Documentation for Cavatina

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General concept

Language overview

You type in your music *sequentially*, i.e. the same way as in written language. Chords are words, barlines are punctuation marks, accidentals are diacritics and staff lines are the space character. Here is the base of Cavatina's syntax:

1. Hitting space extends the staff for starting a new note/chord.

2. Notes within a chord are typed in *from low to high*.

3. Note modifiers are written directly *after* the corresponding note.

Character mappings

Notes and all other musical symbols are accessed directly with your computer keyboard. The input depends on what keyboard layout you use. The complete keyboard mapping for each layout can be found on the keyboard page [http://cavatinafont.com/en/keyboard], but if you are new to Cavatina, it's recommended to read through the whole documentation first.

The musical note

The location of each note is motivated by the fact that the lowest row of characters just above the space bar has exactly **seven letters**: the seven pitches of a diatonic scale.

It is easy to learn where this seven notes are because of their physical location on the keyboard. It's like playing on the piano, but without the black keys.

Most musicians aren't happy with just seven notes. Following the idea above, we get a new octave for each of the four rows of the keyboard above the space bar, with the top row having three additional notes, like this:

Note

Notice each column contains the same note in different octaves.

If you have used other notation software, you are probably used to look for the `C` key if you want to write a *C*, and so on. This is not very efficient, because sadly these letters aren't ordered in such order in a row. When writing notes with Cavatina, once you get your fingers placed in the right position, you have all notes you need at your fingertips and you don't have to look back down at the keyboard.

Note length

So far we have 31 notes (covering a bit more than four octaves). Each of these characters has its lowercase and uppercase variant, which correspond to the note in 8^{th} and 4^{th} length accordingly. Switching to the bold weight of Cavatina, you get 16^{th}-notes in the lowercase and 8^{th}-notes in the uppercase characters.

	Input	**Note length**
Regular style	a	8^{th}
	A	4^{th}
Bold style	**a**	16^{th}
	A	8^{th}

Example 1. Example

Input	**Rendered output**
`, a A **a** **A**,`	

Appart from that, Cavatina has a special key that serves as a **modifier key**: the `^/°` key. We are going to call `^` the *inverter* and `°` the *time* character, the latter of which, among other things, extends the duration of notes. Every time you hit the time key after a note, the note's length doubles. You can do this up to a maximum of twice per note, i.e. for a whole note you would need to type a 4^{th}-note followed by two times `°`.

Example 2. Example

Input	**Rendered output**
`, f F f~ f~~ F~ F~~,`	

For *dotted notes* you use `<` after the note.

To draw a *tie* after a note append an `L`.

Note orientation

The stem of a note can be inverted. This is done with the *inverter*`^`. A note can only be inverted once (which doesn't stop you from un-inverting).

To invert the stem of a chord you invert the first note of the chord. If the next note in the chord would collide in its default orientation, then it is automatically inverted. Otherwise keep inverting until you obtain the desired result. This is useful for separating voices within one chord.

Example 3. Example

Input	Rendered output
`, f f^ j j^, afj a^fj a^f^j a^f^j^,`	

Rests

Rests are accessed via the ü/Ü key. Their duration is changed the same way as for notes. Optionally, you can write the same rest twice and the length will increase accordingly.

Example 4. Example

Input	Rendered output
`, ü Ü üü ÜÜ ü° ü°° Ü° Ü°°,`	

Note beams

To beam two 8^{th} or 16^{th} notes, write two dots `..` after the second note. Both notes need to have the same orientation before they can be beamed. Currently only pairs of notes can be beamed.

Example 5. Example

Input	Rendered output
`, dh sj.. d^h^ s^..j d^h s^..j^..,`	

Staff and Barlines

When you hit the spacebar you draw a new staff “block”. Before any note or chord, you have to draw a new *staff* block where this note or chord will sit.

The barlines are located as follows:

Musical symbol	Computer key
simple barline	,
double barline	,,
final barline	.
repeat barline (start)	;
repeat barline (end)	:

Cavatina is not made to do minor adjustments to the layout, but if you consider it necessary, you can gain control over horizontal spacing by using the half space `-` and the quarter space `--`.

Example 6. Example

Input	Rendered output
`, ,, . ; :`	

Clefs

Cavatina supports three different clefs:

Musical symbol	Computer key
F-clef	?
C-Clef	?ß or ß?
G-Clef	ß

The input of the notes is invariant of the signature; it doesn't depend on the current clef.

Time Signatures

Time signatures have to be written after clefs (and key signatures) or barlines. To start a time signature enter the *time* key `°`. After that you just write the upper and lower numeral successively.

To write the *common time* or *cut time* symbols, enter `c` or `C` after the *time* key.

A space is automatically attached after a time signature, so that you don't have to open a new staff block yourself.

Example 7. Example

Input	Rendered output
`,°34 ,°1216 ,?'''°34 ,°c ,`	

Articulations

Musical symbol	Computer key
staccato	ä
tenuto	Ä
staccatissimo	ää
fermata	ÄÄ
accent	>

All articulations are written after the lowest note of a chord, except the fermata, which is written after the highest note.

Example 8. Example

Input	Rendered output
`Aä AÄ Aää AÄÄ A>`	

Dynamics

Dynamics are aligned with respect to the note to which they are applied. Therefore, if you are writing a chord with some dynamics marking, you should write that marking just after the first (lowest) note of the chord.

Musical symbol	Computer key
pianississimo	***
pianissimo	**
piano	*
mezzo piano	*+

Musical symbol	Computer key
mezzo forte	+*
forte	+
fortissimo	++
fortissisimo	+++
sforzando	++* or **+
forte-piano	***+ or +++* or **^ or ++^

Musical symbol	Computer key
crescendo	l
decrescendo	l^

Example 9. Example

Input	Rendered output
d*fh h^++er M**+ Dl	

Ornaments

Musical symbol	Computer key
mordent	ö
inv. mordent	ö^
trill	öö
turn	Ö
inv. turn	Ö^
arpeggio	P

Note that, intuitively enough, ornaments are inverted with the *inverter* key ^.

To extend the trill or the arpeggio repeat that same character. The arpeggio is written at the end of a chord.

Example 10. Example

Input	Rendered output
Dö DÖ Dö^ DÖ^ Döö Döööö	

Repetition markings

Apart from the repeat barlines ;/:, you can use the following repetition markings:

Musical symbol	Computer key
1st repetition	o
2nd repetition	oo
end marking	o^

The end marking is necessary for the MusicXML/MIDI converter to detect the range of the repetition sections.

Musical symbol	Computer key
coda	`i`
segno	`I`
D.C.	k
D.S.	K

Writing *coda* or *segno* right after *D.C.* or *D.S.* will append the words "al Coda" and "al Fine" accordingly.

Example 11. Example

Input	Rendered output
`, D F G Do, D F D Go^:oo D S A Ü.`	

Other Notation

Octave markings are used in a similar manner as repetition markings and always after the highest note in a chord.

Musical symbol	Computer key
8^{va}	`O`
8^{va} (2)	`OO`
end 8^{va}	`O^`

The triplet is written before the chord sequence. Use tight spacing to fit the notes under the mark: enter three quarter-spaces `---` between the notes.

Musical symbol	Computer key
triplet	`_`

Pedal markings are lower markings and as such they have to be applied to the first note of a chord.

Musical symbol	Computer key
pedal	`p`
release pedal	`pp`

Staff systems

To create systems of multiple staves you can extend barlines to join with the upper staff. To draw a *grand staff*, first enter a newline followed by a single barline `,` to start a new staff. To draw the brace connecting with the upper staff, type in `**`. Then continue with the clef and key signature as you would normally do. To connect the subsequent barlines, write a single `*` after them.

Musical symbol	Computer key
brace	`,**`
long barlines	`,*` or `.*` ...

Example 12. Example

Input	Rendered output
`,ß''' DFJ DGJ J s d>.., ,** ?'''` `A D Ü MJ ,*`	