

## **Lyra Help Topics**

[Introduction](#)

[What you need to run Lyra](#)

[Window description](#)

[Using the computer keyboard](#)

[Editing music](#)

[Playing music](#)

[Configuring a track](#)

[The Menus](#)

[Music Theory for Beginners](#)

[More Advanced Stuff](#)

## **Introduction**

Welcome to Lyra! This program is designed to be an easy way to compose music on your PC. Lack of music keyboard skills is not an impediment. You can easily write or transcribe music using a mouse. The music is displayed in standard notation, just like sheet music. Or you can use the program to just play music.

A quick way to become acquainted with Lyra is to read the help pages in sequence by pressing the > key which will advance the display to the next page. You also can position the cursor on different parts of the Lyra window and get a description of the area by pressing the F1 key. pages in sequence by pressing the key which will advance the display to the next page. You also can position the cursor on different parts of the Lyra window and get a description of the area by pressing the F1 key.

This Windows version of Lyra is a pre-release version and as such is not complete. Your input is welcomed; if you have suggestions for new features or notice that things don't seem to work right or are unnecessarily difficult to use, please let me know. Paying a \$20.00 registration fee will get you the latest copy of Lyra (and version 1.0 as soon as it is complete), and make you eligible for inexpensive upgrades in the future.

Please direct all comments, suggestions, and inquiries to:

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## **What you need to run Lyra**

Lyra requires a computer that can run Windows 3.1 (or a later version); if you wish to play music, you must have a Windows compatible sound card such as a Sound Blaster or a MIDI interface card such as an MPU-401 and a MIDI capable synthesizer.

Windows comes with the necessary software needed to work with a Sound Blaster or MPU-401 card. All that you have to do is to follow the directions in the Windows manual to make sure that the needed driver is installed and properly configured.

If you are using a different sound card or MIDI interface, then you will need to install specially written drivers. These drivers are usually supplied by the manufacturer on a disk. If you don't have such a disk, contact the manufacturer.

This version assumes that Windows is running on a VGA monitor with a resolution of 640x480 or higher.

## **What Lyra Can Do**

Lyra is like a musician's word processor. With it, you can enter music into the computer and then play it back. Since you are working with standard musical notation, it is easy to work with if you already know how to read music; if you don't, you will find that you will learn quickly!

Lyra is a playback sequencer. That is, it will play a sequence of notes but cannot record music from a MIDI keyboard. The best way to think of Lyra is as an eight voice choir. Each voice in the choir corresponds to a track in Lyra. Just as a voice can sing only one note at a time, each track is limited to one note at a time. Chords are possible, but you have to split the notes up between the tracks. This may seem limiting, but you will find that it makes entry and editing of music very simple.

Lyra has provision for controlling how your music will sound. You can easily vary the tempo (the speed at which it is played), the volume, and the instruments sounds produced by each track. This means that you can play music that has a good deal of expression.

## Window Description

The Lyra window is divided into five main areas:

- the menus at the top
- the current file name just below the menus at the left,
- the track selection boxes across on the right,
- the music score in the middle,
- the tool box in the middle below the music score,
- and the help bar at the bottom.

## **File Name Area**

The file name area at the top left tells you the name of the file you have opened. It is changed when you open or save a file.

Clicking on the file name will bring up the **File Load** dialog box, giving you a short cut to loading in a new music file.

## Track Selection Boxes



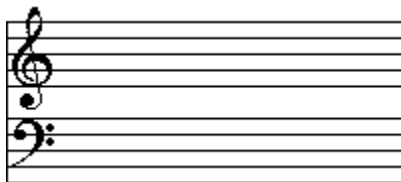
The track selection boxes on the top right normally are all gray with black numbers inside.

Clicking on a box makes the colors reverse for that box and the music display changes so that only the selected track is black, and all the rest are grey. This can be used to simplify the display when you have a dense score, and it can be used to assist you in editing music.

Clicking the right mouse button on a track box will bring up a dialog box which will let you configure a track. This allows you to set the MIDI channel, master volume, transpose, instrument, and pan.

You may also select a track box by pressing the control key with the number of the desired box. For example CTRL+3 will select the third track. Adding the shift key will bring up the track configure dialog box (such as SHIFT+CTRL+3).

## The Musical Staff



The musical staff is the place where notes and rests are placed. The vertical position on the staff is the way the pitch of a note is indicated. The higher on the staff, the higher the pitch. The horizontal position shows the time progression of the music, reading from left to right.

Lyra makes use of the grand staff, which is made up of the treble clef and the base clef. You will notice that the horizontal lines on which notes are placed are organized into two groups: the upper group starts with the treble clef symbol and the lower one starts with the bass clef. These clef symbols are used to indicate what pitches are associated with each level on the clef.

As you move the cursor up and down over the grand staff, watch the help bar at the bottom of the window. It will tell you the pitch name (such as A, B, C, D, E, F, or G) and the octave number.

More information about how to enter music can be found in the [edit music](#) topic.



## The Tool Box



The tool box in the middle at the bottom of the window, contains a number of tools that will help you in creating and editing music. A tool may be selected by clicking on it with the mouse. Certain combinations of tools are not allowed; see below for more information about this.

The tools are organized into several groups. The top group consists of notes and rests. Select one by clicking on it. Only one note or rest can be selected at a time. Pressing keys 1 through 7 will select a note, and SHIFT+1 through SHIFT+7 select the corresponding rest.

The tools on the bottom line consist of four groups. First are the pitch modifiers, or accidentals. These tools (sharp, natural, and flat) will modify the pitch of a note. Selecting an accidental tool that has already been selected will result in its being unselected. If a rest is selected, these tools are not selectable. Only one of these tools may be selected at a time. Pressing keys S, N or D, and F will select the sharp, natural, or flat tools.

The next group is the length modifiers (triplet, dot, and tie). These will modify the length of a note or rest. Pressing keys , (comma), . (period), T or / (slash) will select the triplet, dot, or tie tools. Selecting an accidental tool that has already been selected will result in its being unselected. You may select any combination except that when a rest has been selected, a tie may not also be selected.

A special tool, whose function is not yet completely defined, is the arrow tool in the middle of the bottom row. When it is selected, all other tools are disabled. This tool may also be selected/deselected by pressing the space bar key.

The last group of tools are used to enter special symbols into the score which change the volume, tempo, and the like. All of them can have more than one value, so the Help Bar will tell you not only the name of the option but also the value that you selected. When you click on the music score, a special symbol will be entered. Instead of playing a note, this symbol will do something else like changing the volume, tempo, or the sound your synthesizer makes.

The first option tool is the Volume tool. When you click on it, a pop-up menu appears, listing all of the available volume symbols. When you release the mouse button, the volume that was highlighted is selected and can be entered into the music. The Help Bar will display the message **Ready to enter Volume pp** (or whatever volume you selected) while the cursor is in the music score area. More information about volumes in Volume Settings.

The next tool is the Tempo tool. When you click on it, a dialog box appears, asking you to enter a new tempo. This tempo is the number of quarter notes per minute. To remind you of what tempo you entered, the Help Bar will display the message **Ready to enter Tempo 100** (or whatever tempo you entered).

Next is the Octave tool. Clicking on it will pop up a menu with two choices: **8va** or **loco**. **8va** is used to raise or lower a track by an octave. Placing the marker above the music staff will raise the track an octave; placing it below the music staff will lower it an octave. **loco** is

used to cancel the effect of the **8va** and can be placed anywhere on the staff.

The Instrument tool is supposed to look like guitar. It will let you insert instrument changes in your music at any point. It is very important that the Instrument Dialog be correctly set up so that the right program change number is associated with each instrument name. When you click on the tool, a pop-up menu will appear, listing all of the available instruments. When the cursor is on the music score, the Help Bar will tell you what instrument you selected.

The next two tools bring up a dialog box which lets you change the key and time signatures. This version allows only a single key and time signature; future versions will allow changes at any point.

The last tool, the Controller tool, is like the Instrument tool. When you click on it, a menu will pop up listing the available controllers. You must fill in the Controllers Dialog to define a controller.

## **The Help Bar**

The help bar is a gray bar that goes across the bottom of the window. Its purpose is to assist you by telling you what sorts of actions are possible, depending upon where the cursor is.

You will find more complete descriptions of Pulldown Menu commands here; as you move the cursor over the track boxes, the music score, and the tool box, you will find specific information as to the track number, the pitch on the score, and the type of tool you selected.

## Using the Keyboard

Almost every function of the mouse has been duplicated with the computer keyboard. Here is a list of the valid key press commands (other than those associated with the pulldown menus):

**s** - select the sharp tool

**d** - select the natural tool (alternate for n)

**n** - select the natural tool

**f** - select the flat tool

**,** - select the triplet tool

**.** - select the dot tool

**/** - select the tie tool (alternate for t)

**t** - select the tie tool

**enter** - enter a note or rest

**up arrow** - move the cursor up one step on the music score; if you press the SHIFT key as well, you can adjust the cursor more precisely.

**down arrow** - move the cursor down one step on the music score; if you press the SHIFT key as well, you can adjust the cursor more precisely.

**page up** - move the cursor up one octave on the music score

**page down** - move the cursor down one octave on the music score

**home** - move the cursor to the left hand side of the window

**ctrl+left** or **ctrl+right arrow** - advance or back up one measure

## **Editing Music**

Notes may be easily placed on the music staff by selecting the desired note or rest length from the toolbox and clicking on the music staff. Just as easily, you can make changes to existing music.

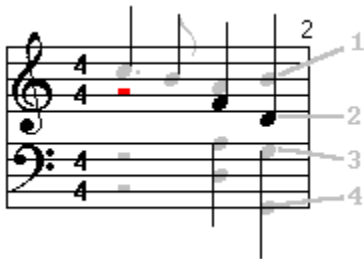
[Entering New Music](#)

[Changing Existing Music](#)

## Entering Music

To enter new music into a score, you must first select a track. Next select a note or rest from the toolbox at the bottom of the window. Select any pitch or length modifiers you wish. Now position the cursor on the music staff at the correct pitch and click the left mouse button (or press **Enter**). A new note or rest will appear on the staff. Add as many notes as you wish. Each track is limited to one note at a time, so if you wish to enter chords, you will have to split the notes between the tracks.

Here is an example of two four note chords: the notes have been entered into tracks 1 through 4. Since the first two beats of the measure had only a melody (which was entered into track 1), tracks 2 through 4 started out with half rests. Track two was selected, making its notes black, and the rest gray.



A note may be inserted between two existing notes in the same track by clicking between them at the right pitch. If you click directly over a note, then that note will take on the attributes selected in the toolbox.

If you click after the last note in a track, then the new note will be added immediately after the last note, regardless of how far to the right you click.

Please note that new notes cannot be entered unless you have first selected a track!

## Changing notes

A note's pitch may be changed by dragging it to a new pitch. This is done by putting the cursor over it, pressing the left mouse button and holding it down, moving the cursor up or down to the new pitch, and releasing the mouse button. The cursor will change shape while a note is being dragged. If no track has been selected (see selecting a track), then you must position the cursor directly over the note before dragging; if a track has been selected, then the note that is black directly above or below the cursor can be dragged. You will find that dragging is easier when a track has been selected. If you move the cursor too far to the left or right, the pitch change will be cancelled and the cursor will return to its normal shape.

You can change a note's length or change the accidental by selecting the desired length or pitch modifier in the toolbox at the bottom of the screen and then clicking the mouse while the cursor is positioned directly over the note in question.

A note may be deleted by positioning the cursor over the note and pressing the **Delete** key or SHIFT+D.

Inserting a note is done by selecting a track, and positioning the cursor between two notes and clicking the left mouse button or pressing the **Enter** key.

## Playing Music

To play music, you must have first configured Windows correctly so that it recognizes the music device you have installed in your computer. This may be an internal FM synthesizer card such as a Sound Blaster, or a MIDI interface card such as an MPU-401 which must be connected to a MIDI synthesizer. Please consult the Windows manual and the instructions that came with the card to do this correctly.

Once this has been done, Lyra will recognize the music device(s) in your computer. If you have more than one music device installed, then you will need to configure Lyra so that it knows which one you want to play music on. This is done with the Preferences command on the **Edit** menu.

When you select the **Play** command under the **Play** menu, a box will pop up. As the music is played, the current measure number is displayed in the **Goto** button. You may cancel playback at any time by selecting the **Cancel** button. Selecting the **Goto** button will result in repositioning the music display to the measure number displayed.

If your synthesizer does not play correctly, you may need to set up the track parameters or you may want to set the Filter.



## Notes and Rests

Notes are the fundamental building blocks of any piece of written music. They represent the musical sounds made by an instrument. Each note has two basic pieces of information built into it: the length, which is determined by the shape; and pitch, which is determined by the position of the note on the musical staff.

Rests are used to show that no sound is to be made for a given amount of time. The length of a rest is determined by its shape. A rest may be placed anywhere on the musical staff, but vertical placement does not affect the rest (it is just for making the music easier to read).

Here is a list of the notes and rests that Lyra uses:



whole note and rest. Equal to four quarter notes.



half note and rest. Equal to two quarter notes.



quarter note and rest. Normally get one beat.



eighth note and rest. Two are equal to one quarter note.



sixteenth note and rest. Four are equal to one quarter note.



thirty-second note and rest. Eight are equal to one quarter note.



sixty-fourth note and rest. Sixteen are equal to one quarter note.

## Accidentals

An accidental is a term used to describe a group of symbols used to modify the pitch of a note. Lyra makes use of three accidentals:

# is the sharp symbol. It raises the pitch of a note half a step.

b is the flat symbol. It lowers the pitch of a note half a step.

♮ is the natural symbol. It is used to cancel the effect of the key signature. If the note would normally have been sharpened by the key signature, then the natural would lower the pitch half a step. If the note would have been flattened by the key signature, then the natural would raise the pitch half a step.

## Length Modifiers

The length modifiers are used to change the length of a note or rest. Since a tie is not allowed to modify a rest, the combination of a rest and tie cannot be selected in Lyra. Otherwise, you may select any combination of length modifiers to modify a note or rest.

**3** this is the triplet modifier. It shortens the length of the note or rest slightly so that three of the same note or rest will be equal to two of the unmodified note or rest. For example, three triplet eighth notes equal two eighth notes.

**·** this is the dot modifier. It looks just like a period. It increases the length of a note or rest by one half. For example, a dotted quarter note equals one and a half quarter notes (or three eighth notes).

**~** this is the tie modifier. It allows you to combine two notes together. The result is a note of the pitch of the first one, and a length of both notes combined. Tied notes are required to be of the same pitch.

## Key Signature

The key signature is set at the beginning of a piece of music and is notated by a group of sharps or flats immediately after the treble and bass clefs. Here is an example of a key signature of four flats:



The key signature actually is a fairly complicated concept involving scales and tonality. For our purposes, it is a form of shorthand that lets us specify the notes of the scale that will automatically be sharped or flatted. A key signature of four flats means that all B, E, A, and D notes are to be flatted (if you will look carefully at the example above, the flats are positioned on those notes).

The key signature is changed by using the **Signatures** command in the **Edit** pulldown menu. A key signature can have up to 7 sharps or flats, but never a mixture of sharps and flats. The order of flats and sharps is strictly defined by convention; all you have to do is to determine how many flats or sharps there are in the key signature and Lyra will correctly display it for you.

## Time Signature

The time signature gives you two bits of information about how music is to be played: the basic rhythm, and what note length gets a single beat. This is indicated by two numbers, arranged one over the other on each clef.

The top number tells you how many beats there are per measure. This number is usually from 1 to 12.

The bottom number tells you what note length gets a beat. This ranges from 2 for a half note, 4 for a quarter note, to 8 for an eighth note. Other numbers such as 3, 5, 6, 7 are not permitted.

Here is an example of a time signature of 6/8:



This indicates that there are 6 beats per measure, and an eighth note gets a beat. In actual practice, however, this is usually performed as a triplet rhythm of two beats of three eighth notes per beat. Occasionally it is performed as three beats of two eighth notes per beat.

## MIDI Controllers

MIDI controllers are MIDI messages that are used to control various types of synthesizer functions that modify how music is played. Not all synthesizers respond to all controller messages in the same way. All controller messages are three hex bytes long: B0, the controller number, and the controller value. The last two values must always be 7F or less.

Here is a list of the most common controllers; use the Controllers Dialog to set up a new controller.

- 07** Main Volume 0=off 7F=maximum
- 0A** Pan (stereo position) 0=left, 3F=middle, 7F=right
- 40** Sustain (damper pedal) 0=off, 7F=on

An example of a controller to set the volume to maximum would be **B0 07 7F**.

A controller that sets the pan to middle would be **B0 0A 3F**.

## The Purpose of the `_default.lyr` File

`_default.lyr`, which is present in the same directory as `wlyra.exe`, is a file that is automatically loaded into Lyra when the program starts up. `_default.lyr` is a standard Lyra file and can contain any of the things that a Lyra file normally has. Normally, though, you will not want it to contain any notes. You can fill the instrument table, set up the volumes, the master tempo, and the like with the values you usually use.

If you don't want to use the features of `_default.lyr`, simply delete it.

## Volume Settings

Each track can have its own volume. This can be set using the track configure dialog box, using the volume tool in the toolbox, or setting up a controller. Probably the easiest method is to use the track configure dialog box. If you want to vary the volume of a track as music is played, then use the toolbox to place standard volume markers in the music. Of course, volume markers affect only the track in which they are placed.

A volume controller is a special MIDI message that tells a synthesizer to change its master volume for a given channel. Just before playing music, Lyra sends a volume control message for each channel, using the value set in the track configure dialog box.

Most synthesizers respond to standard volume markers and a volume controller in the same way. More sophisticated ones will change the quality of sound produced rather than volume with the standard volume markers. The reason for this is that Lyra uses **velocity changes** to implement volume markers. Most synthesizers simply interpret a larger velocity number to mean a louder sound. Some others, however, produce a different sound that may or may not be louder. An example is the piano: when you hit a key harder, the sound is louder but it also is brighter and you may hear some other percussive sounds associated with the key hitting bottom.



## The Menus

Select the Menu that you need information about:

File: commands that access the disk drive and printer

Edit: commands that are used to change the various parts of a music score

Tools: commands that duplicate the tool box.

Play: commands that affect how music is played.

## File Menu

**New:** This command is used to clear the music score. It does not change the time or key signature, master tempo, or clear the annotation, instrument controller tables, or lyrics.

**Open:** Load in an existing music score from disk using this command.

**Save:** Save the music score as a file on disk.

**Print:** Print music on the default printer. Before printing, set the **Note Display** mode in the Preferences box to a mode other than **compact**. This version will print only one page at a time, and the ABORT button does not work.

**Exit:** Quit Lyra and return to Windows. If the music score currently in memory has been changed, Lyra will first ask if you want to lose the changes.

## **Edit Menu**

**Copy:** Not yet functional.

**Cut:** Not yet functional.

**Paste:** Not yet functional.

**Annotation:** Use this command to enter any information about the music you wish, such as a copyright notice or directions on how the music is to be played. It will be saved with the music.

**Lyrics:** Enter and edit lyrics for track one; more information in the [Lyrics Dialog Box](#) topic.

**Goto:** Adjust the music score display so that the bar number you give is the first measure displayed.

**Preferences:** Modify certain parameters that change the way Lyra works. See the [Preferences](#) topic.

**Filter:** Prevent Lyra from displaying and playing certain types of music information. See the [Filter](#) topic.

## **Tools Menu**

The **Tools** menu duplicates the tool box at the bottom of the screen. It provides an alternate way of selecting the various tools as well as listing the keyboard shortcut keys for each tool.

See the [tool box](#) topic for more information on how the individual tools work.

## Play Menu

**Play** - see the [Play Music](#) topic.

**Tempo** - set the speed at which music is played as the number of quarter notes per minute.

**Transpose** - specify how much music will be transposed when it is played back in terms of half steps. For example, entering **-4** will make the music be played 4 half steps lower. When the transpose amount is not zero, then a check mark will appear on the menu to remind you when you play music.

## **Empty Instrument Table Alert**

This message means that the instrument table does not have any entries. Consequently, you cannot select an instrument to place it in the music score.

You can set up the instrument table by clicking the right mouse button while the cursor is positioned over the Instrument tool or by pressing the SHIFT+I keys.

More information about the instrument table may be found in the Instrument table topic.

## **Empty Controller Table Alert**

This message means that the controller table does not have any entries. Consequently, you cannot select a controller to place it in the music score.

You can set up the controller table by clicking the right mouse button while the cursor is positioned over the Control tool or by pressing the SHIFT+C keys.

More information about the controller table may be found in the Controller table topic.

## **Exit Program Alert**

This message appears when select Exit from the File menu, double click on the system button, or press CTRL-X, and you have modified the music score.

If you wish to save your music before exiting, select the **Ok** button; selecting the **Cancel** button will result in exiting Lyra without saving your music.



## **How to change instrument sounds**

You can use the Track Setup dialog box to set a different instrument sound for each track. You will notice that an instrument assignment can be made only if the track assignment is not the same as another track. In other words, each track that has its own instrument sound must also have its own unique channel number.

If you wish to change the instrument sound for a track while music is playing, you will need to use the Instrument tool, which is discussed in the Toolbox topic.

## Playing multiple instrument sounds

Music in Lyra is organized into eight tracks, and each of these tracks can be set up so that it has its own instrument sound.

First of all, the music device must be capable of playing more than one sound at the same time. The Sound Blaster and most recent MIDI synthesizers have this capability.

Secondly, you must determine what the program change numbers are that correspond to the instrument sounds you want to hear. The synthesizer manufacturer's manual should give you this information. This number must be entered into the **Instrument** box on the Track Setup dialog box.

Last of all, make sure that each track that has its own instrument sound has a unique channel number (also set up in the Track Setup dialog box).

## How to use Lyra as an 8 line mixer


The Track Setup dialog box has provision for setting a **Master Volume** and **Stereo Position** for each of the eight tracks. If a track has its own channel number, then you can adjust the volume and stereo position for that track.

## Hexadecimal Numbers

Hexadecimal numbers are based on the number sixteen. Decimal numbers, which everyone is familiar with, are based on the number ten. Each digit in a decimal number is a multiple of a power of ten. The first three powers of ten are 1, 10, and 100. The number 213 actually means  $3 \times 1$  plus  $1 \times 10$  plus  $2 \times 100$ .

In hexadecimal (or hex for short), when you reach the number ten, there are new digits up to the number fifteen. This is how you count to sixteen: 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, A, B, C, D, E, F, 10. Notice that the letters A through F represent the numbers ten through fifteen, and that 10 no longer means ten, but sixteen. To avoid confusion with regular decimal numbers, hex numbers usually have a \$ in front or an h behind, like this: \$7F or 7Fh. Each hex digit is a multiple of a power of sixteen. The first three powers of sixteen are 1, 16, and 256. The hex number 35 is the same as  $5 \times 1$  plus  $3 \times 16$ , or 53 decimal. The hex number BA is the same as  $10 \times 1$  plus  $11 \times 16$  or 186 decimal.

f this is the Volume tool

 this is the Tempo tool



this is the Instrument tool

`0va` this is the octave tool



$P_{\text{ed}}$  this is the controller tool

# this is the sharp symbol

b this is the flat symbol

↳ this is the natural symbol

⌘ this is the tie symbol

- this is the dot symbol

**3** this is the triplet symbol

Select a track by clicking on the box at the top right corresponding to the track you wish to select, or press CTRL+the track number key (such as CTRL+1 for track one).



The track parameters may be modified by clicking the right mouse button on the corresponding track box at the upper right, or pressing the SHIFT+CTRL keys with the key corresponding to the track (such as SHIFT+CTRL+3 for track 3).

A measure is a group of notes that last a certain number of beats (defined by the time signature) and is enclosed by vertical barlines on the music staff.

A music device can be an internal FM synthesis card such as the Sound Blaster, or an internal MIDI interface card that connects your computer to a MIDI synthesizer. Such a music device must be correctly installed in Windows.

1	2	3	4	5	6	7	8
---	---	---	---	---	---	---	---



A **status byte** is the first number in a group of numbers that is a MIDI message. This number is always greater than 127 (or 7F hex). All of the other numbers are less than 128 (or 80 hex). The status byte identifies the type of message that follows, and the channel number. Types of messages include note, control change, program change, pitch wheel, and others.

There are 16 MIDI channels. Most MIDI messages can be assigned to a channel. Messages that change a controller or instrument sound (program change) will affect only a single channel. For example, if you send a message to set a piano sound on channel 2, then only notes in a track that has a channel assignment of 2 will be affected and sound like a piano.

A chord is a group of notes that sound simultaneously, usually producing a harmonious effect.



## The Filters Dialog Box

**How to get here:** Select the **Filters** command from the **Edit** menu.

When one of the boxes in this dialog box is checked, that musical symbol is not displayed or played. This can be used to improve legibility of a print-out or to disable instrument changes when you're trying to play a file that was created for another synthesizer.

## The Controllers Dialog

**How to get here:** Press the **SHIFT+C** key or click the right mouse button on the controller tool (see the [Toolbox](#) topic for more information about tools).

This table must be set with up the correct information before you can use a controller tool.

There is space for 16 controllers. First is the controller name; make it something that describes what the controller will do. The name can be up to 15 letters long.

Next is the controller data. This data is sent to the music device to control various things like the master volume stereo position (also known as pan), sustain pedal, etc. The controller data is entered as hexadecimal bytes. Each byte must be two digits long and followed by a space. For example, **b0 07 00** is the controller data to set the master volume to zero. See the [MIDI Controllers](#) topic for more information about the numbers to use.

You can enter multiple MIDI messages for a controller; the only restriction is that you cannot use system exclusives (they begin with F0 and end with F7).

Most MIDI status bytes have the channel number encoded in the second hex digit. When Lyra plays a controller, it replaces the channel number in the data area with the channel of the track in which the controller is entered. For example, entering **B0 07 3F** produces the same result as **B7 07 3F**.

You will need to consult your synthesizer manual for the correct numbers to use here. Remember that the [Track Configure](#) dialog box lets you set the most frequently used controllers.

More information about volumes in [Volume Settings](#) and controllers in [MIDI Controllers](#).

## The Volumes Dialog

**How to get here:** Press the **SHIFT+V** key or click the right mouse button on the Volume tool (see the [Toolbox topic](#) for more information about tools).

Here is where you can set the actual volume associated with each volume symbol. The volume must be a number from 0 to 127. Lyra plays volumes as changes in the note velocity. If you wish to use a control volume change, use the [Control tool](#). More information about volumes in [Volume Settings](#).

## The Instruments Dialog

**How to get here:** Press the **SHIFT+I** keys or click the right mouse button on the Instrument tool (see the Toolbox topic for more information about tools).

The **Instruments Dialog** lets you modify the instrument names and the program change numbers associated with each instrument. There is space for 16 instruments, arranged in two columns. Within each column, the first space is for the instrument name. The second space (titled **Pgm**) is for the program change number.

The name that you give is entirely up to you. Only the first 15 letters in the name will be saved. If the name is blank or starts with a space, that instrument will not be listed when the the instrument tool is clicked on.

The program change number is the actual number that is sent to your synthesizer to change the sound that it makes. This number depends on the synthesizer and you will have to consult the manual that came with your synthesizer to determine what numbers to use. Do not enter a program change number greater than 127.

Lyra assumes that the first program change number is zero; some synthesizers start at one. If your synthesizer is one that starts at 1, click on the radio button at the bottom of the list titled **Patches start at 1**. This will cause 1 to be subtracted from each program change number when you press the **OK** button.

## Configuring a Track

**How to get here:** Click the right mouse button on a track box or press Ctrl+Shift+a number key (1-8).

Each track can be configured so that it has a unique MIDI channel, volume, stereo position (pan), instrument (program change), and transpose offset. This makes it possible for you to play music on a multi-timbral synthesizer that sounds like a small band playing.

You can call up the track configure dialog box by clicking the right mouse button on one of the track boxes at the right upper corner of the window, or by pressing the SHIFT and CTRL keys with the number key corresponding to the desired track (such as SHIFT+CTRL+2 for track two).

Following is a description of each line in the **Track Setup** dialog box.

**Channel** - This can be any number from 1 to 16. This is the MIDI channel for the track. More than one track can have the same channel, but only the first track can be configured for volume, position, and instrument.

**Clef** - This will be used in future versions to permit multiple staves.

**Transpose** - The number given here is the number of half steps that are added (or subtracted) to each note pitch in a track when music is played. This is useful for transcribing music for an instrument whose concert pitch does not correspond to the written pitch.

**Master Volume** - Lyra sends MIDI control messages for each track to set a master volume for each track; 0 corresponds to complete silence, and 127 is maximum. More information about volumes in Volume Settings.

**Stereo Position** - Each track may be configured to play through the left or right speaker, or somewhere between. Zero corresponds to left, and 127 to right, and 63 to exactly between.

**Instrument** - The number entered here is sent as a MIDI program message just before music is played. Program messages are used to change the instrument sound that a synthesizer makes; you must enter the number corresponding to the sound you want. Consult the synthesizer manual for the needed information.

The Master Volume, Stereo Position, and Instrument lines will be disabled if the Channel number is the same as one used in a previous track. For example, if tracks 1 and 2 both are set to channel 2, then you will be able to modify those lines only in track 1. To remind you of this fact, a message (**set up in track 1**) will appear after the channel number for track 2.

## Signatures Dialog Box

**How to get here:** Select the key or time signature tool from the tool box.

This dialog box is used to change the key signature or time signature. This version does not support multiple key or time signatures within a music file (this is planned for future versions!).

The key signature is entered as a number followed by either **F** (for flats) or **S** for sharps. For example, the key signature of 3 sharps would be entered as **3S**. See the [key signature](#) topic for more information.

The time signature is entered as a simple fraction (such as **3/4**, **4/4**). More information is in the [time signature](#) topic.

## Tempo Dialog Box

**How to get here:** Select the **Tempo** command from the **Play** menu.

Here is where you can change the speed at which music is played (tempo). The number you enter is the number of quarter notes per minute. Entering 120 will result in music being played at the speed of 120 quarter notes per minute (or two quarter notes per second).

The tempo set here is called the master tempo. It is the tempo effect at the start of music. If you use the tempo tool to change the music after the start, the new tempo takes precedence.

## Transpose Dialog Box

**How to get here:** Select the **Tranpose** command from the **Play** menu.

Use this dialog box to transpose all tracks when music is played. The number you enter is the number of semitones that music will be transposed. For example, entering -4 will result in music being played 4 semitones lower.

If you wish to transpose only certain tracks, then use the [Track Configure](#) dialog box.



## Preferences Dialog Box

**How to get here:** Select the **Preferences** command from the **Edit** menu.

This is where you modify certain parameters that change the way Lyra operates.

**Note gray shade:** Enter a number (or adjust the slider) to change the intensity of the gray used to display unselected notes. The value 0 corresponds to black, and 255 is white. 164 is the value that Lyra uses by default. You can also use this to completely turn off unselected notes by entering the value 255. If you change the value of this box by typing a new value, and then press the **Enter** key, you will find that the new value did not get entered as intended. You can fix this by pressing the **Tab** key before the **Enter** key or selecting the **OK** button.

**Music Device:** This combo box contains all the names of the installed music devices. Just select the one you want. If no device has been installed, **(none)** will appear and you will not be able to open the combo box. This version also includes a **FILE** device; this is used for debugging purposes and will be deleted in the future. The **MIDI Mapper** device is not yet functional.

**Note Display:** This combo box allows you to select the way music will be displayed. You can select **Compact**, which is default display; each note length is given the same space. The remaining selections space notes and rests according to their length. A longer note is given more space.

## The Lyrics Dialog Box

**How to get here:** Select the **Lyrics** command from the **Edit** menu.

Lyrics may be added to a song by the use of this dialog box. This version allows lyrics only for track one, and they are displayed above the music. Simply position the music display so that it is at bar 1 or the first note in track 1. Call up this dialog box and type in the lyrics. Be sure to put a space between all syllables that you want assigned to separate notes. For example, typing **heavenly light** as **hea- ven- ly light** will put the words on four different notes, whereas **heavn- ly light** will put the words on only three notes. If you want to skip a note (no word for it), just type in an extra space.

Editing lyrics requires only that the words be currently displayed. If no words are displayed, move back in the music until words appear. The lyric editor dialog box will contain only those words that start with what is displayed. Make any changes you want, select the **OK** button, and you will see the display changed accordingly.

You can turn lyric display off by selecting the Lyric filter.

