a MIDI track has been optimized for. Some older programs don't know these meta event and cannot deal with such files. In this case you should deactivate this option.
- EXPORT LYRICS (META EVENT 05): With this option you turn the lyrics export on and off. In addition you can specify whether blank characters should be appended to word ends or whether syllables within words should be hyphenated.
- TEXT CODE PAGE: MIDI files can contain only 8 bit characters. If you use foreign language text like Greek or Russian you have to specify the appropriate code page. It is used for all text elements (voice IDs, device and sound names, lyrics).
- COMBINE VOICES TO SINGLE MIDI TRACKS: Some instruments need two staves in the score (e. g. piano and harp) while in other cases two instruments share the same stave (e. g. trumpet 1 and 2). Which kind of notation is used for which instrument can be specified on the tab INSTRUMENTS, in the context menu of the column CAPELLA INSTRUMENT, sub menu NOTATION RANGE, see page 124. According to these settings *capella-tune* determines which physical instruments are contained in the score. Separate MIDI channels or VST instances are allocated for each physical instrument during playback to ensure optimal results while not allocating more resources than necessary. In a similar way separate MIDI tracks are created in the MIDI file for each physical instrument. With this option and the option below you can enforce a different track allocation mode.
- SAVE LEFT AND RIGHT HAND PIANO STAVES IN SEPARATE TRACKS: If only the audible result is important, it makes sense to combine left and right hand of a piano score to a single track, cf. paragraph above. However, the information about the hand split-

ting is lost. Activate this option if you want to import the MIDI file e. g. into another music notation program.

Preset Profiles for MIDI Options Tab

Open the PROFILES drop-down list to load one of the preset profiles.

Click ORGANIZE... to open a menu with options to create and administer your own profiles.

Click APPLY to save your changes of the current tab. If you have modified a standard profile a new profile will be created with the addition "(modified)" in the profile name. To return to the previous state click ORGANIZE → RESET TO PREVIOUS STATE.

Click OK to save the current settings on all tabs, or click CANCEL to dismiss all changes that have not yet been saved.

VST Plug-ins Explained

VST stands for *Virtual Studio Technology* and was developed by Steinberg®. VST is an international standard to generate and filter Wave sounds. A VST system consists of a host – in our case *capella-tune* – and a number of plug-ins, for example *capella Vienna orchestra*.

VST is a registered trademark of Media Technologies GmbH.

There are basically two different types of plug-ins:

- Virtual Instruments (VIs): These receive MIDI instructions from the host and in return supply Wave sounds. These Wave sounds can then be forwarded to the sound card or saved in a file. Sample libraries are an example of VIs.
- Effects: These follow the virtual instruments and can modify the Wave sounds further, e. g. add echo.

Depending on the plug-in the calculation of wave sounds can require major processor power, large working memory (RAM) and a fast hard disk.

Configure Plug-ins

The extent of functions of virtual instruments can vary considerably. Some plug-ins specialize in just one instrument while others offer a full range of instruments including articulations, like *capella Vienna orchestra* does. Unfortunately there is no common standard to describe the extent of functions of a given plug-in. That is the reason why *capella-tune* requires a configuration file that describes which sounds can be generated and which MIDI and VST instructions are used to activate these sounds.

NB: The *capella Vienna orchestra* is already fully configured for *capella-tune.* The procedure of configuration is only required for other sound libraries.

The most important steps are done via a configuration dialog. Beyond these settings there are some special settings, like release samples or velocity modes, that can only be set directly in the configuration file. For further details please see the technical documentation `captune-VST-config.pdf`.

➔ How to configure a sound library that has its own control dialog

Please ensure that the sample library has been registered with *capella-tune* (see page 128).

1. In the *capella-tune* dialog on tab PLAYBACK DEVICES click on VST PLUG-IN → CONFIGURE... at the bottom right of the dialog.
2. Open the PLUG-IN drop-down list and select the sample library to configure.
3. Click OPENED PLUG-INS and select OPEN NEW INSTANCE. The control dialog of the plug-in will open.
4. Set all options in the control dialog which are necessary to create a particular sound. Let's assume you have selected a violin sound.
5. In the dialog CONFIGURE VST PLUG-INS click CREATE CHUNK FILE and give it a meaningful name, e. g. violin.chunk. Click SAVE. All settings of the control dialog will be saved in this file.
6. In the dialog CONFIGURE VST PLUG-INS enter a description of the sound in the field DESCRIPTION. This description will be listed in the SOUND column of the INSTRUMENTS tab in the *capella-tune* dialog. You can group various instruments into sub-menus. Sub-menus are indicated by a vertical bar. For this example enter “Strings | Violin”.
7. In the USAGE group at the bottom left of the dialog right-click into the CAPELLA INSTRUMENT column and select STRINGS → VIOLIN from the options. This setting determines that this sound will be used whenever a violin is set in *capella's* System Template.
8. Click SAVE (NEW ENTRY). For each sample library *capella-tune* creates a separate configuration file where the individual instrument assignments are stored.
9. Repeat steps 4 to 8 for all instruments of the sample library.

Existing settings can be loaded by clicking LOAD SETTINGS in the CONFIGURE VST PLUG-INS dialog. You can then modify certain parameters and save again. To test the current settings click LOAD PARAMETERS INTO PLUG-IN.

Most instruments provide their own articulations. In this case you should create a new sound setting for each articulation. Do not change the description but enter a relevant name for each articulation into the respective field. In this case you could also leave the chunk file unmodified and instead enter relevant values for MIDI CONTROLLER or MIDI KEY SWITCH. These values depend on the plug-in and should be well documented by the publisher.

➔ How to configure a sample library that does not come with its own control dialog

The same principle as before applies, with the only difference that you cannot create your own chunk file. You require detailed documentation from the publisher about which parameters or which chunk files activate the individual sounds. Set the required parameters for each sound and save the sound settings as described above.

The integrated drawing program

Some elements of your score such as certain dynamics and ornaments are not included in the standard range of music symbols and therefore an integrated drawing program is included with *capella*.

Overview

Graphic objects can be anchored to notes/chords, rests or fixed barlines. Some graphic objects with special properties can be anchored to the pages (see page 151).

Graphic objects can be anchored to notes/chords, rests or runs of notes. They may also be anchored to the page, which will give them useful and different attributes. If they are anchored to a range of notes and the object has anchors at each end (a slur or crescendo for example) the graphic will expand and contract in step with the outside notes. If the note stem direction changes through transposition some graphics (e. g. slurs and triplet brackets) will rotate 180 degrees to face in the other direction. For these reasons final adjustment of graphics should be your last job.

> **NB**: Graphic objects anchored to notes will adjust their size proportionately when the size of notes (staff line gap, see page 20) changes afterwards.

Context menu. A context menu will open as soon as you right-click a graphic object. The first option on this menu will open the edit dialog, which may vary from object to object depending on the type of object. You can reach the same by double-clicking the graphic object.

Anchoring graphic objects

capella differentiates between single anchored objects and double anchored objects.

Single anchor objects are anchored to a note/chord or rest. They maintain their position relative to that note i. e. they move with the note or rest and are deleted if the note or rest is deleted.

Double anchor objects have a width that varies depending on the space between the notes that the object spans. A slur, for example, should stretch or contract to remain over the start and end note that it relates to.

Moving anchors. When you mark (click) a graphic object it displays a small red square next to its anchor note. You can move this anchor from one note to another by dragging it with the mouse. Move the mouse pointer over the red square and when it turns into an anchor press the left mouse button and drag the block to the new note.

Moving double anchors. With a double anchor the second anchor is a red framed block. It can be moved as described above. Note that the second anchor must remain in the original voice and cannot be positioned before the first anchor.

> **NB**: Moving the anchor does not automatically move the graphic as well! If required, the graphic has to be moved in a separate step; see below.
> If beginning and end of a double anchored graphic are attached to the same note the red framed square is displayed immediately to the right of the red filled square.
> *capella* remembers the number of notes spanned by the two anchors. If you delete any of these notes the graphic will shrink to fit. If you subsequently add notes the graphic will expand to the previous size. If you continue to add notes the graphic will not expand beyond its original size.

Insert graphic objects

Single anchor objects. Position the cursor in front of the note to which the graphic should be anchored.

Double anchor objects. Mark the range of notes (see page 74) and select the graphic. If the graphic object is not supposed to be resized horizontally you should anchor it to one note only.

To select the graphic to be inserted use the DRAW menu and select the appropriate option.

Mark graphic objects

Marking graphics and open context menus: Marking with the mouse. Move the mouse over the graphic. A pastel yellow box around the graphic and a green line to the anchor point will appear. Either press the left button to mark the object or right-click the object to open the context menu.

Marking with the keyboard. Position the cursor in the voice with the object. Press Tab or Shift+Tab repeatedly until the required object is marked. In order to mark objects anchored to the side with the keyboard, position the cursor in the small gray block in the top left corner of your score's first page and do the same. If no object has been marked the first press of Tab will mark the first graphic object in the current voice (the one that contains the cursor). Alternatively Shift+Tab will mark the last graphic object in that voice. With each additional press of Tab the next graphic object of the same note or the first graphic object of the next note will be marked. At the end of the staff the marking will jump back to the beginning. Using Shift+Tab will reverse the direction of stepping through the graphic objects.

Clear marking. Click anywhere outside the object or press Esc.

Copy and delete graphic objects

Copying notes with graphics. *capella* stores the graphic object(s) with the anchor note (or the first note of a run of notes and remembers the number of notes). The graphic will get lost if you delete the anchor note. If you copy a run of notes that includes an

anchor note that graphic object will also be copied, and refers to the same number of notes as in the original.

Copying graphic object on its own. Mark the graphic and copy it with Ctrl+C to the clipboard. It is now on the clipboard and you can paste it as many times as you wish by positioning the cursor in front of a note and pressing Ctrl+V.

Deleting graphics. Mark the graphic and press Del.

Shape and move graphic objects

➔ **How to re-shape and move a graphic object**

1. Mark the graphic object.
2. Position the mouse pointer on a reference point (handle) or inside the object. The pointer will change to one of the following shapes:

Mouse pointer	Meaning
Hand with pointing finger	Move the entire object
Cross	Re-shape the object by moving one of the handles
Anchor symbol	Move anchor to new anchor point

3. Drag the mouse until the graphic object has the required shape and/or position.

Moving with the keyboard. If a graphic is marked you can move it by using the direction arrows. The size of the steps that it moves can be set at menu: EXTRAS → OPTIONS → GENERAL.

> **NB:** Moving with the keyboard is useful if you want to ensure the movement is perfectly horizontal or vertical.

Constraining graphic movement. If you hold down the Alt key some graphics are constrained in their reshaping options. Lines, wavy lines, triplet brackets and crescendo/decrescendo hairpins can only be reshaped horizontally or vertically. Rectangles and ellipses are constrained to perfect squares or circles. Slurs are reshaped symmetrically.

A detailed summary of the reshaping options for each specific graphic object is listed at the end of this chapter.

Anchoring graphics to the page

In page layout view ( ) you will see a small gray block in the top left corner. This is the page anchoring point. To anchor any graphic to the page simply drag the anchor from its current anchor note and drop it on this block. You can also position the note cursor there and create a new graphic object. It will be anchored to the page from the start.

You will reach the anchoring point with the keyboard if you position the cursor in the first system and press Ctrl + ↑.

The default is that graphics that have been anchored to the page will appear on every page.

You can change this behavior at menu: Draw → Edit Object... → Pagination. This dialog allows you to restrict display of the marked graphic object to either all odd or all even pages or only the first page or except the first page.

> **NB**: You can only edit page anchored objects from the front page of the score. You will see the objects on other pages, but nothing will happen if you click on them. If you have a complicated set of graphics anchored to the page you will find it easier to display two pages side by side on the PC screen. This will give a clearer view of how they will appear when printed. Alternatively you can drop the cursor on the anchoring point and mark it with Tab.

Headers and footers. A specific headers and footers function is not required because the page anchoring system is used for this purpose. This method is more flexible, and makes it easy to place multiple graphics or text either in the header or footer area of the first page from where they will be repeated on the following pages if required; see above.

Page numbering. The "#" character becomes the current page number when it is anchored to the page as a Plain text object. You can define when and where it appears on the page at menu: Draw → Edit Object... → Pagination. You can define at what number the page numbering should start at menu: File → Page Setup....

Centering text. In order to center text on the page you should be in page layout view. Line up the small tick in the center of the text box with the small tick in the center of the margin line that runs around the page. You might also deploy the guidelines (menu: View → Guidelines) to assist you with centring text or lining up other graphic objects on the page.

Treating odd and even pages differently. If you have page numbers in your score it looks more professional to show them on the outside edges of the pages, placed differently on odd and even pages (the right side for odd pages and the left side for even pages). To do this enter the "#" twice on the first page - on the left and on the right. Right mouse click on each one in turn. Set the properties of the right hand one so that it only shows on odd pages and vice versa for the left one.

Relative positioning of graphics

Access menu: Draw → Edit Object... → Position for any note-object-related graphic object to determine how the object moves whenever the anchor note/chord or rest moves.

Horizontal. The drop-down list offers two options:

Position	Meaning
Notes	The horizontal distance between the note and the object remains unchanged.
Stems	The horizontal position refers to that of the note stem, i. e. depends on the stem direction.

Vertical. The drop-down list offers five options:

Position	Meaning
Staff line	The vertical position remains unchanged even if the note pitch (or the chord) changes, because it relates to the staff and not the note.
Outermost note	The vertical position is linked to the outermost note of the chord, i. e. the note that is furthest away from the stem.
Innermost note	The vertical position is linked to the innermost note of the chord, i. e. the note that is closest to the stem (same as outermost note for single notes).
Stem end	The vertical position is linked to the stem end.
Above	With stem direction upwards same as stem end, otherwise same as outermost note.
Below	With stem direction downwards same as stem end, otherwise same as outermost note.

Example 1. If a graphic object is always to be positioned at the stem end (also after transposition etc.) set the horizontal position *stem* and the vertical position *stem end*.

Example 2. If you insert a volta bracket in *capella* 7, the vertical position is preset to "above" and the minimum distance to five staves. This is to prevent notes and staves from overlapping with the volta bracket during transposition up or down.

Adjust to position of notes

Graphic objects with two anchors (ties, volta, triplet and octave brackets, trill wavy lines, crescendo/decrescendo hairpins) can automatically be adapted to the notes. They will always be correctly displayed after transposition or after change from single voice view to score view. These objects can also be manually adjusted. After having done so you will not want to apply automatic adjustment any more. After manual adjustment of tie shape, end position of crescendo/decrescendo hairpins or brackets *capella* will therefore tick "do not adjust automatically to position of notes". Via the context menu

you can still adjust the object to the position of the notes. However, this object will now be left out during transposition, in change to single voice view and in menu DRAW → EDIT OBJECT... →ADJUST TO POSITION OF NOTES.

Conditional display of graphic objects

Access menu: DRAW → EDIT OBJECT... → VISIBILITY for any note-object-related graphic object to determine under which specific conditions the object should be visible, e. g. conditions might change due to a transposition.

By skillfully combining conditional appearance with a range of graphics you can create an "intelligent" graphic that changes its appearance to suit the circumstances. It could be useful to apply this to articulation signs, for example.

Can be suppressed for voice extraction. In order to freely format voice extraction you can suppress each graphic object in score view or in voice extraction. Deactivate one of the visibility checkmarks and click OK. *capella* will then offer to create a copy of this graphic object for the other display mode. If you accept this, you can position the object differently in both display modes or set different font sizes.

> For graphic objects anchored to notes, visibility is set on the tab VISIBILITY. For graphic objects anchored to the page, visibility is set on the tab PAGES.

Layering graphic objects

capella draws notation and graphics on separate layers. The layers are like transparent films, which means that you can swap them about so that notes are in front of graphics or vice versa.

In the chronological order of writing a score graphic objects are usually added after the notes onto the layer above the notes (covering the notes). If you want to place graphic objects behind the notes (on the lower "film"), e. g. to underlay the staff with a colored background, you can access menu: DRAW → EDIT OBJECT... → POSITION and set a check mark for **Behind the notes**.

NB: If you move an object that is layered above the notes down to another system without moving its anchor it will appear behind the notes. This happens because *capella* sequentially draws a new system without graphic objects, then draws the graphic objects above the system. In this case, however, the graphic object is already drawn as part of the first system to which it is anchored (because the first system is drawn before the second system) and its notes are drawn on top of the graphic object.

Always make sure that graphics are shown in the system that they are anchored to, otherwise you will not have full control of them and they may get lost between pages.

NB: To prevent expansive objects that are positioned behind the notes from interfering with mouse navigation their area for selection is limited to a narrow band along the edges.
The options for conditional visibility are not available if the graphic is on the layer behind the note.

Overlapping graphic objects

If you overlap a number of graphics that are attached to the same note and are all either in front or behind the note they are layered in the order they were added to the page, with the first graphic being at the bottom and the last at the top of the pile. You can change this order at menu: Draw → Ordering and one of the sub-commands To Background, To Foreground, One Layer Up or One Layer Down.

Grouping graphic objects

Several graphic objects that are anchored to the same note can be combined into a group. This group can then be moved, deleted, copied to the Gallery, etc. as a single object. To edit the individual parts of a group they have to be ungrouped first. Several groups can be grouped together.

NB: Graphic objects that are anchored to different notes cannot be grouped. This would lead to logical conflicts: If you later modify the distance between the anchor notes the order of the group would also have to change.

➔ **How to combine graphic objects into one group**

1. Mark the first graphic object as described above.
2. Mark additional graphic objects as above while holding down the Shift key.
3. Select menu: Draw → Ordering → Group.

➔ **How to ungroup combined objects**

1. Mark the group as described above.
2. Select menu: Draw → Ordering → Ungroup. This command is also accessible from the right-click context menu.

The Gallery

If you want to re-use the same graphic object or group of objects repeatedly in the score you can save time by adding it to the Gallery. The Gallery is a folder containing graphics that can be inserted into the score. Each score has its own Gallery file. You can save the Gallery file you have built up with a score so that it can be imported into other scores. You can combine Gallery files, and by deleting and sorting the order of objects you can create a new one tailored to an individual score.

NB: *capella* comes with a collection of different Gallery files. During installation they are placed into the *Galleries* folder inside your personal *capella* folder (see page 38).

The Gallery can contain transposing symbols. These change appearance when the note they are anchored to is transposed. Guitar fret diagrams or chord descriptions are good examples of these.

To access the Gallery select menu: DRAW → GALLERY or click  on the drawing toolbar.

The available **Objects** are listed:

- The symbol in front of the name indicates the type of object.
- The name can be freely changed.
- The Key column lists the keyboard shortcuts that can be used to insert the graphic object into your score.

The buttons below the preview window allow you to change the sequence of objects in the list, thereby changing the shortcut key allocations. You can also Delete or Rename individual objects, export the entire list into a `*.cag` file or import a `*.cag` file. The existing objects remain untouched when you import additional objects. This way you can import from several Gallery files and then use Delete, Rename and Move up or Move down and Save to create your own personalized Gallery file.

Using the Gallery

Copying graphic objects to the Gallery. Mark the graphic and select menu: DRAW → COPY TO GALLERY.... The command is also available from the right-click context menu of the graphic object.

Pasting an object from the Gallery to a note. Position the cursor to the left of the note, click on the object in the Gallery and click Insert.

Transposable symbols

Symbols such as fret diagrams and chord descriptions can be made to change appearance when the note to which they are anchored is transposed. You can create your own transposable symbols if you do not find a suitable one in the Gallery folder.

Creating transposable symbols is somewhat laborious because all sorts of key signatures have to be considered, but application is very easy. You can make your Gallery files available for free distribution, contact us on *www.capella-software.com*.

NB: The supplied *Chord symbols* script automates the production of transposable symbols for most common cases.

Expert users only: Creating transposable symbols

➔ **How to create a transposable symbol**

1. First decide which of these two cases applies to your symbol:

a) Need to distinguish between harmonic equivalents. For example G#7 and A flat7.

b) Do not need to distinguish between harmonic equivalents. For example fingering instructions for the guitar do not need to distinguish between G#7 and A flat7.

2. In the case of (a) type 21 identical notes, or in the case of (b) type 12 identical notes.
3. Draw the 21 or 12 stages of your graphic, moving in the circle of fifth steps as follows:

a) F♭, C♭, G♭, D♭, A♭, E♭, B♭, F C G D A E B F♯ C♯ G♯ D♯ A♯ E♯ B♯

b) A♭, E♭, B♭, F C G D A E B F♯ C♯

4. Mark all 21 or 12 notes.
5. Select menu: DRAW → TRANSPOSABLE SYMBOLS → CREATE...
6. If everything has gone according to plan you will see a message stating that this is an *Expert Function* and if you are unsure of what you are doing you should read the manual. If you are happy that you understand the process click OK to continue. The Gallery dialog box will open with a single new entry, which represents the whole set. Click Rename to assign a meaningful name and click Close.
7. Close the dialog box by clicking Save everything.

NB: If your symbols differ only slightly between steps you can take this shortcut: Copy the first symbol to the Gallery, assign it from there to all other notes and then do the changes.

➔ **How to edit a transposable symbol afterwards**

1. Enter one note more than the number of steps required for your symbol i. e. 22 or 13 notes.
2. Assign the transposable symbol (in any step) to the first note.
3. Position the cursor to the left of this note.
4. Select menu: DRAW → TRANSPOSING SYMBOL → LINE UP... The steps of your symbol will now be assigned to the remaining 21 or 12 notes.
5. Edit the steps.
6. Create a new transposable symbol as shown above and delete the old one.

Using transposable symbols
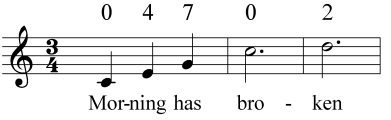
When you insert a transposable symbol a dialog box appears in which you select the reference note.

capella will do the rest. During transposition the transposing symbols will automatically transpose as well. i. e. each symbol will be replaced by the variant that refers to the transposed reference note.

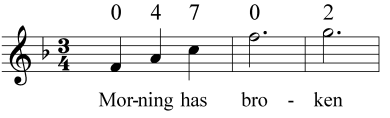
A practical example

NB: In practice you will probably want to use chord descriptions or guitar fret diagrams. For simplicity our example uses straightforward numbers.

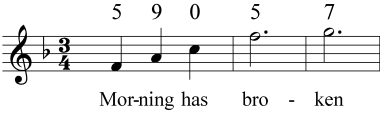
Let's assume that for didactic reasons you have numbered the 12 keys of an octave on the piano keyboard from 0 to 11 and you want to position above each note the corresponding number:



If you enter the numbers as text elements and then transpose up by a fourth the result will look like this:
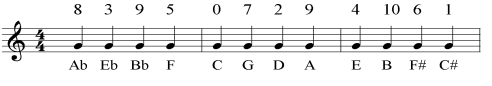


You now have to manually change all numbers because the tune is supposed to look like this:



These numbers therefore should not be fixed text elements. You need matching transposing symbols.

Type the staff as shown:
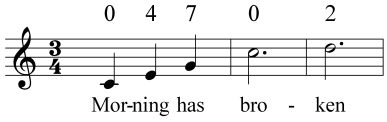


Create the numbers as Plain text. To ensure that they all line up at the same height above the staff copy the first number to the clipboard then paste it to the remaining 11 notes (see page 150) and edit them one by one. The text below the staff has been entered as Lyric text and only serves as an aid.

Mark all 12 notes and select menu: DRAW → TRANSPOSING SYMBOL → CREATE. Confirm the remark about the expert function with OK.

The Gallery dialog opens and shows a new item called “transposable” at the end of the list. Click this entry and click Rename. Assign a meaningful name and then close the dialog.

Apply the transposable symbol:

Type the staff with transposable numbers by adding to each note the transposable symbol that you created above.



Position the cursor to the left of a note and access menu: DRAW → GALLERY. Select the required symbol. After closing the dialog you are prompted to select a reference note. Select C for the first note and then E, G, C, D. If you now transpose the tune you will see that the symbols are adapting correctly during transposition.

Graphic objects in detail

The following descriptions do not cover the **Position** and **Visibility** tabs of the edit dialog, as they have already been dealt with in detail above.

Color can be applied to all graphics. Rectangles, ellipses and polygons can have their frame color and filling color specified separately. The frame weight can also be specified.

These points will not be repeated for each graphic below.

Using the clipboard

You can use the clipboard to copy and paste sections of a score as metafiles (see page 166). You can copy and paste from the current score or from any other *capella* score. These can be pasted into another score as freely positionable pictures. They have the advantage of showing very clear detail, because metafiles use original fonts and redraw lines etc. An example would be an ossia.

Menu	DRAW → PASTE FROM CLIPBOARD
Anchor	single
Handles (reference points)	Moving any of the handles in the four corners does not change the aspect ratio.

Freeform text

See also page 84.

Menu DRAW → FREEFORM TEXT...

Anchor single

Handles at top left and top right (to change the width). Height adjusts automatically.

The text paragraphs are automatically re-formatted to fit the new size of the text frame.

Plain text

See also page 84.

Menu DRAW → PLAIN TEXT...

Anchor single

Handles none (can only be moved, not resized)

Edit dialog Font, music symbols (font capella3), bold, italics, underlines, bigger, smaller, left justified, centered, right justified, frame, insert music symbol, new staff.

If you have selected *frame* you can define details on the tab *frame* (page 161).

Guitar fret diagrams

A freely configurable guitar fret diagram for plucked instruments.

Menu DRAW → MUSIC NOTATION → GUITAR DIAGRAMS

Anchor single

Handles none (can only be moved, not resized)

Ready-made guitar diagrams can be found in one of the Galleries.

Line

A straight line.

Menu DRAW → GEOMETRIC OBJECT → LINE

Anchor double

Handles at beginning and end of line

For truly horizontal or vertical lines hold down Alt while drawing the line with the mouse.

Rectangle, ellipse

Menu — Draw → Geometric Object → Rectangle
Draw → Geometric Object → Ellipse

Anchor — single

Handles — none (can only be moved, not resized)

Edit dialog — *Shape*: Select from ellipse, circle, rectangle and rectangle with rounded corners and selectable radius.

With frame: For Plain text you can activate/deactivate the frame. In this case you cannot shape the frame with the mouse but only define the distance to the text (*page 160*).

For a perfect square or circle hold down Alt while drawing the object with the mouse.

Triangle, polygon

A closed polygon. If the corners are drawn in such a way that it cuts through itself, it will be filled with a checkered pattern.

Menu — Draw → Geometric Object → Triangle, Polygon

Anchor — single

Handles — one for each corner of the triangle/polygon

The menu selection prompts for the required number of corners. *capella* then creates an even object with the set number of corners.

Edit dialog: The **Transform** tab serves to assist with the exact positioning of the corners and modifying the shape:

Corners: The object will automatically assume an even shape whenever the number of corners is changed.

Shape: Select an option to automatically change the object into an even polygon or into a star.

Scale: Horizontal and vertical dimension of the object can be modified. Leaving the value of “100” in the right column will cause the values in the left column to be equivalent to per cent values.

Rotate: Enter required rotation in degrees from -359 to 359.

Mirror: Select one of the three options: none, across a horizontal axis (up/down) or across a vertical axis (left/right).

Scale, Rotate and Mirror are linked to the arithmetic center of the polygon. If several options have been modified they will be executed in the sequence of the dialog.

Staff lines

A set of 5 staff lines can be used e. g. to re-create a staff where it has been partially covered by a white square. To ensure correct lineup, vertical movement is restricted to match the staff settings in the score.

Menu Draw → Music Notation → Staff lines

Anchor double

Handles beginning and end

Edit dialog: The same modifications can be made as with normal staff lines.

Slur

See also page 69.

Menu Draw → Music Notation → Slurs

Anchor double

Handles Use the handles at both ends to adjust size and inclination of the slur. The shape of the slur remains intact. The two off-line handles determine the curvature. Holding down Alt while moving the off-line handles ensures that the slur remains symmetric.

Edit dialog: The **Line Weight** tab sets the type of line, the weight and the parameters for dashing. Spacing of "0" or dash length of 100% will cause the line to be continuous. Other settings will create a regularly broken line.

> **NB:** Dotted slurs can be useful for multi-verse songs with varying melisma.
> Dotted slurs are pixelated when exported as part of a Metafile! The restrictions described for Freeform text (white background and RichTextPatch settings in the file capella.dat (see page 86) apply to them, too.

Crescendo, decrescendo

Crescendo or decrescendo hairpin.

Menu Draw → Music Notation → Crescendo
Draw → Music Notation → Decrescendo

Anchor double

Handles beginning and end

To maintain true horizontal alignment hold down Alt while resizing the object.

To maintain a uniform appearance throughout the score the opening of the hairpin can only be edited via the context menu: Edit.

Triplet bracket

See also page 80.

Menu Draw → Music Notation → Triplet Bracket

Anchor double

Handles beginning and end

Repeat box

Menu Draw → Music Notation → Repeat Box

Anchor double

Handles beginning and end

To maintain true horizontal alignment hold down Alt while resizing the object.

In most cases *capella* will automatically choose the correct shape: A new repeat box is usually numbered 1. and closed at the end. A repeat box that attaches to an existing one numbered 1. will be numbered 2. and only closed at the end if no more notes are following.

An optimal horizontal positioning of the repeat box edges is typically achieved, if they are bound to a fixed barline (cf. page 149). In most cases, you will have to insert a new fixed barline at the beginning of the first box, which would not be necessary otherwise. The same applies for the end of the second box. Mark the notes including the new fixed barlines, and choose Draw → Music Notation → Repeat Box.

The context edit dialog allows you to set the type of numbering and closing and the line style.

Octave-shifting passages: In all program versions before *capella 7* these had to be assembled by an 8^{va} symbol followed by a broken line that is pointing downwards at the end. You will find such formations in older scores!

Octave bracket

Menu Draw → Music Notation → Octave bracket

Anchor double

Handles beginning and end

Wavy line

Menu	Draw → Music Notation → Wavy Line
Anchor	double
Handles	beginning and end

To maintain true horizontal or vertical alignment hold down Alt while resizing the object.

Two types of wavy lines are available:

Trill wavy line: Horizontal with option to add the *tr*-Symbol at the beginning.

Freely movable and adjustable wavy line: A wavy line that can be freely rotated and stretched for use with arpeggio or glissando notation.

NB: If you regularly use arpeggio signs you might want to add one to your Gallery.

Music symbols

The font file `capella3.ttf` is used by *capella* to display notes. The music symbols that are contained in this font can also be used in any text object.

The music symbol palette

To quickly insert a single symbol of the *capella* font in the correct size matching your score, use menu: Draw → Music Symbol... or click on the drawing toolbar. A dialog will open with several tabs full of symbols. Amongst others you will find playback instructions like Trills, Fermata, Pedal symbol and Dynamic symbols (forte, piano etc.).

You can access the music symbol palette in three different ways (always via the same icon):

Individual **symbol**. Use menu: Draw → Music Symbol... to directly open the palette. Select a symbol and *capella* will automatically create a Plain text object. You can subsequently edit this object like all other Plain text objects, e. g. adding more symbols.

Symbol in Plain text dialog. The toolbar of the Plain text dialog displays the icon. Click it and the palette dialog will open from where you can select any symbol to insert into your Plain text. **Warning**: Because Plain text can only be formatted in one font at a time the entire text will be with the `capella3.ttf` font in matching size.

NB: You can create unusual dynamic symbols like “sffz” using the Plain text dialog, where you can build up the symbol from several individual symbols. See also page 194 for a listing of all symbols. This list also contains several blanks with varying widths to adjust the spacing between symbols.

Symbol in Freeform text. The toolbar of Freeform text also displays the icon. Click it to open the palette dialog and insert a single symbol into your text. It will be formatted

with the `capella3` font, while the rest of your text remains unchanged. The symbol size will not automatically be adjusted to the height of the staff.

Exchanging data with other programs

Text exchange

All text that you handle through the **Plain Text**, **Freeform Text** and **Lyric Text** windows can be copied and pasted to other programs via the clipboard. Only the Freeform Text window will preserve formatting from other programs. Text destined for lyrics must be pasted into the **Lyric Text** window.

➔ **How to paste text from a word processing program into the Lyric Text window in *capella***

1. Mark the text in the word processing document and copy it to the clipboard with Ctrl+C.
2. Switch to *capella* and open the **Lyric Text** dialog via menu: Extras → Lyrics → Edit in Window...
3. Press Ctrl+V to insert the text from the clipboard.
4. Insert / at the appropriate positions in the text to split syllables to match up with the notes in the score.

Graphics import

You can import graphics from other programs provided that the other programs support copying or exporting to the clipboard in Windows Metafile or Enhanced Metafile format (WMF and EMF).

NB: A tip for copying to *capella* is to copy and paste the graphic into Word and then to copy and paste from Word to *capella*.

➔ **How to import a graphic object**

1. Mark the object in the source program and copy it to the clipboard.
2. Switch to *capella.*
3. Position the cursor to the left of the note to which you want to anchor the object.
4. Select menu: Draw → Paste from Clipboard.

The object will be inserted at and anchored to the cursor note and can be freely moved and/or stretched (see page 151).

Publishing with *capella*

If you would like to publish your *capella* scores you can choose one of the two following ways:

- Complete production from within *capella*
- From a desktop publishing program using extracts copied from *capella*

Complete production from within *capella*. This is the recommended method for users who mainly produce sheet music and song booklets. In these cases the music is the main content of the page and any text or outside graphic objects are just trimmings (see page 149).

If you want your work to be printed at a commercial printer you can either export all pages in TIFF format (see below) or print to file using a PostScript printer driver.

Make-up in a desktop publishing or graphics program. If you are producing a document which is primarily text, with music to illustrate points, then you are better served to use a word processor, desk top publisher or graphics program to produce good text layouts. The music examples can be imported as bitmaps from *capella*.

Overview of graphic export. *capella* lets you export parts of the score in a wide range of bitmap formats (GIF, PNG, BMP, TIFF and JPEG) or as vector graphics (Windows metafiles).

	Bitmap	**Metafile**
Export target	File	Clipboard
Quality	Variable	Reasonable; depending very much on the importing program
Memory requirement	Relatively high	Relatively low
Portability	All except BMP universally supported	Windows-specific format

There is also the option of using the PostScript format.

Bitmap export

You can export an entire page (including or excluding the margin), a system or the contents of the current window on the score. You can specify the quality and use any of the formats listed below:

Format	Description
GIF	Very compact format limited to 256 colors. Recognized by all web browsers.
PNG	Advantages over GIF: All colors are recorded correctly but the file size is a little larger. Some older browsers cannot recognize this format.
BMP	Microsoft specific format. Not portable and very high storage requirement. Cannot be used on web pages.
TIFF	Portable format often used by commercial printers. Good compression, especially using the LZW compression in *capella*. No image degradation from compression, unlike JPEG compression. Cannot be used on web pages.
JPEG	Quality is lost during compression and it is best suited to soft transitions between objects and high numbers of colors e. g. photographs. Quality can be adjusted during export with a slider. It offers the best compression with photographic images and you can decide on the trade off between compression and image degradation. Not usually suitable for score export, as scores have sharp transitions between objects and limited colors - black! Could be used if score contains photographic type images. Recognized by all web browsers.

➔ **How to export a score as a graphic**

1. Position the cursor on the system or anywhere on the page that you want to export.
2. Select menu: File → Export → Bitmap Graphics File... A dialog opens.
3. In the **Source** group select which part you want to export.

   NB: If you want to export several systems but not an entire page, or if you want to modify the layout of the systems for export, you should use menu: File → Save Marked Systems...
4. Under **Target** select the required format. If you select **JPEG** you will activate a slider with which to set the **Quality**. The lower the quality the smaller the file. If you pick a very low quality you should check the score extract, as although the file size will be very small there will definitely be a noticeable drop in quality.
5. For exported files *capella* automatically suggests the current file name and adds an appropriate extension to the current name, e. g. `.jpg` for JPEG, `.tif` for TIFF,

etc. in place of the `.cap` of a normal score. If there is already a file of this name a number will be added to the file name to distinguish it. If you prefer to assign a different name to the file click ≥ to open the file save dialog.

6. Select the correct resolution for your printer. This is expressed in dpi (dots per inch). From our experience 150 dpi is clear and easy to play from. In PNG format this takes about 150 Kb per page and in GIF format 100 Kb. If you want the best quality pick one of the higher resolutions that your printer can work with. Note that 600 dpi produces a file size of about 1 Mb per page!
   The current screen display does not influence the export quality.
7. If you want to modify an existing exported file you can do this through the command line window. This is an Expert Function and covered in the developer manual, see page 19. An example of use is to change from RGB to CMYK color coding.

To import a *capella* extract to another program you may need to read the relevant documentation of the target program.

As an example Microsoft Word or OpenOffice would require you to use menu: INSERT → PICTURE → FROM FILE... .

Often you can select "Link to file" or "Insert object". Choosing this reduces the size of the destination file as the bitmap is not saved in it. It is loaded to it each time the document is opened. This also ensures that the latest version of the bitmap is imported - but you must not delete the original export or move it to another folder!

Troubleshooting. If the exported graphics file shows the top and bottom sections to be cut off, switch on color information ( ) to inspect the spatial limits of the system. Only the height that is covered by the gray bars at the far left will be exported. To adjust the height of these bars access the SystemTemplate ( ) and click to increase the **Spacing** above and below the staff.

PDF export

If you want to forward your score to a commercial printer or a service bureau you may be required to submit a file in PDF format as opposed to TIFF format. Although *capella* does not provide its own PDF export function you can use any of the commercially (e. g. Adobe Acrobat Distiller) or freely available (e. g. pdfFactory or pdfCreator) PDF-tools. In these cases exporting is as easy as printing. Before you proceed you should discuss details like resolution, color depth, etc. with your service bureau.

Vector graphics export (Metafile)

Use menu: FILE → EXPORT → WINDOWS METAFILE TO CLIPBOARD... to copy the visible content of the currently active window to the clipboard, from where you can paste it into other programs.

NB: The Windows Metafile specification offers the potential to create small but scalable files which do not have the jagged edges that bitmaps have when saved as small files. Unfortunately the original Metafile specification published by Microsoft was not clearly defined and many programs are not able to successfully open Metafiles exported from other programs. Microsoft's answer was a new standard, the Enhanced Metafile. Unfortunately this is not implemented in all software. To get around this problem *capella* automatically takes a copy in both formats to the clipboard. You can choose which version to paste into the target program.

Paste Metafile. To paste a Metafile into another program (e. g. word processor or graphics program) you use Ctrl+V in the target program. Some programs use menu: EDIT → INSERT or menu: INSERT → FROM CLIPBOARD. Programs that can handle both Metafile formats will indicate this on their INSERT menu.

Some examples:

Word	Knows both formats. Menu: EDIT → PASTE SPECIAL...
CorelDraw	Offers both formats; enhanced Metafiles are not properly displayed.
WordPad	Part of Windows standard installation; only recognizes standard Metafiles.
capella	Knows both formats: can naturally re-import its own Metafiles (menu: DRAW → PASTE FROM CLIPBOARD).

Selecting the area to extract. To display the exact area that you want to extract as a Metafile you should select an appropriately low zoom level. Then adjust the window size and use the horizontal and vertical scroll bars to display the required area.

The quality of the extract depends for some programs on the size of the staves (setting in SystemTemplate) but not on the selected zoom level in *capella*. Therefore if you want to extract a large area you should zoom out to display the entire area in the window.

Troubleshooting. If the quality of the import into your target program is less than satisfactory please note these tips:

- Some programs encounter problems with the cut-off graphics that stretched beyond the window in *capella* when the extraction took place. Remove the checkmark at **Clipping for objects outside the window** in the **Windows Metafile Export** dialog. Then delete the invisible parts of the score before the export and if necessary undo the deletion after the export.
- See whether an increased staff line gap will improve the quality. For smaller areas you can also remove the check mark at **Export size 100%** in the **Windows Metafile Export** dialog and then set a zoom level of more than 100%.
- In some cases it might help to export the graphic into another program (e. g. Word) before re-exporting from there into the final target program.

Publish score as website (HTML export)

Even if you are an experienced website publisher *capella* will assist you by taking over the routine work.

With this function the score will be exported as PNG raster graphics file and as MIDI file. All three files will be integrated into a HTML document which you can redesign with HTML editors. You can also make Pdf files available on the Internet (also see page 169). Many website publishers offer support to upload such files.

➔ **How to create a website from your score**

1. Open the score that you want to export.
2. Select menu: FILE → EXPORT → HTML FILE (WEBSITE)... or click .
3. If required change the target file name of the **HTML file**.
4. At **Folder for additional files** you can enter a folder name that should hold additional files (e. g. pictures for the individual pages of your score) that your HTML file will need to access. This folder will be created inside the folder of the HTML file. The folder name therefore cannot contain a backslash (\) character.
5. The three text fields in the center of the dialog allow you to enter additional text that will be displayed on your website.
6. In the lower section of the dialog you can select a color scheme, the typeface and the resolution. The higher the resolution the more space your graphic will take up on the monitor.
7. The drop-down list **MIDI Playback** offers a choice of playback settings:
   - "None"
   - "Plain (link only to MIDI file)": *capella* automatically creates a MIDI file from your score and places a link to this file onto your website. If a visitor to your site clicks this link the Windows Media Player will open and play back the file. This works with all known browsers.
   - "With control bar": *capella* automatically creates a MIDI file and places an audio control bar with Start, Stop and Pause buttons and volume control onto your website. This is the most elegant solution, but depending on the browser the visitor might be required to first download a plug-in to hear the score.
1. Click OK, and *capella* will do the rest.
2. Upload the result to your web server. You will need the FTP-access information from your Internet service provider. Remember to also upload the folder with the additional files.

Exchange MIDI files

MIDI (Musical Instruments Digital Interface) is a widely used communication format for the transmission of notes between electronic musical instruments and for the digital storage of music. It is in effect a program that soundcards read in order to synthesize music. The quality of the playback is dependent on the sounds that the soundcard can synthesize.

The MIDI format encodes the sound only. Any score layout information that goes beyond the pure tonal information is therefore lost.

Almost all note editors and sequencer programs can read and write MIDI files.

NB: capella-software AG publish the very sophisticated yet user-friendly sequencer *capriccio*.

MIDI import

In order to import a file in MIDI format 1 or in MIDI format 0 select File MIDI Import and enter the required data in the dialog box. The quality of the result depends largely on the value of the shortest note. Indicate the smallest value which is to be considered in the analysis. The smaller you set this value the closer the sound of the imported notes will be to the original, however there is more chance of getting grossly misleading notation results from carelessly recorded MIDI files.

MIDI export

To convert a *capella* file to MIDI format 1 you need to open the file. Then select menu: File → Export → Midi File... There you may suppress lyrics export via the file type selection.

Your settings for *capella-tune* will influence the export process.

- **Volume** and **Attack Intensity**: See page 124 and page 131.
- **Playback Device**: Some VST sample libraries (e. g. *capella Vienna orchestra*) require specific MIDI controllers and percussion sound maps in order to activate the correct sounds. These controllers and sound maps are stored with the MIDI file if you use the sample library as the **Playback Device** (see page 124). These MIDI files are intended to be further processed in a sequencer (e. g. *capella* software's *capriccio*) with the same sample library. If you want to create a MIDI file for general use you should first set the **Microsoft MIDI Mapper** as your playback device.
- **Split and join voices**: Open the *capella-tune* dialog (Shift+Ctrl+J) and select the **Instruments** tab. Right-click in the ***capella*** **Instrument** column and select Notation Range from the context menu. From the sub-menu select the voices to be combined into one MIDI track. You can repeat this action for all instruments separately. This allows you to split a two part trumpet staff into two separate

tracks, while at the same time combining all left-hand piano voices – or even both hands – into one track.

- **Lyric text**: The first verse will be used. For repeats the next verse will be used.
- **More MIDI options**: See page 144.

capella file formats

With *capella 7*, the preferred file format in which all properties of a score can be saved is CapXML 2.0. Other available formats are „CapXML 1.0 (until 2008) (*.capx)“ and „*capella* file (until 2008) (*.cap)“. When saving a file in capx 1.0 and cap it will be checked whether properties of the score will get lost. If this is so, you will be warned and the file will remain marked as “not saved since the last change”. This warning also contains the offer to directly save in current CapXML 2.0 format.

Owners of *capella* 2008 are able to open CapXML 2.0 files, but the score properties added in *capella 7* will not be displayed. German special characters such as a, o, u umlaut and ß will not be displayed correctly, and graphic objects with two anchors including a fixed barline will be displayed too long. *capella 2008* users should use the most recent stepup, at least version 6.0-19.

Compared to CapXML 1.0, CapXML 2.0 offers a number of additional elements and attributes for the advanced properties of *capella 7* scores. Furthermore, CapXML 2.0 scores are always coded in Unicode (Utf-8). This means that for foreign characters, be they Greek, Cyrillic or Hebrew, no additional information is needed as to the language area they come from. For you this means that you are able to directly insert any special character to Lyrics or Plain text or change the input schema for your Windows keyboard (see also page 91).

Detailed information about the differences between CapXML 1.0 and CapXML 2.0 is available in the developer kit (see page 19).

MusicXML

MusicXML is a notation format promoted in the US which is not suitable for all of *capella's* subtleties. Also, it disposes of a structure adapted to properties of older binary formats instead of *capella's* object oriented CapXML structure. MusicXML is supported by several well-known notation programs.

MusicXML import

capella is able to read MusicXML files. You select file type MusicXML in the file selection dialog. You can also drag a MusicXML file with the mouse into the *capella* window. Opening of a MusicXML file by double-clicking its name in Windows Explorer is not possible. MusicXML import can also be done – as in *capella 2008* – via File → MusicXML

IMPORT. *capella* will remember the directory name of the last MusicXML file regardless of the directory name of those files opened via “File – Open”.

MusicXML files have the extension xml or mxl. The following versions exist: 1.0 (Jan. 13, 2004), 1.1 (May 20, 2005) and 2.0 (June 18, 2007). mxl exists in version 2.0 only. mxl files are xml files packed in zip format. All MusicXML files can appear as "score-part-wise" or "score-timewise" versions. However, "score-timewise" is created with relatively uncommon software only. Most important sources for MusicXML files are the notation software programs Finale and Sibelius. After having imported the file you will find several details about it in “File – Info – Comment”. Some of these details will not be directly analyzed by *capella*.

When importing data from external programs it may occur that not every information included in the files is analyzed. Here is a list of details which are not correctly analyzed:

1. Paper size

In *capella*, the paper size setting depends on the connected printer. In MusicXML, this information may be contained in the file itself. In this case it will be adopted during import and the information will be given to the printer. Paper size is also saved as text in the comment (see “File – Info – Comment”). If such a file is saved in *capella* format and is then opened again, no automatic adjustment of the paper size setting will be done. Information in “Comment” remains. If the paper size is not supported by your own printer we recommend a virtual printer, for example PDFCreator in order to have a good look at the score's page view.

2. System breaks

A MusicXML file does not always contain all system breaks. If note objects are drawn beyond the right window border we recommend manual breaks or adjustment via “Extras – Score division”. An automatic definition of optimal system break positions including breaks already existing in the file has not yet been implemented.

3. Lyrics syllables tied to rests

capella cannot tie lyrics syllables to rests whereas MusicXML can. During import, such lyrics syllables are ignored without comment.

4. Slurs over different voices

In MusicXML it is possible that the beginning of a slur is tied to a note in one voice and the end is tied to a note in another voice. This occurs in piano runs over large interval distances where the melody starts in one hand and ends in the other. In such cases a slur is imported which starts and ends at the same note.

5. Slurs over different systems

In *capella*, slurs musically exceeding system borders are represented by two different objects whereas in MusicXML they are represented by a single one. The current version

MusicToCap is not yet capable of automatically creating the data object for the following system.

6. Chord symbols, guitar frets

Are not yet imported.

7. Bar numbering

In incomplete bars, bar numbering in *capella* differs from bar numbering in MusicXML ab.

8. Notation in neighboring staff

capella can only note whole chords in neighboring staves (typically for piano runs over large interval distances) and not single note heads. If at least one head of a chord is to be noted in the neighboring staff, then the whole chord will be notated there.

When writing eighth notes or even shorter notes in neighboring staves, cross-staff beams are used which are positioned between the note heads of the different staves. The current version of MusicToCap is not yet capable of importing such cross-staff beams. You will have to correct this manually (Also see Beam / cross-staff in the *capella* user manual).

9. Tablature

Staves with less or more than five lines (tablature, percussion) are not imported correctly.

10. Tempo directions

Tempo directions (note = bpm) are imported without bracket.

MusicXML export

To export a *capella* score to MusicXML format open the file and access menu: File → Export → MusicXML and set the appropriate check marks.

> **NB:** Always save your scores in *capella* format because of the compromises required by the MusicXML format!

CapXML tree structure view

Select menu: View → CapXML Tree Structure to see the logical structure of the current score. A dialog displays all CapXML information in a clear graphic layout.

To access this structure directly proceed as follows:

1. Export the score in CapXML format.
2. Rename the extension of the exported file from `.capx` to `.zip`.
3. Unpack this file and open the resulting `score.xml` file with a plain text editor.

4. Minor modification can usually be achieved via search and replace. For more complex tasks it is recommended that you write a conversion script with *Python*. You can save yourself a lot of work if you use the standardized XML libraries (e. g. SAX or DOM).
5. When you have finished applying changes you must pack `score.xml` back into the `.zip` file, rename it back to `.capx` and then open it in *capella*.

NB: Detailed information about this issue is available in the developer kit (see page 19).

Using scripts

This chapter familiarizes you with the use of *capella* scripts.

What is a *capella* script?

Throughout its years of development *capella* has been adapted to meet the requirements and fulfill the wish lists of its users. However some of these wishes were so exotic that they tended to drop off the list due to time and cost constraints.

To offer ambitious users the opportunity to adapt *capella* to their *exotic* requirements we have added a programming interface to *capella* that allows you to add new functions and features with the help of *Python*. *Python* is an easy to learn script language that can be freely downloaded from the Internet. Although we expect only a relatively small number of users to graduate to *Python* Expert level, many of those who have written scripts have made them available to all other *capella* users via their own website. Gradually a treasure trove of fascinating scripts has evolved and they are now freely available.

NB: There are flowing transitions between the two extremes of normal user and programming expert. Many users might be interested to take a look at some of the scripts and they may find that they can do some minor adjustments even without fully understanding *Python*.

Since the introduction of Vista, Windows consequently distinguishes between programs and user data. For programs, the highest possible virus protection standards are to be achieved, whereas the user himself is responsible for all user data. *capella* scripts are a bit of both program and user data: They are programs allowing the complete access to the user's computer, and are also to be edited by the user without interfering with another user who might be using the same computer at a different time.

capella takes this into account by saving all scripts included in the installation into a subdirectory of the installation folder (data/scripts), which is an area highly protected from unauthorized access. At first start after installation, *capella* copies these scripts into your personal *capella* directory (subdirectory scripts) where you can make whatever changes you wish. The script browser will expect them to be only in this place.

Update scripts

Should new or updated scripts come with a *capella* update, these are not automatically copied into the personal *capella* directory as you might have modified them before. Via Plugins → Update Scripts you can copy them into the correct directory so that you can be sure to use the current versions.

The following section is intended for the normal user.

Execute scripts: The script browser

The script browser lists all the scripts that are currently linked to *capella*. There is a brief description and you can start the script from the browser:

1. Select menu: PLUG-INS → SCRIPT...
2. Mark the required script in the left section of the dialog.
3. A brief description appears in the right half of the dialog.
4. In some cases the Documentation... button is activated. In those cases it provides access to either a relevant help file (.chm) or a relevant HTML file (.html) that will supply more information about the script.
5. Click Run script if required.

> The folder **User Scripts** points to the folder inside your personal *capella* folder (see page 38). That's where you should store your own scripts.

Repeat script. If you want to rerun the most recently executed script, you can press Ctrl+R or select menu: PLUG-INS → REPEAT SCRIPT without having to open the script browser.

> **NB:** Only scripts that have been started via the script browser can be repeated in this manner. Those scripts that are listed on the Plug-Ins menu (and are repeated in the script browser) can easily be rerun by selecting them from the menu again.

Install new scripts

From time to time you should browse the capella-software AG website and check if any new scripts have been published.

On this overview page you will find many *capella* scripts including descriptions: `http://wiki.sins942.ch/index.php`.

If you want to add additional downloaded scripts or those that you have developed yourselves to the script browser you only need to copy them into your personal **User Scripts** folder. See above.

Plug-Ins

You can integrate those scripts that you use regularly into the **Plug-Ins Toolbar** and into the PLUG-IN menu. If you want to modify the pre-installed Plug-ins Toolbar and its associated menu you need to edit the `config\data\plugins.dat` file inside your personal *capella* folder.

Twelve of the pre-installed scripts can be called up from the Plug-Ins Toolbar by clicking their respective icon. You can add further scripts to `plugins.dat`. Those will appear

without symbol and keyboard shortcut in the PLUG-IN menu as only twelve function keys exist. Open the configuration dialog via VIEW → TOOLBARS in order to adapt the toolbars. Right mouse click a menu item and choose "button". In the window which opens you can design a new user-defined symbol which is allocated to this menu item. Then drag the symbol with the mouse from the menu to the PlugIns Toolbar or any other toolbar (also see page 41).

Here is a short description of each of those scripts. The scripts themselves include more detailed documentation.



Lyric text automation

This script converts beam and flag positions to match the Lyric text.



Split polyphonic staff

This scripts splits polyphonic staves in the current score into separate staves per voice.



Split chord

Author: Paul Villiger

This script splits chords into single notes on separate staves.



Transposable chord symbol

This script inserts a relevant transposable chord symbol above the chord at the current cursor position. For single voice scores (e. g. Lead Sheet) it recommends chord symbols.



Chord symbols → chords

Author: Paul Villiger

This script creates notated chords in a new staff from chord symbols that are positioned above the notes.



Rest padding

Author: Paul Villiger

This script fills up staves that are too short with rests.



Split multiple bar rests

Author: Peter Becker

This script splits multiple bar rests into separate whole bar rests.



Join rests

Author: Peter Becker

This script joins whole bar rests to multiple bar rests. Most common use: Press up voice extraction (see page 118).

Score synthesis

Author: Hans H. Lampe

This script joins single voices or separate scores into one score.

Tremolo bars

Author: Paul Villiger

This script creates tremolo bars.

Guitarrero

Author: Andreas Herzog

This script generates an additional tablature staff from the existing notes.

Tie manager

Authors: Andreas Herzog and Hartmut Lemmel

This script changes ties into slurs and vice versa. This can be done either for a marked part of the score or for the entire score. Also, it allows you to enter or delete ties.

Text behind notes

The script (textBehindNotes.py) allows you to position all Freeform text in such a way that it does not cover the notes but instead sits behind the notes. Common use: see page 86.

Rests -> Filling rests

With this script (Rest2Filler.py) you can change all invisible rests to which no graphic object is anchored to filling rests (files created with *capella* 2008 and older). You will have to save these files in capx format so that these filling rests survive (also see page 62).

Selection of additional scripts in the Plug-ins menu

Basso continuo (*Author*: Hans H. Lampe): This script positions an additional staff that contains all additional notes of the respective chords above the numbered basso continuo staff.

Align slurs (*Author*: Hartmut Lemmel): Amongst others, this script can remove tenuto lines, separate ties from staccato marks, separate other articulation marks from ties, align ties with appoggiaturas, align ties at line breaks.

Histogram: This script creates a diagram depicting the frequency distribution of note pitches in the score.

Search

With this script (Search.py) you can search for text, melodies or music symbols in *capella* scores. You can for example mark part of a voice and then search places in the score where the same motif can be found. Also, you can jump to the next fixed barline or volta bracket using this script. This is very comfortable when you have split windows. The script completes former methods of melody search (see page 46).

From user to expert

Some of the more unusual problems that you might encounter when working with *capella* might not have a straightforward solution, but in most cases there are ways to solve a problem following a more indirect approach. This chapter will show you how you can *creatively use capella*. Although there are no solutions for genuinely unsolvable problems there are certain patterns that can be applied for solving a number of problems. This chapter introduces you to some examples.

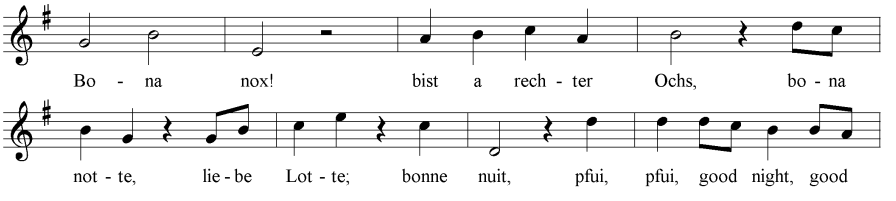
Make the unwanted invisible

Invisible notes (attribute invisible)

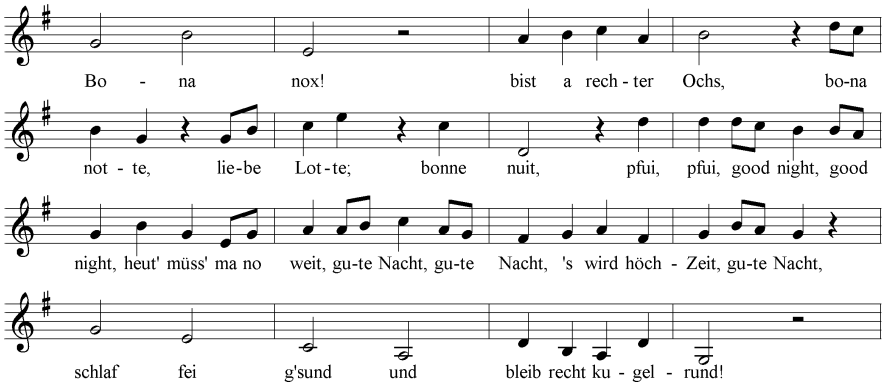
Remember that every note can be made invisible (and mute). In this way you can create additional space on your staff. The following section shows you the most important uses of invisible notes (see page 183).

Using the color white

Example: When you notate a canon the barlines of the different systems are usually not lined up as shown in this figure. However sometimes this is desirable.



The following figure shows a synchronized display.
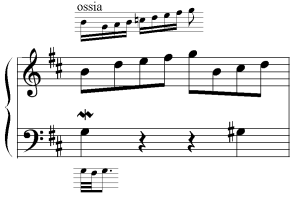


Set your canon into a four-part system without brackets. All you need to do now is remove the system bracket in the left margin. Select menu: FORMAT → SYSTEMS... → COLOR OF SYSTEM BRACKETS and choose white as the color.

Erase by covering with white
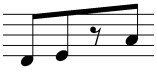
When all other solutions fail you can solve many problems by covering an area of the score with a white square and then redrawing on top of the square. Please remember that you need to anchor the white square and the redrawn objects to the same note in order to layer them properly.

Alternative versions or spelled out ornaments are sometimes positioned above or below the staff as shown on the right.



To create such a display you first make the ossia staff (with small staff line gaps) part of your system, then set your notes and then cover the unused area of the staff with white squares without border.

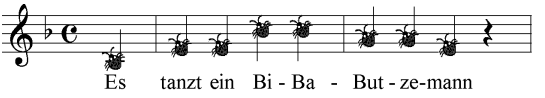
Anchor graphic objects to (invisible) notes



In this figure you see a beamed group that is interrupted by a rest. You cannot set this notation directly. Instead of the rest set a note in its place (if you position it properly into the flow of notes – in this case a G – , you don't need to adjust the beam afterwards). The solution now depends on the fact that graphic objects are visible even when they are anchored to invisible notes. Use menu: DRAW → MUSIC SYMBOL → RESTS and attach an eighth rest to the note and then

format the note invisible.

In a similar fashion you can create any type of note head. The following figure shows ladybirds in place of note heads:
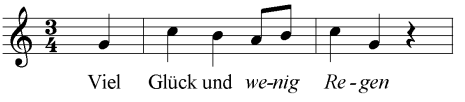


Assign the attribute “no head” to the note heads. In this example the ladybird was imported into Microsoft Word as clip art. From there it was copied to the clipboard and then in *capella* anchored to the first note by using menu: Draw → Paste from Clipboard. Mark the object, right-click to open the context menu and select Edit → Position and from the drop-down list select “Outermost note” for **Vertical position**. Fine tune the positioning of the object in relation to its note stem and then copy it back to the clipboard. Now paste it to all the other note stems whose note heads have been made invisible. The graphic objects will automatically position in the right place and even move correctly during transposition.

Convert multi-part to multi-layer

Many problems can be solved by inserting a new voice and copying the notes from an existing voice into this new one, which can then be manipulated e. g. individual notes can be formatted as invisible and/or mute.

This figure shows the use of two different fonts in Lyric text of one voice.



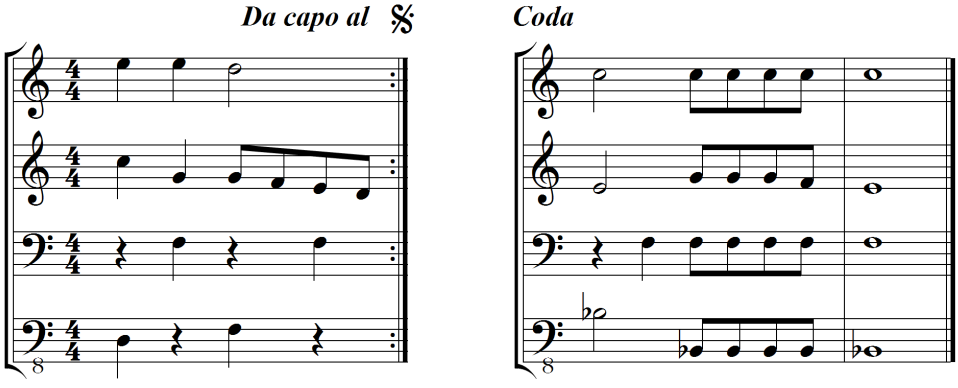
Only one font can be selected for the Lyric text of any one voice. (See menu: Format → Voices (Lyrics)). However you could add a second voice to your staff, which will result in the following solution:

- Insert an additional voice into your staff. *capella* usually organizes the old and the new voice in such a way, that the upper voice has its stems pointing upward while the lower voice has its stems pointing downwards. Before you close the **Insert Voice** dialog you must set the stem direction for both voices to **Depending on position**. This will turn both voices into main voices.
- Switch on **Color Information** and copy all notes from the old voice via the clipboard to the new voice (see page 73).
- Assign a straight font to the first voice and type “Viel Glück und”
- Assign an italic font to the second voice and type “we-nig Regen”

The previous problem of the interrupted beamed group can be solved in the same way: One voice contains the beamed group with one invisible note, while the other voice contains lots of eighth rests that are all invisible except for one.

Two systems side by side

In some very special cases (e. g. Incipits or Coda) one might require two systems side by side. A trick helps to achieve this:



➔ **How to reproduce the above example:**

1. Write both systems in the normal manner, i. e. they will be positioned above each other. Format both systems as justified ( ).
2. Use menu: FORMAT → SYSTEMS... → INDENT to set the *right* indent of the first system to 55.
3. Repeat step 2 for the second system but set the *left* indent to 50. The systems are now displayed diagonally (top left and bottom right).
4. Now comes the *magic*: To move the lower system upwards, position the cursor in the lowest staff of the first (upper) system and select menu: FORMAT → STAVES... → SPACING. Set the value for **Below** to -35. This negative value causes the lower system to be shifted upwards by this value.
5. If the systems are not properly aligned side by side, adjust the negative value in step 4.

NB: If positioning of the cursor with the mouse presents a problem with side by side systems use the cursor keys!

More practical examples

Fingering

Fingering numbers are best entered as Plain text, as this form of text will rescale with any change to the staff size.

> **NB:** Make sure that the font used for fingering stands out clearly alongside other numbers such as triplet numbers etc.

If you often write out fingering it is better to use the Gallery to enter the numbers. This way the positioning is automatic. A basic file for piano fingering is provided as `Fingering.cag`. Open the Gallery with DRAW → GALLERY and click Add file. Select `Fingering_Guitar.cag`. The file contains five numbers for the right hand, which are automatically positioned above the note and five for the left positioned below. To enter a number put the cursor in front of the note and press one of the following: Ctrl+1 to Ctrl+5 for the right hand resp. Ctrl+6 to Ctrl+0 for fingers 1 to 5 of the left hand.

Gregorian chant

Open file `Gregorian.cap` in your `Examples/Know-how folder` to find ideas about implementing Gregorian plainsong.
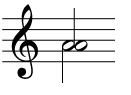
Tempo marks

Verbose tempo marks (e. g. *allegro*) can be anchored as Plain text to the first note of the system.

Metronome marks consisting of quarter note, equal sign and number (in some cases preceded by verbose tempo marks) can be created as a Freeform text. Due to the different formatting of the individual parts we recommend you store an example in a Gallery. File `Tempo.cag` in the Gallery folder contains an example that you can use as your starting point.

Playback tempo will not be influenced by these tempo marks (see page 108).

Unisono



This notation style is sometimes used for string players to notate unisono to be played on two strings. First notate A and then position a duplicate into a second voice on top of it.

In the duplicate voice access chord mode and add a G. This will cause the A to jump to the right. Now mark the G note head and format it invisible and mute (FORMAT → NOTES/RESTS → HEADS → SHAPE → NO HEAD) and remove the slightly longer stem of the duplicate (FORMAT → NOTES/RESTS → NOTES → STEMS → DIRECTION → NO STEM).

Repeat signs

Repeated chords are occasionally abbreviated with a repeat sign.



To ensure correct playback you first have to repeat the chord properly and then format the repeated copies as invisible (FORMAT → NOTES/RESTS → GENERAL). Switch on **Color Information** to display invisible objects and position the cursor to the left of the first invisible chord. Now select menu: DRAW → MUSIC SYMBOL... ARTICULATIONS 2 and click the required repeat sign to anchor it to the invisible chord. Copy the sign to the clipboard and paste it back to all the other invisible chords.

Expert settings

To maintain an uncluttered user interface we have delegated some of the fine tunings of *capella* to configuration files. This section shows you how to adjust the most important configuration file to your needs.

The configuration file capella.dat

During installation of *capella* the file `capella.dat` has been placed into your *capella* program folder and a copy into your `...\My Documents\capella\config\data` folder. Only if the copy cannot be found will *capella* revert back to the original in the program folder.

You should never edit the original file, only edit your personal copy.

➔ **How to adjust the `capella.dat` file to your needs:**

1. If your personal copy is not present put a copy of the original into your personal `capella\config\data` folder (see page 38).
2. Open the personal copy with a text editor, make the required changes and save the file.
3. If *capella* will not start up after you made changes to the file just delete it. *capella* will then start from the original in the program folder.

Reset toolbars

If you want to reset the toolbar grouping to the factory defaults, you can do so via a registry patch: In the program directory of *capella* you will find the file ResetCapella7-Toolbars.exe. If you double-click this file in Windows Explorer, the default toolbar grouping will be set. *capella* has to be closed before this action.

> If *capella* does not start but is closed by the operating system right after the main window has appeared, resetting the toolbars as explained above may help.

Tables and charts

The elements of a *capella* score

It is very helpful for your creative use of *capella* to have some understanding of the logic structure of a *capella* score. This section briefly introduces you to the basic structure as far as it is relevant for the use of the program.

Score

capella calls documents *scores*. Several scores can be edited simultaneously. Each score can be displayed in several windows simultaneously (e. g. beginning and end of a large score or different zoom levels or view types).

Scores are saved with the file name extension `.cap`.

A score contains the following information:

Information	Edit with...
Any number of *systems*	See below at *System*
Information about the author, key words and comments	Menu File → Info, Tabs Comments, Author
Margins, portrait and landscape format, re-setting of page numbering	Menu File → Page Setup
A *SystemTemplate*, that describes the basic properties of all staves that are part of the systems in the score	Menu View → SystemTemplate
Key change with redundant accidentals, separate two systems with two diagonal lines	Menu Format → Score, Tab General
Basic setting of dampening of beam gradient	Menu Format → Score, Tab Beam Gradient
Information about the relative distances between notes	Menu Format → Score, Tab Note Spacing
Graphic objects anchored to pages, also headers and footers with page numbers, optional settings for first page and/or odd and even pages	In page layout view anchor objects to page anchor (top left corner – small gray square)

Global settings for bar numbering at the beginning of systems	Menu Extras → Bar Numbering
A Gallery with re-usable graphic objects	Menu Draw → Gallery

System

Any system contains the following information:

Information	**Edit with...**
One or more of the staves from the underlying SystemTemplate	See below at *Staves*
Correction of automatic bar numbering	Menu Format → Systems, Tab Bar Numbering
Left indent (automatic or fixed value), right indent, justification, next system on next page	Menu Format → Systems, Tab Indent
Instrument descriptions (full description or abbreviation from the SystemTemplate or no description), basic settings for beam grouping, starting tempo (for playback)	Menu Format → Systems, Tab General
Color of system brackets	Menu Format → Systems, Tab Color of System Brackets

Staves

Each staff contains the following information:

Information	Edit with...
Up to six *voices*	See below at *Voices*
Applicable staff from the SystemTemplate	Determined during insertion of staff into system
Standard time signature	Inserted at beginning of staff, remains intact if deleted
Additional distance of the staff to the staves of the SystemTemplate	Menu Format → Staves..., Tab Spacing
Color of staves	Menu Format → Systems..., Tab Color of Staves

Voices

Each voice contains the following information:

Information	Edit with...
Any number of note objects	See below at *Note objects*
Default stem direction (automatic, upwards, downwards)	Determined when inserting staff into system; edit afterwards with menu Format → Voices (Lyrics) Tab Stem Direction
Font and distance between verses	Menu Format → Voices (Lyrics), Tab Lyrics

Note objects

All objects that are part of one voice are called note objects. Analogous to the characters in a word processing document, the objects can be marked and edited. The note objects are divided into time objects and modifiers.

Time objects are the executable objects of notation i. e. chords (consisting of one or more notes with accidentals) and rests.

Modifiers are those objects that influence the execution of the following objects, e. g. *clef*, *key*, *time signature* and *fixed barlines*.

In addition to these two there are the **automatic barlines**. These are generated by *capella* and cannot be marked for editing.

Here are descriptions of time objects and modifiers:

Time objects

Each time object contains the following information:

Information	**Edit with...**
Note value, dotting (none, single, double, triple)	Determined when chord is inserted according to current settings, subsequently edit with Menu Format → Notes/Rests, Tab Value, Menu Format → Change Note Duration → Increase/Decrease
Irregular division (triplet etc.)	Menu Format → Notes/Rests, Tab Value
Without value, small, invisible, passing appoggiatura, horizontal shift	Menu Format → Notes/Rests, Tab General
Color	Menu Format → Color (Notes, Graphics)
Any number of graphic objects	See at *graphic objects*

Chords consist of one or more notes. In addition to the time object information each chord contains the following information:

Information	**Edit with...**
Up to 15 note heads	see below at *Note heads*
Optional deviation from the standard stem direction and stem length	Menu Format → Notes/Rests, Tab Notes, Sub-tab Stems
Tremolo bars (percussion notation; up to 5 diagonal lines)	Menu Format → Notes/Rests, Tab Notes, Sub-tab Stems
Articulation signs (staccato etc.)	Menu Format → Notes/Rests, Tab Notes, Sub-tab Articulation Symbols
Tie from previous resp. to following chord	Menu Insert → Repeat Chord with Tie
Lyric text syllable for up to 9 verses	Menu Extras → Lyrics

Each **note head** contains the following information:

Information	**Edit with...**
Relative diatonic pitch (from double flat to double sharp)	Determined when note is inserted
Forced accidental (also in brackets), suppress accidental, horizontal position of accidental, mute, head shape	Menu Format → Notes/Rests, Tab Heads

In addition to the time object information, each **rest** contains the following information:

Information	**Edit with...**
Multiple bar rest	Insert with Menu Insert → Multiple Bar Rest
Vertical position (in center, depending on voice, manual)	Menu Format → Notes/Rests, Tab Rests

Modifiers

Modifiers are inserted at the current cursor position with the relevant selection from the INSERT menu.

For all voices. If you want to add the same modifier in all voices in a system at the same chronological position, there are two methods:

(a) Produce a system cursor (a vertical cursor line through all the staves) and issue the command.

(b) Put the normal cursor at the correct point in one of the staves. When you open the dialog to add the modifier, make sure that **All voices of the system** is checked.

After a modifier is entered you can change its color (FORMAT COLOR (NOTES, GRAPHICS)), delete it or replace it.

Clef. If no clef has been set at the beginning of the voice the one from the underlying SystemTemplate will be used.

Key. If no key has been set at the beginning of a voice *capella* defaults to C-Major / a-minor.

Time signature. If no time signature has been set at the beginning of the voice *capella* uses the **standard time signature** of the staff. Standard time signature for a new score is 4/4. It is updated whenever a time signature is set at the beginning of the staff. The (modified) standard time signature remains active even if its symbol has been deleted.

Example: To set a time signature of 3/8 without visible symbol position the cursor at the beginning of the staff, use menu: INSERT → CLEF, KEY, TIME SIGNATURE to set the required time signature and immediately delete it again with ←.

The CAPELLA3.TTF font

The table below displays all characters and symbols of the *capella3* TrueType font that is part of the *capella* installation. The characters can be inserted into any Freeform text by holding down Alt and entering the number (including the leading zero) on the numeric pad of the keyboard. Num must be switched on for this purpose.

Example: To enter the *pedal start* symbol hold down Alt and enter 0 9 7 on the numeric pad of the keyboard.

It is a lot easier to enter symbols via menu: DRAW → MUSIC SYMBOLS (see page 164).

Below each number the following information is provided for each symbol:

♮	Appearance of symbol in uniform size
R	Key for direct entry or character in standard font
natural	Description of the function of the symbol

032	033	034	035	036	037	038	039
				§			
	!	"	#	$			
large empty step	medium empty step	small empty step	very small empty step	segno 2			
040	**041**	**042**	**043**	**044**	**045**	**046**	**047**
				,	-	.	/
				special alteration	minus	for dotted notes	special alteration
048	**049**	**050**	**051**	**052**	**053**	**054**	**055**
0	1	2	3	4	5	6	7
0	1	2	3	4	5	6	7
beat numbers							
056	**057**	**058**	**059**	**060**	**061**	**062**	**063**
8	9	C	¢	<	=	>	?
8	9	:	;	<	=	>	?

beat numbers		4/4-beat	alla breve sign	special alteration	equal sign	special alteration	special alteration
064	**065**	**066**	**067**	**068**	**069**	**070**	**071**
							
@	A	B	C	D	E	F	G
special alteration	G clef		C clef		F clef		percussion clef
072	**073**	**074**	**075**	**076**	**077**	**078**	**079**
							
H	I	J	K	L	M	N	O
octave shift	1/1 rest	1/2 rest	1/4 rest	1/8 rest	1/16 rest	1/32 rest	1/64 rest
080	**081**	**082**	**083**	**084**	**085**	086	087
							
P	Q	R	S	T	U	V	W
double flat	flat	natural	sharp	double sharp	brevis (breve)	chord repeat sign	bar repeat sign
088	**089**	**090**	**091**	**092**	**093**	**094**	**095**
							
X	Y	Z	'	\	]	^	_
double bar repeat sign	Down bow	up-bow	special alterations				
096	**097**	**098**	**099**	**0100**	**0101**	**0102**	**0103**
				*D.C.*	*D.S.*	*f*	*ff*
`	a	b	c	d	e	f	g
special alteration	pedal start	pedal end	special alteration	da capo	dal segno	forte	fortissimo
0104	**0105**	**0106**	**0107**	**0108**	**0109**	**110**	**0111**
fff	*mp*	*mf*					
h	i	j	k	l	m	n	o
forte fortissimo	mezzopiano	mezzoforte	fermata below	upper mordent	special alteration	large coda head	coda head
0112	**0113**	**0114**	**0115**	**0116**	**0117**	**0118**	**0119**

p	*pp*	*ppp*	*sf*	*tr*		8va	
p	q	r	s	t	u	v	w
piano	pianissimo	p. pianissimo	sforzato	trill	fermata	octava	turn
0120	**0121**	**0122**	**0123**	**0124**	**0125**	**0126**	
		sfz	*fz*	*fp*			
x	y	z	{		}	~	
mordent	segno	sforzato	forzato	fortepiano	special alteration	alternative breath sign	
0160	**0161**	**0162**	**0163**	**0164**	**0165**	**0166**	**0167**
see 0174							

note symbols (e. g. for Metronome marks). Symbol No 0160 is not recognized by all programs.

0168	**0169**	**0170**	**0171**	**0172**	**0173**	**0174**	**0175**
note symbols				short arpeggio sign	long arpeggio sign	duplicate of 0160	tempo mark
0176	**0177**	**0178**	**0179**	**0180**	**0181**	**0182**	**0183**
double rest	quadruple rest		v alternative breath mark	finger symbol	// break sign	+ special playing instructions	○
0184	**0185**	**0186**	**0187**	**0188**	**0189**	**0190**	**0191**
special playing instructions		15ma 15ma (two octaves)	arpeggio upward	arpeggio downward	special trills		
0192	**0193**	**0194**	**0195**	**0196**	**0197**	**0198**	**0199**
special trills							
0200	**0201**	**0202**	**0203**	**0204**	**0205**	**0206**	**0207**
tenuto mark	staccatissimo	normal accent	marcato	soft beat	hard beat	staccatissimo below	hard beat below
0208	**0209**	**0210**	**0211**	**0212**	**0213**	**0214**	**0215**

				*m*	*r*	*s*	*z*
special trill	double stroke variations			letters for dynamic signs			
0216	**0217**	**0218**	**0219**	**0220**	**0221**	**0222**	**0223**
							
special note heads						1/128	flag
0224	**0225**	**0226**	**0227**	**0228**	**0229**	**0230**	**0231**
							
flag	breve		semi breve head	half note head	quarter note head	flags	
0232	**0233**	**0234**	**0235**	**0236**	**0237**	**0238**	**0239**
						△	▲
flags						triangle heads	
0240	**0241**	**0242**	**0243**	**0244**	**0245**	**0246**	**0247**
◇	◆	×	⊗	□	■	*0*	*1*
rhombus note heads		x note heads		square note heads		italic digits (triplets etc.)	
0248	**0249**	**0250**	**0251**	**0252**	**0253**	**0254**	**0255**
2	*3*	*4*	*5*	*6*	*7*	*8*	*9*
italic digits (triplets etc.)							

Keyboard shortcuts

Function keys

Shortcuts that are common to Windows are shown in light gray.

	Key only	+Shift	+Ctrl	+Shift+Ctrl	+Alt
F1	Help				
F2	Note entry one octave lower	Note entry two octaves lower			
F3	Normal note entry	Continue search	Script-Browser		
F4	Note entry one octave higher	Note entry two octaves higher	Close window (score)		*exit capella*
F5	Irregular division	Clef, key, time signature	Triplets		Transpose
F6	Next partial window	Previous partial window	Next window	Previous window	
F7	Treble clef	Treble clef for all staves in the system	Insert multiple bar rest		
F8	Bass clef	Bass clef for all staves in the system			
F9	Refresh score window	Play back voices	Play back system	Playback filter	Rhythmic note entry
F10	Menu	Join beams	Split beams	Automatic beaming	Subdivide beams
F11	Switch on/off color information	Switch on/off page layout view	Switch on/off MousePiano	Switch on/off guide lines	Bar numbering
F12	Medium standard scale		Small standard scale		Large standard scale

To call up Plug-ins 1 to 12 the key combinations Shift+Alt+F1 to Shift+Alt+F12 can be used.

Letter combinations

	with Ctrl	with Shift+ Ctrl	with Shift+Alt insert graphic object at cursor
A	Mark all	Selectable articulation symbol	
B	Slur		Slur
C	**C**opy	Sta**c**cato	**C**rescendo
D	Mark system		**D**ecrescendo
E	Graphics **E**xport	Change **e**nharmonically	**E**llipse
F	**F**ind	**F**ixed barline	
G	**G**allery	**G**roup marked graphic objects	**G**uitar fingering
H	Go to...		
I	Score **I**nformation		
J	Options	*capella-tune*-Options	
K	**K**eyboard active (on/off)	Small notes	Triplet bracket
L	**L**yric text mode	**L**yric text dialog	**L**ine
M	Syste**m**Template	Ste**m** direction/Lyrics for**m**at	
N	**N**ew	**N**otes/chords/rest	**N**ote lines
O	**O**pen	Mute	
P	**P**rint	Score	**P**olygon
R	**R**epeat script	Justified	**R**ectangle
S	**S**ave	**S**ystems	**S**ymbol
T	**T**empo	**T**enuto	**T**ext
U	Bitmap export	Invisible	
V	Paste	Force accidental	
W	Repeat transposition	Notes without value	**W**avy line
X	Cut	Suppress accidental	Plain te**x**t
Y	Redo	Acciaccatura	
Z	Undo	Staves	Metafile from clipboard

Combinations with letter keys

While holding down the letter key in the first column press one of the keys in the second column. The shortcuts relate to the note to the right of the cursor. Pressing Home resets to standard attribute. Numeric keys must be used on the main keyboard and not on the numeric pad.

As long as you hold down the letter key all additionally pressed keys are interpreted by *capella* as one single command. I. e. if you afterwards select menu: EDIT →UNDO then all partial commands will be undone in one go.

N	←, →, Home	Rotate beam (modify gradient)
N	↑, ↓, Home	Move beam, modify stem length
X	0...5, Home	Add tremolo bars to note stem
J	←, →, Home	Horizontal alignment of note; For marked note head: horizontally align accidental
V	↑, ↓, Home	Position note in neighboring staff
I	↑, ↓, Home	Change stem direction
O	↑, Page Up, ↓, Page Down	Diatonic shift of note/chord (single step/octave)
P	↑, Page Up, ↓, Page Down	Chromatic shift of note/chord (single step/octave)

Number combinations

Ctrl+1	Anchor first object from Gallery to note following cursor
Ctrl+2	Anchor second object from Gallery to note following cursor
etc.	
Ctrl+0	Anchor tenth object from Gallery to note following cursor
Alt+1	Anchor 11th object from Gallery to note following cursor
Alt+2	Anchor 12th object from Gallery to note following cursor
etc.	
Alt+0	Anchor 20th object from Gallery to note following cursor
Ctrl+Alt+1	Anchor 21st object from Gallery to note following cursor
Ctrl+Alt+2	Anchor 22nd object from Gallery to note following cursor
etc.	
Ctrl+Alt+0	Anchor 30th object from Gallery to note following cursor

Keyboard shortcuts for note entry

To set the **current note value** choose one of the two patterns at menu: EXTRAS → OPTIONS → NOTE ENTRY.

Note value	**2/1**	**1/1**	**1/2**	**1/4**	**1/8**	**1/16**	**1/32**	**1/64**	**1/128**

Normal	5	1	2	4	8	6	3	9	7
Alternative (useful for visually impaired users)	9	1	2	3	4	5	6	7	8

For **Note Entry** choose one of the following patterns at menu: Extras → Options → Note Entry

	Notes of the octave	**Alternative shortcuts for** , ; . :
German	C, D, E, F, G, A, H	Q, W, R, T
international	C, D, E, F, G, A, B	Q, W, R, T
Romanic	D, R, M, F, S, L, T	A, Q, Z, E
linear 1 (German)	Q, W, E, R, T, Z, U	A, S, D, F
linear 2 (English)	Q, W, E, R, T, Y, U	A, S, D, F
linear 3 (French)	A, Z, E, R, T, Y, U	Q, S, D, F

The octave in which the notes are entered depends on the clef and any deviation from the normal octave (see function keys F2 to F4). Use in combination with Shift to notate one octave higher or lower depending on the settings at menu: Extras → Options → Note Entry **Effect of the shift key**.

The alternative commands in the right-most column can be used for single-handed entry, e. g. during playing in from the MIDI keyboard. This enables the user to enter note values (best with the **alternative pattern** from above) and dotting with one hand without having to move the second hand from the MIDI keyboard.

The meaning of these commands is explained below in table *Additional keyboard shortcuts*.

Cursor movement and scrolling

Key	Effect
←	one note to the left
→	one note to the right
Ctrl+←	to next barline to the left
Ctrl+→	to next barline to the right
Home	to beginning of staff
End	to end of staff
↑	to next voice up
↓	to next voice down
Ctrl+↑	to corresponding voice in neighboring system above
Ctrl+↑	to corresponding voice in neighboring system below
Page Up	scroll up by 3/4 window height. If zoom is “Whole page” previous full page is displayed
Page Down	scroll down by 3/4 window height. If zoom is “Whole page” next full page is displayed
Ctrl+Page Up	scroll left by 3/4 window width
Ctrl+Page Down	scroll right by 3/4 window width
Ctrl+Home	skip to beginning of score
Ctrl+End	skip to end of score

All keyboard shortcuts to scroll reposition the cursor. Scrolling with the scrollbar does not reposition the cursor – it may scroll out of the window.

Additional keyboard shortcuts

Key	**Effect**
↵	Insert additional system resp. split system
Ctrl+↵	insert additional staff into system
Shift+Ctrl+↵	insert additional voice into staff
Ctrl+←	join system to system above
←	delete note or marked section to left of cursor
Del	delete note or marked section to right of cursor
Esc	exit modus like playback, Lyric text, SystemTemplate view, etc. Use in normal view to reset default values: quarter note, no dots, no alteration; monitor is refreshed
Ctrl++	increase monitor zoom by 10%
Ctrl+-	decrease monitor zoom by 10%
#	marks the lowest note head of a chord; use ↑ or ↓ to shift the marking within the chord
Alt+←	enharmonically change marked note head (more flats)
Alt+→	enharmonically change marked note head (more sharps)
+	increase pitch of next note
-	decrease pitch of next note
*	double increase pitch of next note
_	double decrease pitch of next note
.	next note dotted
:	next note double dotted
,	next note dotted, following note halved (complement note)
;	next note double dotted, following note quartered
Alt+.	next note triple dotted
Alt+,	next note triple dotted, following note split into eighth
0	cancel alteration and dotting
/	repeat chord
=	repeat chord with tie
!	set breath mark (delete like all graphic objects)
<	reduce note value (marked notes or note to right of cursor)
>	increase note value (marked notes or note to right of cursor)
Alt+Page Up	marked graphic object to front of notes
Alt+Page Down	marked graphic object to back of notes
Alt+Home	marked graphic object to foreground

Alt+End	marked graphic object to background
Alt+↑	marked graphic object one layer up
Alt+↓	marked graphic object one layer down

Credits

For some of the XML-based operations, *capella* uses the XMLParser software library, Copyright (c) 2002, Frank Vanden Berghen (http://www.applied-mathematics.net/tools/xmlParser.html). Thank you!

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