Applies To:	Windows	Mac OS X	Linux

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Audacity Essentials

By: Steve Sloan

Audacity is a digital audio editor application. Audacity is cross-platform. It is designed to provide a similar graphical user interface on several different operating systems.

Audacity was created by Dominic Mazzoni of Google, while he was a graduate student at Carnegie Mellon University. Mazzoni is still the main developer and maintainer of Audacity, with help from many others around the world.

Audacity can be downloaded and installed from the Audacity Website run by Sourceforge. You will need to be an Administrator on the computer you wish to install on.

You will need to pick the operating system you are using and also down loaded and install the LAME MP3 encoder to go with your computer.

You can use and get Audacity for free

Because Audacity is open source software, you can download it from the Internet and use it for free on your own computer, as well as use it on the computers in the lab. You will need to install two software components to use Audacity, especially if you intend to use the software for podcasting. The first component you will need is the Audacity software itself. You will also need to download the LAME encoder. This encoder is a critical component for putting your audio file in the MP3 format you should use for your podcast. One of the places you can download the software is at audacity.sourceforge.net. You will need to pick the proper version of the software for the computer and the operating system you are using.

Audacity Installation and Configuration

Installing Audacity and LAME

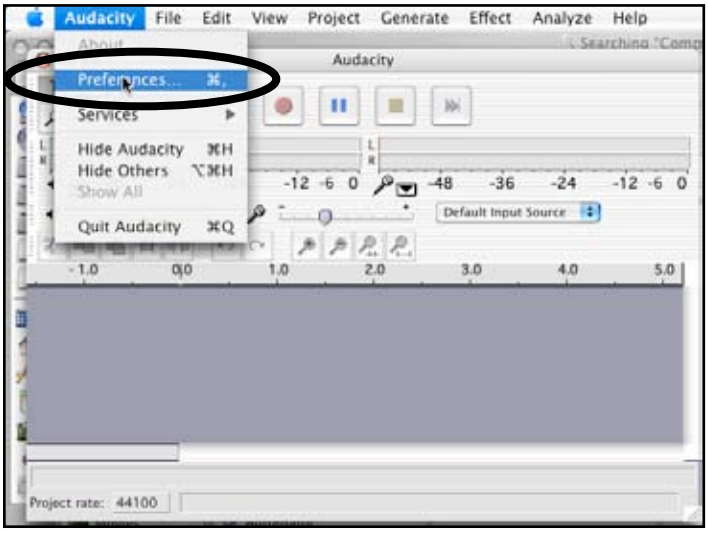
You can skip this stage if Audacity and LAME have already been installed and configured (as they should be on lab computers.) Since it is free we have included these instructions in case you want to get your own copy.

Get Audacity Here	
Audacity Website	audacity.sourceforge.net
Other Source	versiontracker.com

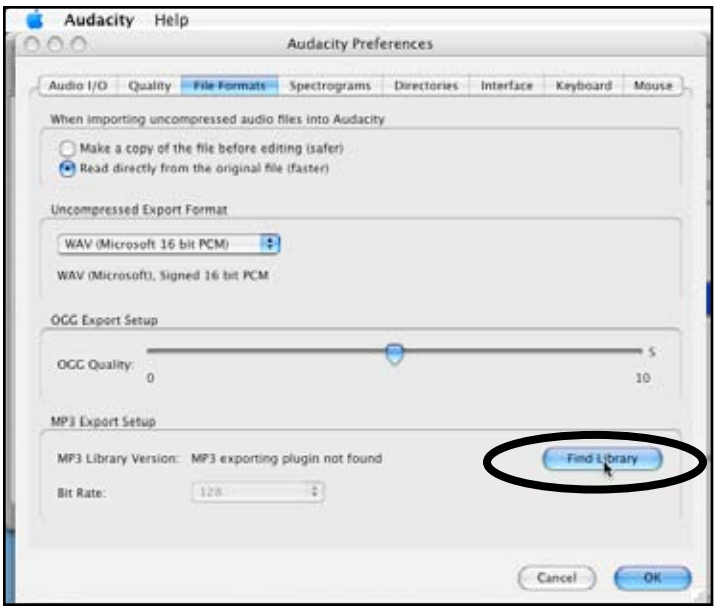
The Audacity Website at Sourceforge has tutorials and other documentation to help you download, install and use Audacity.

Helpful Hint

When installing Audacity and LAME try to make sure both packages go into the same folder. On a Mac OS X computer this can be done by creating a folder on your Applications folder and naming this folder Audacity. Then drag the items in the disk image (.dmg) file that the online installer creates. Then when you download the proper LAME encoder files for your system, put the LAME library file in this Audacity folder.

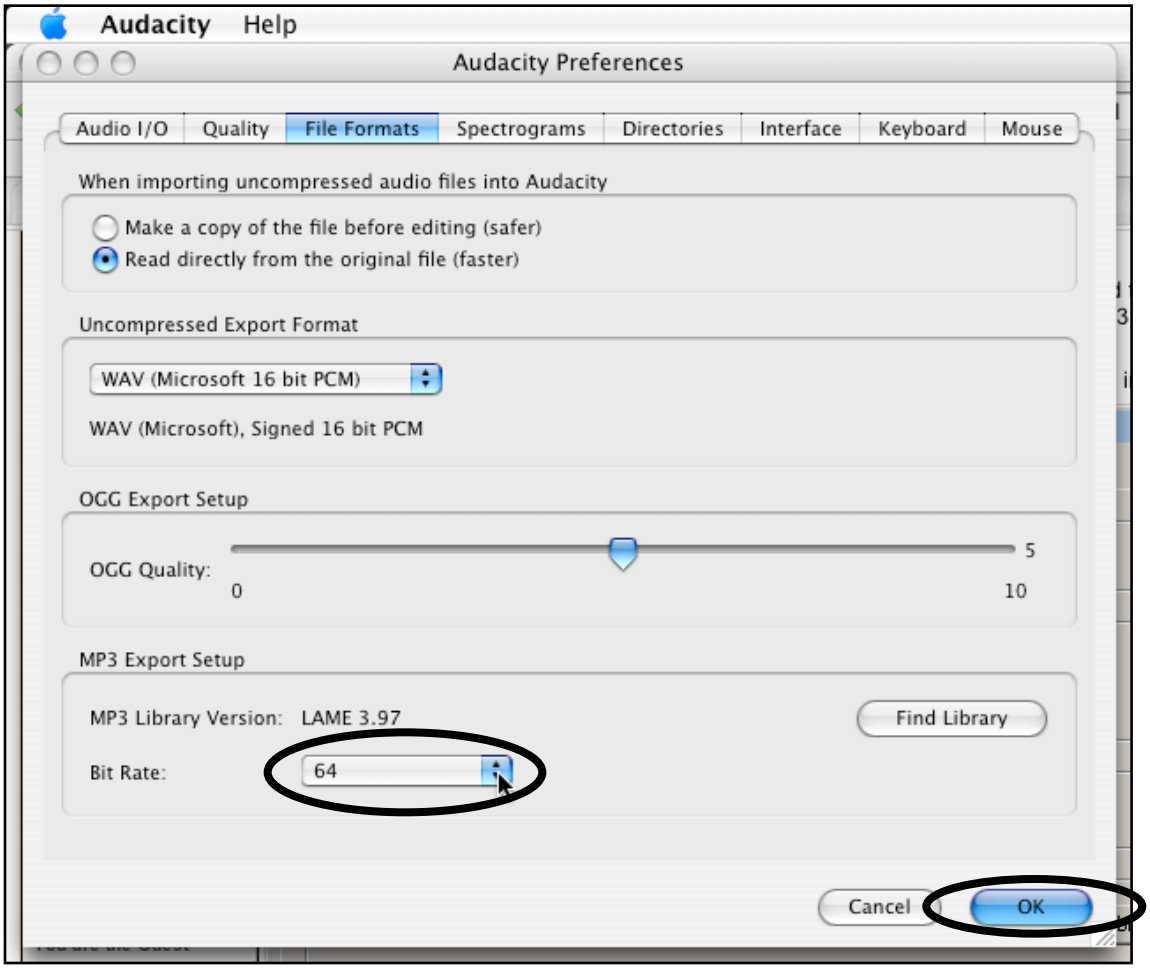


Once you have installed both Audacity and the LAME encoder you need to configure the encoder before you will be able to make the MP3 files you will need. This is done in the Preferences item of the Audacity menu. Launch Audacity and before you load any audio in it, configure this setting.



The LAME encoder is considered a Library. You will need to click on the Find Library button in the File Formats preference pane. Finding the Library is easy if LAME has been put in the same folder that Audacity is in.

When you click on the Find Library button you will be prompted to find the LAME encoder library file. Finding this library file is easy if it is in the same folder.



After you load the LAME encoder library file you need to set the bit rate. The lower the bit rate the smaller the file. Since podcasts are files that are downloaded the smaller the file the easier is for your audience to download your audio and the less room the files will take on their ipods. That is good. But, the lower the bit rate the worse the sound quality. That is bad. 64 is a compromise bit rate setting between small file size and reduced sound quality.

Using Audacity

You can record audio directly in Audacity. But, that is not what it does best. Audacity is best used for for editing an audio track, or tracks, that has/have been recorded elswhere, typically with some sort of field recording device. The better the equipment you use for field recording the better your finished audio will be.

A Marantz PMD 660 field recorder.

Getting audio into Audacity

Most digital audio recorders offer a way to get audio into a computer using some sort of USB connection. Some have non-interchangable internal storage and a built in USB interface. Other recorders are similar to digital cameras in the sense that they use the same sort of removable memory cards and sticks (like the cameras use.) These cards and/or sticks can be put into USB card readers that plug into the computers. The USB device then mounts like a drive on the computer. The audio files can be dragged onto the computer where they can be opened in Audacity.

Audacity will likely not be the default player for the audio files on your computer. You can open the files from the file menu in Audacity, or on a Mac you can hold down the control key and click and hold on the file. Then, before you release the mouse, select Audacity as the program to open your file. (You did record in WAV or some other non-lossy format, right?)

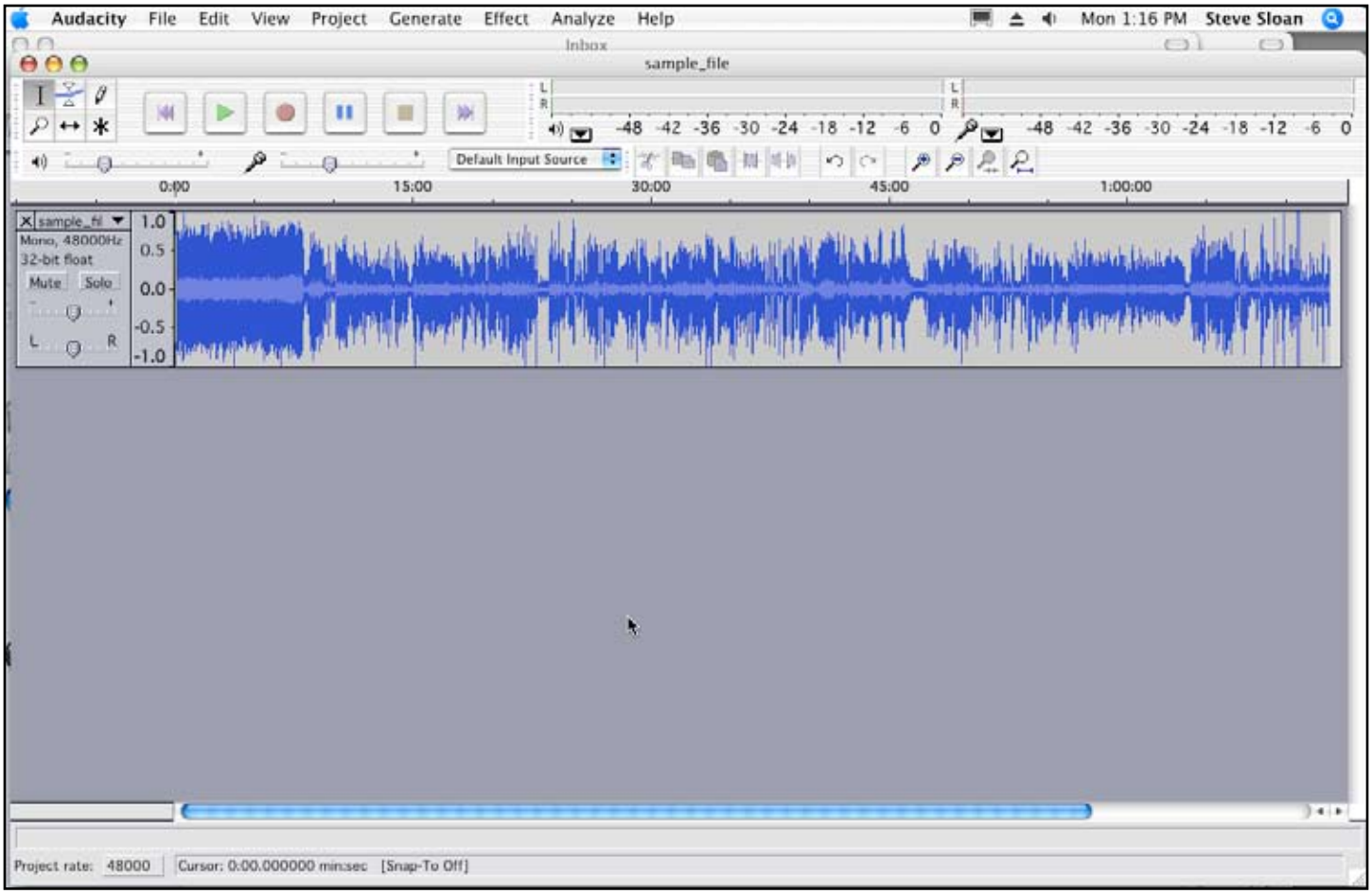
About formats

MP3 files are great for audio output because MP3 features generally adequate quality and greatly reduced file sizes. Plus, MP3s can be played on almost any kind of device. In fact devices that play digital audio files are often called MP3 players. This says a lot about the ubiquity of the MP3 format.

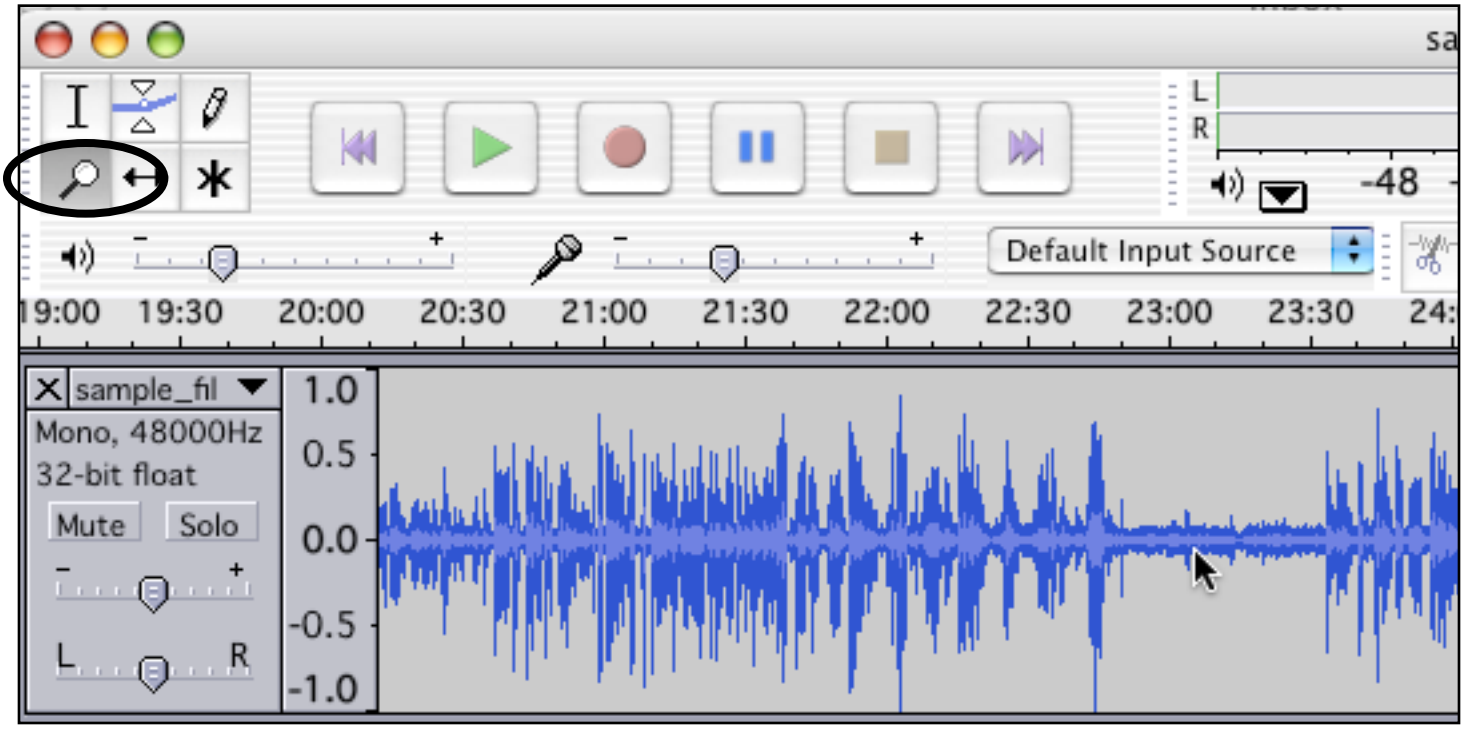
This makes it a great format for output and distribution of finished content. What is NOT good about MP3 files is that MP3s are lossy. MP3s achieve their small file sizes by compression and discarding data. Just as photos loose detail when they are compressed into JPEGS, so too does audio loose detail when compressed. Once this data is discarded from an audio file it is gone forever. This makes MP3 a lousy format for input of audio into Audacity. MP3 is good for output and not good for input.

If you are recording audio you should record in the highest bit rate your device is capable of and, if possible, use a non-lossy format such as WAV for input.

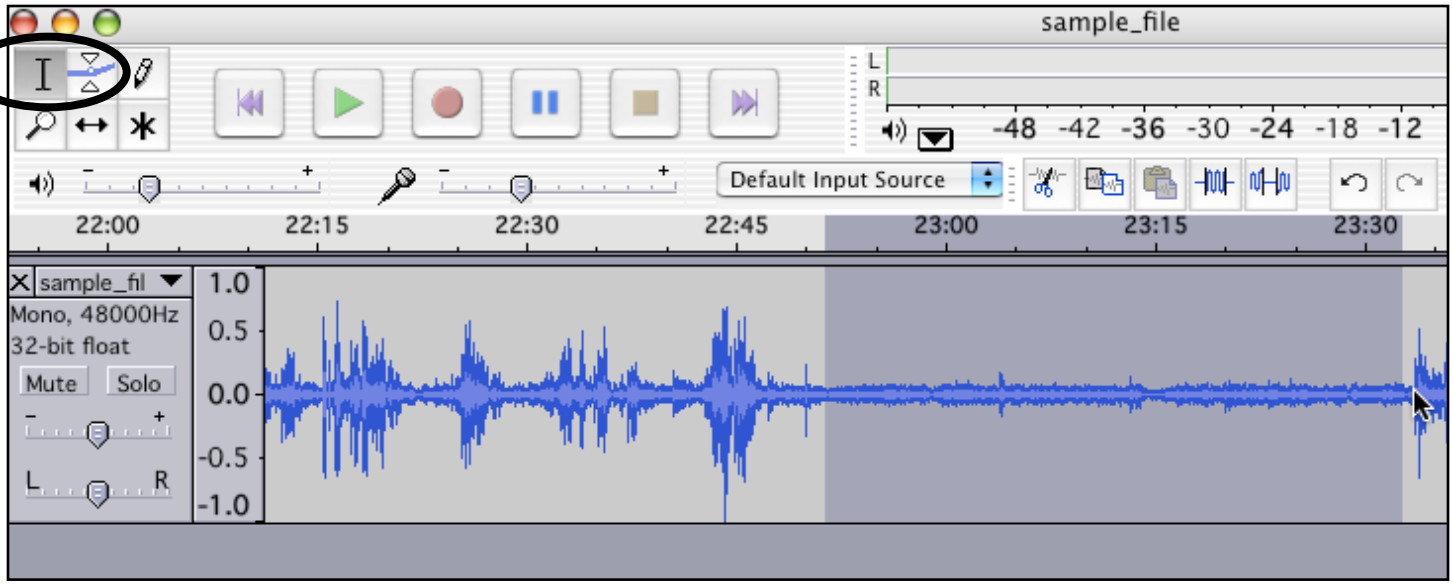
Opening an audio file in Audacity.



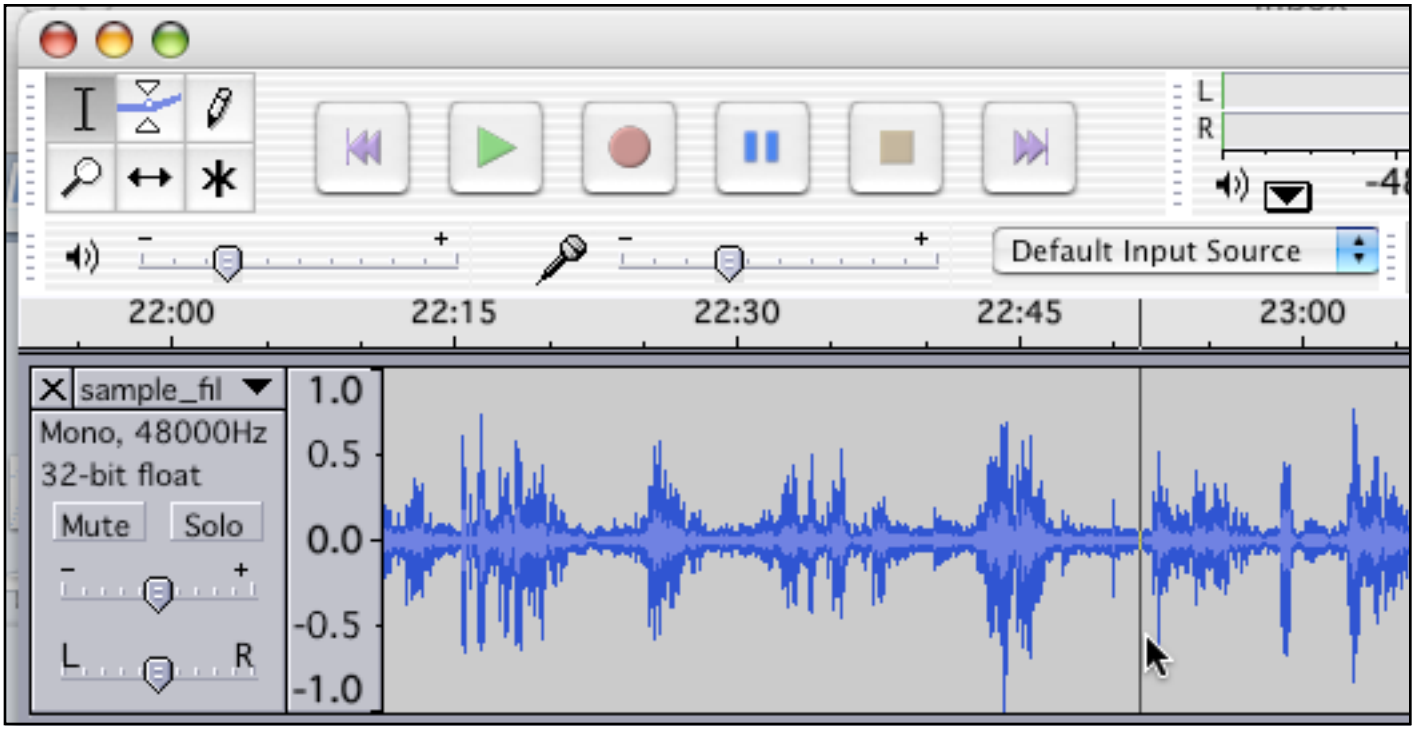
When you open an audio file you will be able to see the wave form of that audio file. The higher the peak and valley of the audio wave the greater the volume of the audio at that point.



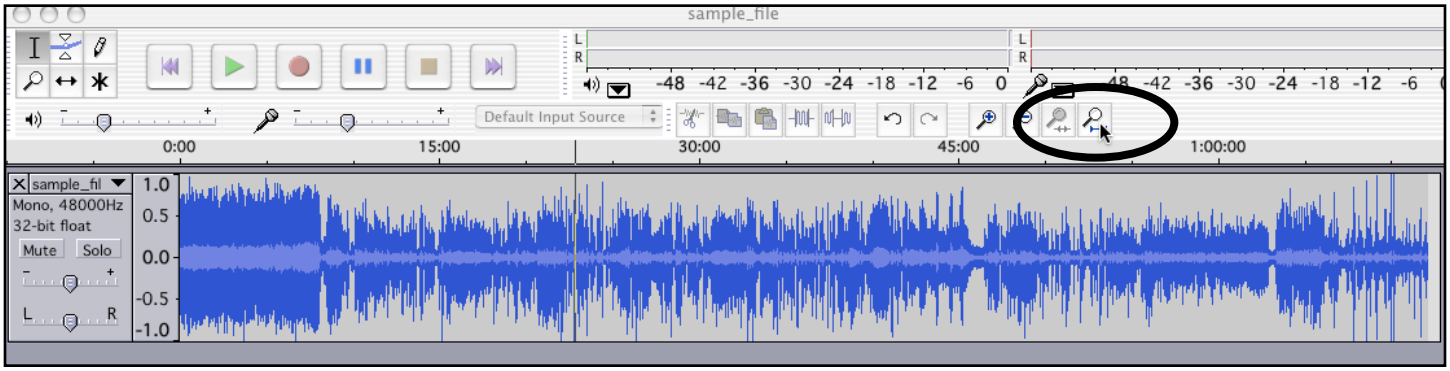
Using the magnifying glass icon you can zoom in on parts of your audio file. Periods of silence, coughs, ums and ahs can be highlighted and deleted and sounds can be cut and pasted into other parts of the audio file or pasted into other audio files. Obviously, there are ethical determinations that you may need to make in deciding how much of this to do.



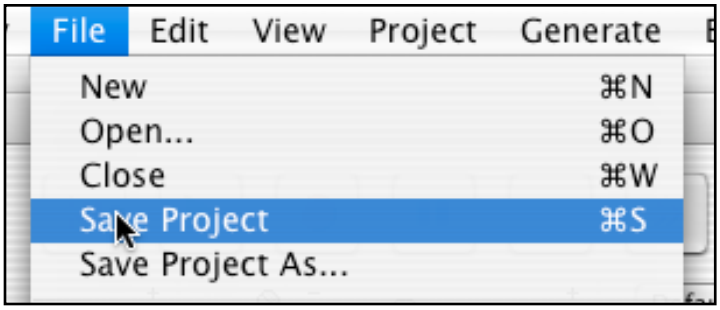
Parts of the audio can be selected with the selection tool. This way audio can cut, copied, moved and/or deleted.



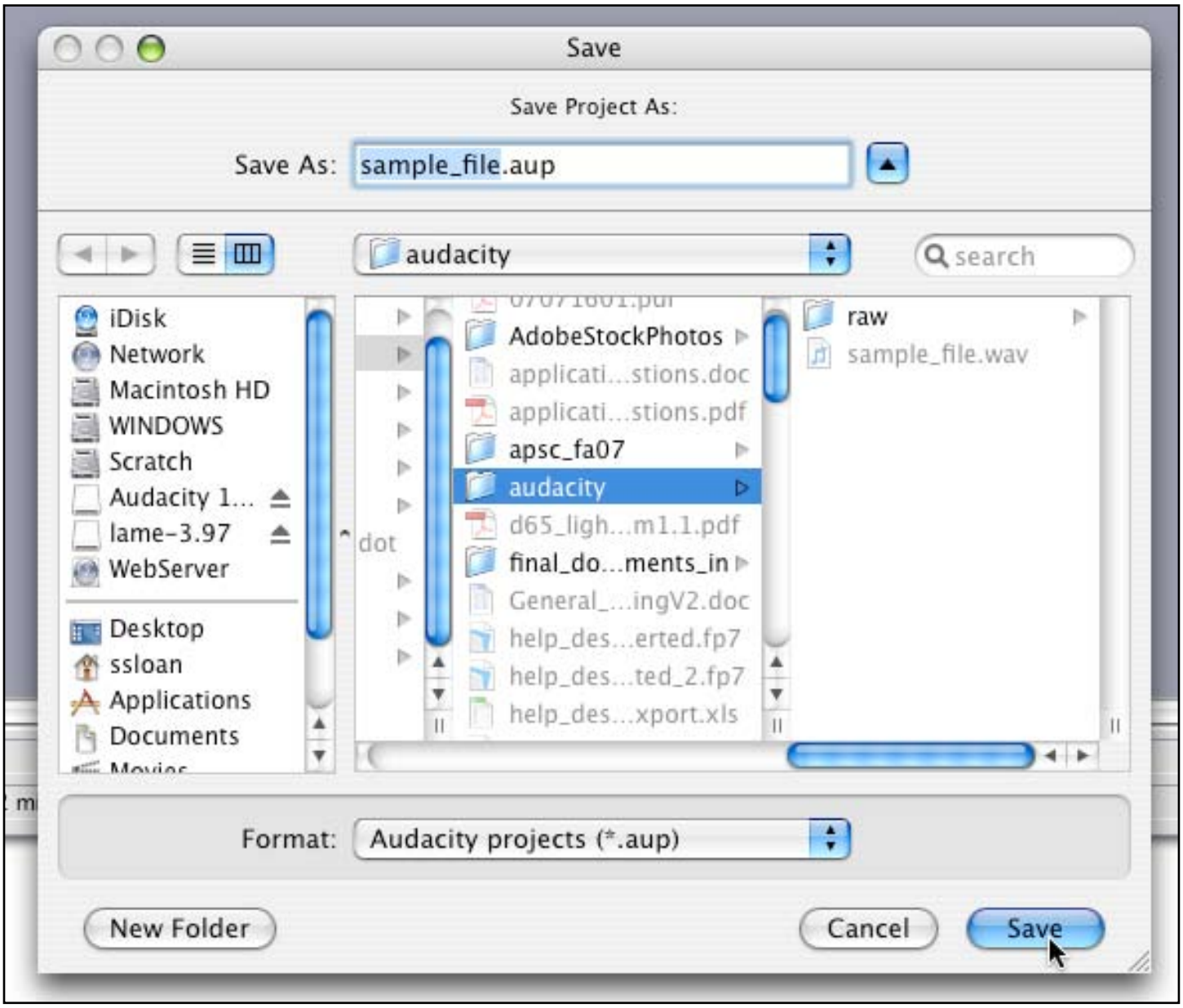
When a section of audio is deleted or pasted in, you should be careful to assure that the audio levels match at the splice points where the pieces come together or your audience may hear an objectionable pop.



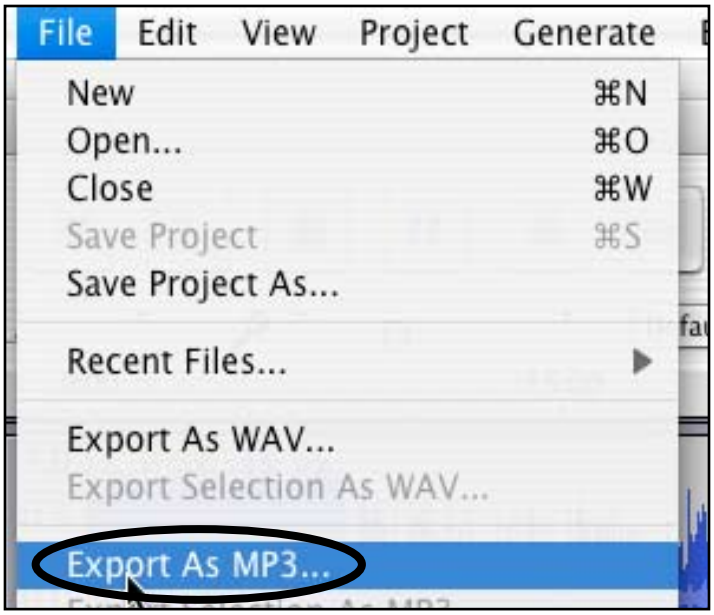
Using the zoom magnifying glass icons you can quickly zoom into your audio track or zoom out to navigate around your audio track.



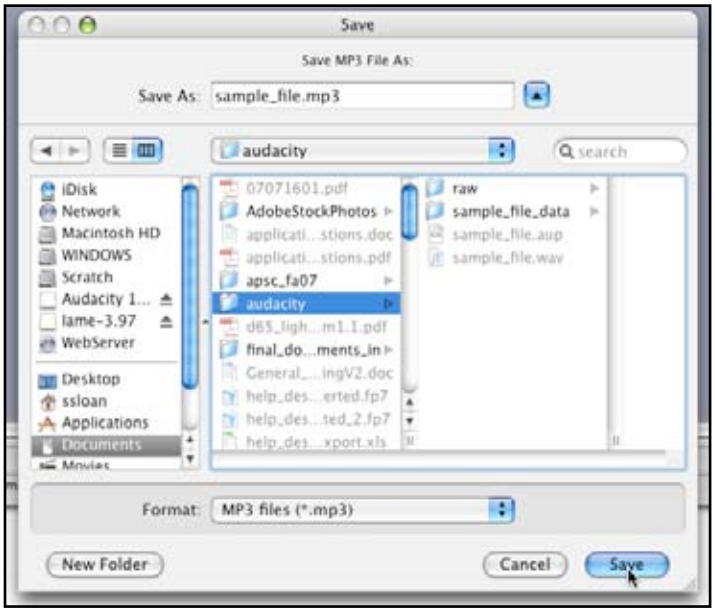
You should save your project as soon as you start making changes to your audio track. Save is located in the file menu and it saves your project as an Audacity package. Once this package is made you should NOT move your files until you are absolutely done.



Creating a folder for your project and keeping your material in one place is the best way to work. Saving your project is not the same as exporting your project. When you export your project it is put in a format that other programs can play. When you save it you are saving it in a format that only Audacity can play.

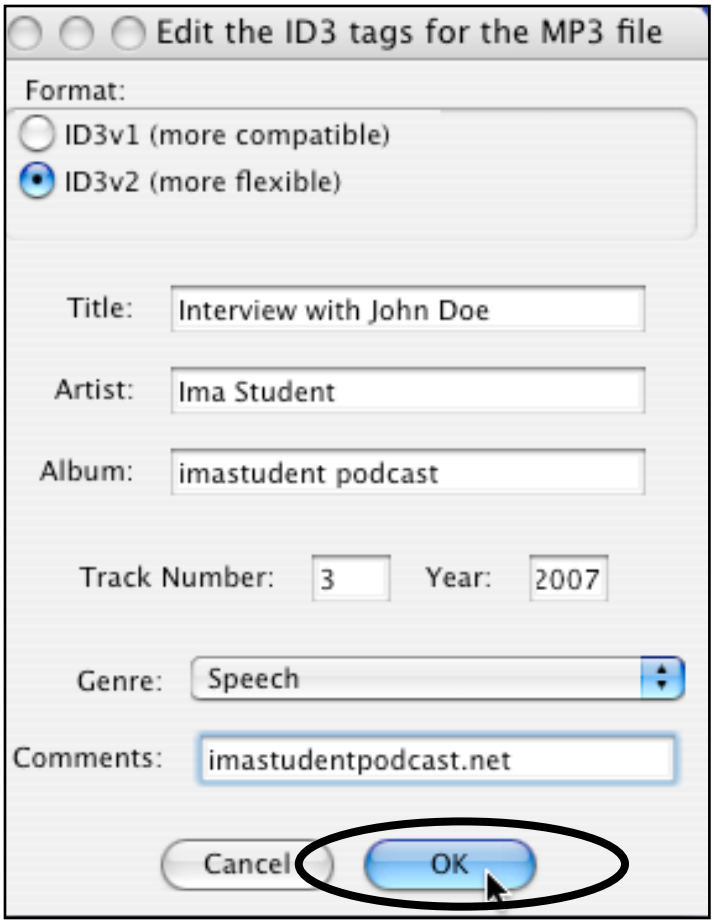


When you are done editing your audio you need to export it. If you plan to bring the audio into a channel mixing program, like Garage Band, you should export as the highest quality WAV file you can. If you are planning to put this track on the Internet as a podcast, export it as an MP3.

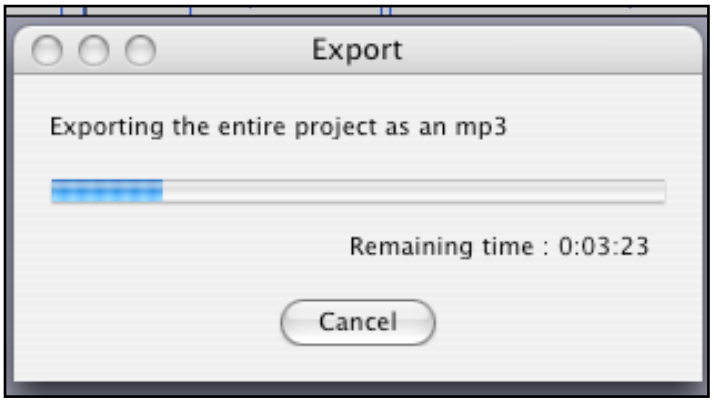


Be sure you save it in a place where you can find it.

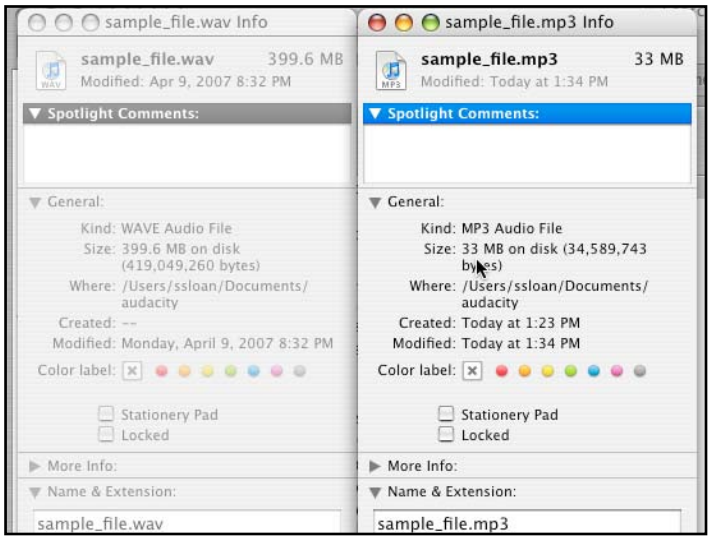
When you export as an MP3 one of the export steps is to create metadata about your audio track. This is information about the audio file. This is worth doing. This metadata is embedded in the file and stays with it. Many MP3 players can read this data and it allows people to know not only about the file but about you, the content creator. You can tell Audacity was not created for podcasting as Speech is a genre that is buried in the choice list.



Enter information that not only will tell people about your audio file, but that would help them to find you and more of the content you have created.



Depending on the size of your file, and the processing power of your computer, might take awhile for it to export. This might be a good time to go get a cup of coffee.



The end result should be an audio file that is edited the way you want, sounds great and has a greatly reduced file size.

Get More Audacity Information Here	
Audacity Website Help	http://audacity.sourceforge.net/help/documentation
Brown University Site	https://wiki.brown.edu/confluence/display/CISDOC/Audacity+Tutorial
Whitman Tech. Svcs.	http://www.whitman.edu/content/wcts/support/desktop/audacity
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