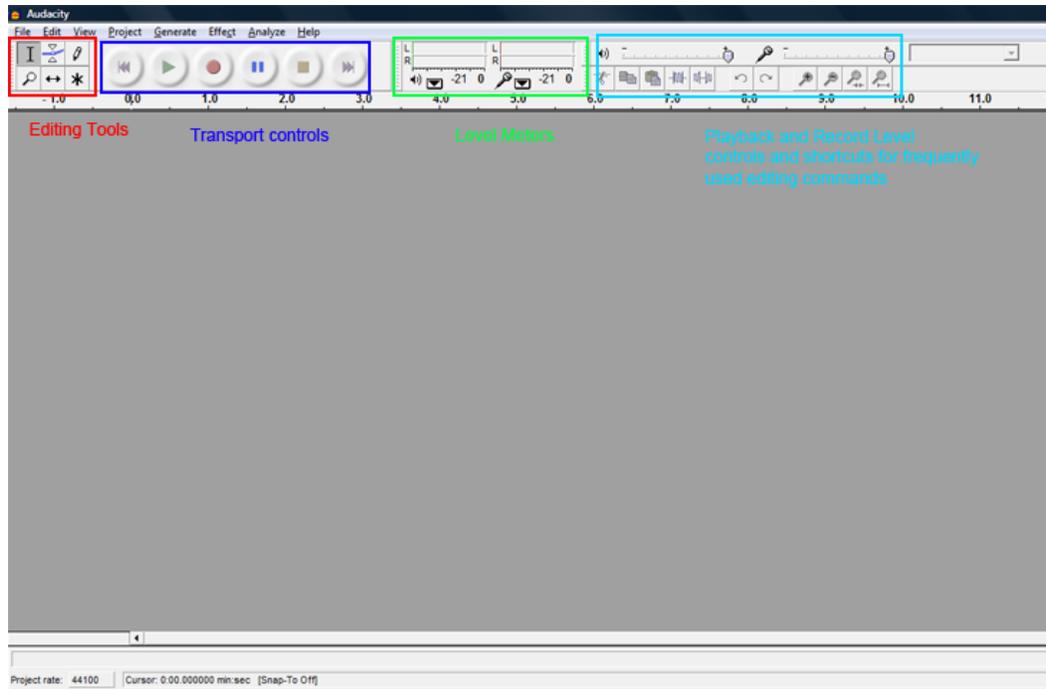


Working With Audacity



Audacity is a free, open-source audio editing program. The major user interface elements are highlighted in the screenshot of the program's main window below.



- The **editing tools** are used to edit audio files and will be explained further below.
- The **transport controls** function in the expected way; that is, as a tape recorder, allowing you to play, stop, pause, or record audio as well as jump to the beginning or end of an audio track.
- The **level meters** show you the audio levels of the sound being played back or recorded in decibels.
- The **sliding controls** on the right allow you to adjust playback or recording levels, and beneath them is a toolbar with buttons for common editing commands (left-to-right: cut, copy, paste, trim, silence, redo, undo, zoom in, zoom out, and fit selection / project to window).

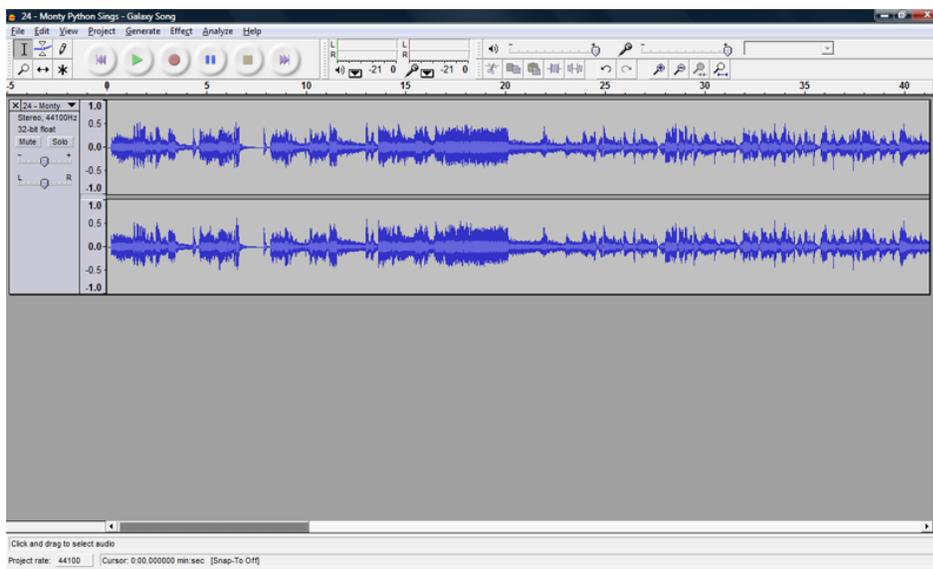
Introduction to Audacity

You can **import audio tracks** from sound files by selecting File -> Import Audio and using the standard open dialog box.

Audacity can read the following audio file formats: WAV, AIFF, AU, MP3, and Ogg Vorbis. You will most likely encounter WAV and MP3 files. AIFF and AU are uncompressed audio formats (like WAV) usually found on UNIX workstations or Macintoshes; Ogg Vorbis is a compressed audio format, like MP3, based on a royalty-free, open-source algorithm (unlike MP3).

 **Note:** Importing audio files will take some time, depending on how large they are, and Audacity provides a progress bar showing this.

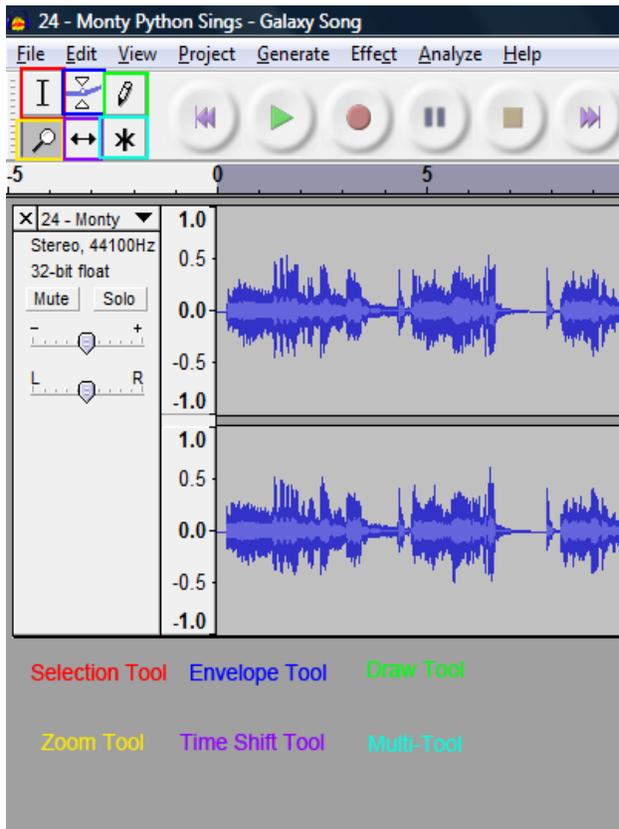
Importing an audio file creates a new **track**, which can be seen below. It's important to remember the distinction between files and tracks. One Audacity project can contain many tracks, which can be used to build up complicated audio programs.



The track displays a **waveform** of the audio file. The x-axis represents **time** (in the screenshot above, in seconds—zooming in will give you finer granularity) while the y-axis represents the **amplitude** of the audio waveform. The amplitude scale is relative, from 0 to 1, with 1 representing the point at which the audio will **clip** (become distorted).

Controls to the left of the waveform in the track window display the name of the track (which you can change) and the audio format (in this case stereo, 44.1 kHz sample rate, 32-bit). In addition, you can **mute** or **solo** the track, which is useful when dealing with multiple tracks, and you can adjust the track's playback volume and balance.

Let's take another look at the available **editing tools**:



- The **Selection Tool** works more-or-less like the selection tool in a word processor: with it, you select parts of the audio file to manipulate.

- The **Envelope Tool** allows you to draw an envelope on the audio track to control the volume of various parts of the track (for more on this tool, see the "Using the Envelope Tool" section).

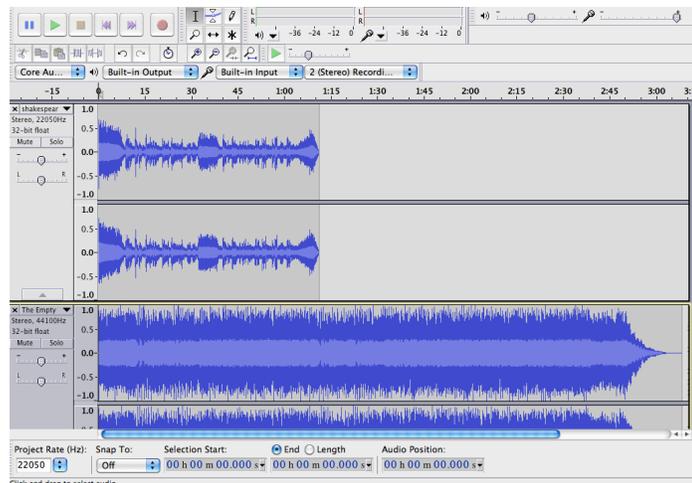
- The **Draw Tool** allows you to manipulate audio samples when sufficiently zoomed in.

- The **Time-Shift Tool** allows you to move selections along the x-axis (time). The multi-tool allows you to select and draw an envelope at the same time.

Once you've selected a section of the audio track (pictured below), you can cut, copy, and paste it, just like in a word processor, either to a different position in the same audio track or into a new audio track. Available editing commands are found in the Editing menu, and a number of included effects are available under the Effects menu.

Adding a New Track

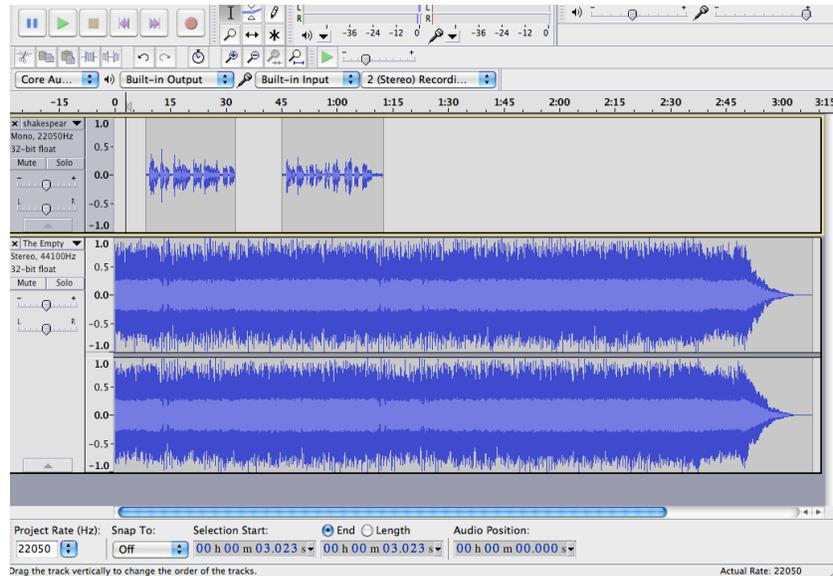
Let's add another track: Go to File --> Import, and choose the music track you downloaded for class today. You should now see two tracks displayed.



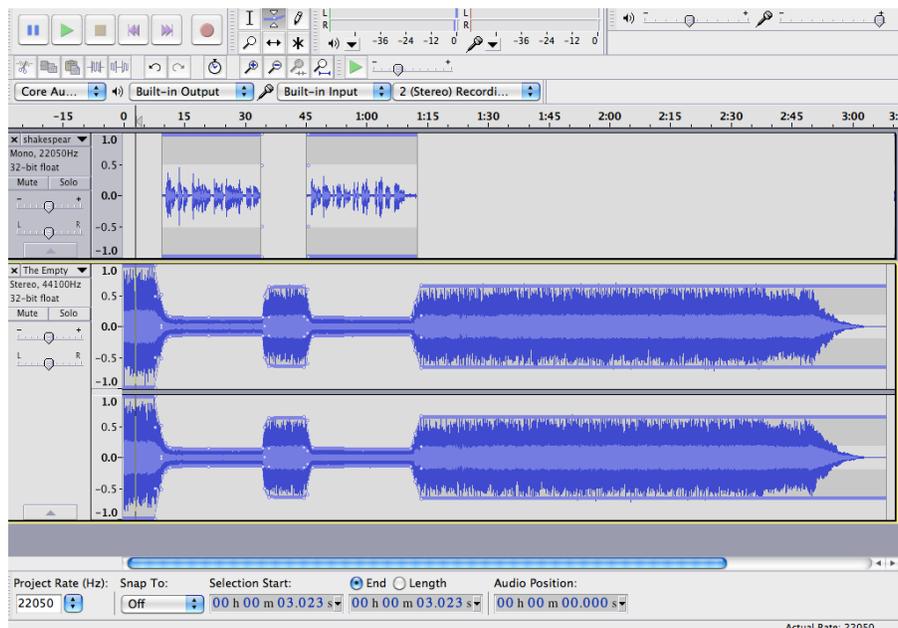
Editing Tracks

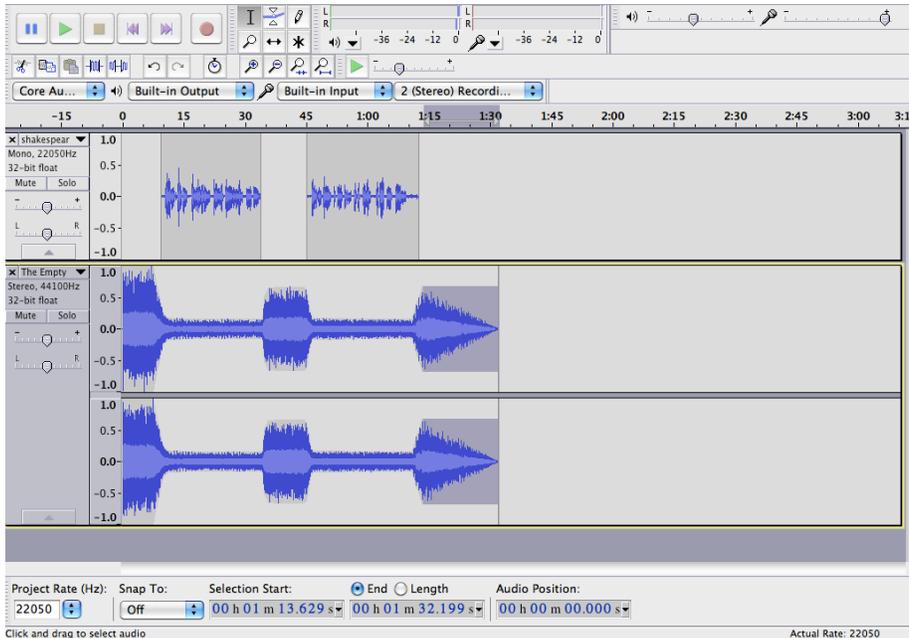
Now let's shift the sonnet track down a bit. Select the time shift tool to move the track down a few seconds on the time line.

The split tool will allow you to break a track into two separate pieces. Let's split the sonnet around the 24 second mark (look at the waveform to see where the speaker pauses). Move your cursor to that point, and then go to Edit --> Clip Boundaries ---> Split. Your sonnet track is now in two pieces; move the second piece over a few seconds using the time shift tool.



We can use the envelope tool to control the volume of the music track. Select the tool, then use it to adjust the volume of the music track so that it gets quieter while the sonnet track plays.





Now, let's cut the end of the music track and make it fade out a bit. Use the selection tool to highlight the last few minutes of the song, leaving a bit of audio after the sonnet track. To make the music fade, select the remaining audio at the end, then go to the toolbar option Effect --> Fade Out.

Saving and Exporting

Finally, Audacity makes a distinction between 'Audio Projects' and 'Audio Files'. Saving your work through the File->Save menu will save an Audacity project (.aup) file. This will keep all your tracks and edits intact and will allow you to continue working where you left off.

However, for your project to be playable in a standard media player (such as Windows Media Player, iTunes, etc.), you will need to **Export** your project instead. There are several options for this in the File menu.

- WAV files are uncompressed but are playable almost universally.
- MP3 files are much smaller, but require the LAME MP3 codec to be installed in a location known to Audacity. If the "Export as MP3" menu option complains about LAME not being installed, follow the directions to install LAME and try again.