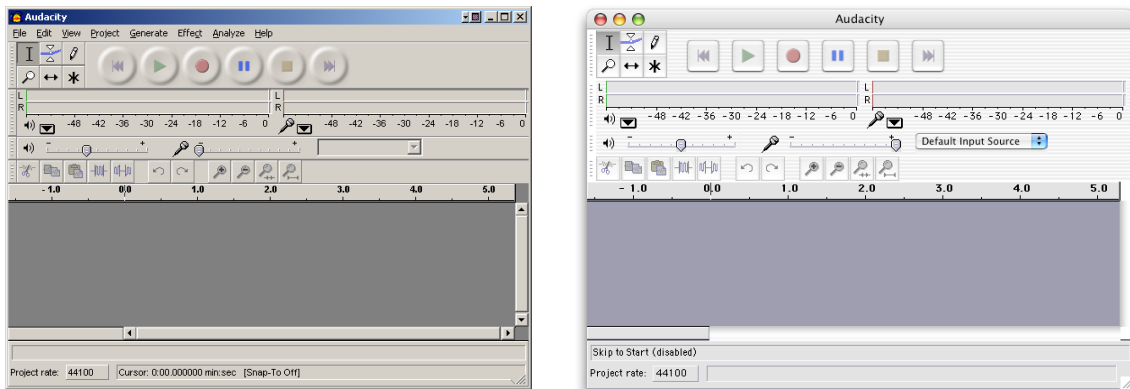


Simple Editing with Audacity

We'll only look at a small subset of Audacity's capabilities in these lessons, but it should be enough to get you started and meet your immediate needs.

Becoming Familiar with Audacity

Start Audacity by clicking on its icon. Your screen should look like those shown below. The Windows screen is on the left and the OS X screen is on the right. As you can see, they are virtually identical.



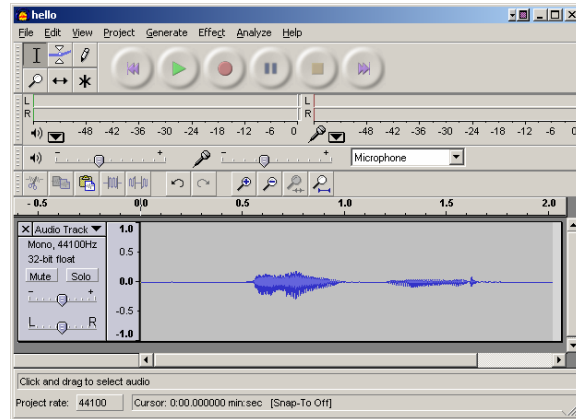
As with most programs, at the top is the Title bar followed by the Menu bar. Next, there are several rows of buttons and other controls. The first block of six square buttons is used to select editing tools. The top three are the Select tool, Envelop tool and Draw tool. The lower three are the Zoom tool, the Time-shift tool, and the Multi tool. In this tutorial, we will be primarily concerned with the Select tool so make sure it is selected.

To the right of the editing tools are the audio control buttons. These six round buttons (square on the Mac) should look quite familiar to you. They work the same way in Audacity that they do on most recording equipment. They are Skip to Beginning, Play, Record, Pause, Stop, and Skip to End.

Below these tools is the Meter toolbar which indicates the input and output levels. The Mixer toolbar, displayed below the Meter tool bar, is used to set input and output volumes and select devices. You can ignore both of these toolbars for now.

The last tool bar is the Edit toolbar, not to be mistaken for the editing tool selection buttons mentioned above. The first three buttons are Cut, Copy, and Paste and work exactly as you would expect. You can also use the keyboard shortcuts or the Edit menu to cut, copy, or paste. The next two buttons are the Trim and Silence buttons. We'll come back to these. Then come the Undo and Redo buttons. Again, these do exactly what you would expect. The last four buttons allow you to change how tracks are displayed. The first two are Zoom In and Zoom Out. The last two are used to expand and contract the timescale of tracks if they don't fit into the window.

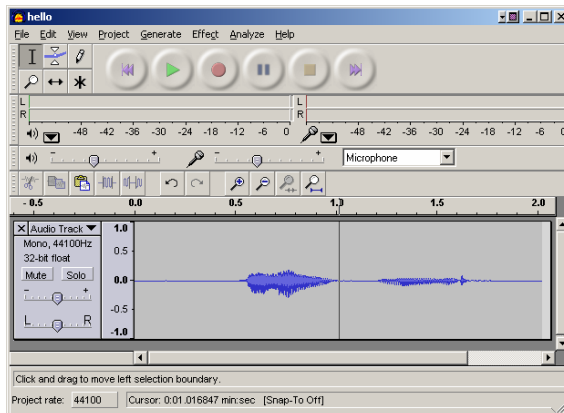
The lower half of the display is dominated by a large grey work area that has a timeline above it and scroll bars on the right and below it. At the bottom of the screen are two status bars. When you record audio, it is organized into audio tracks, one track for each recorded stream or channel. If you stop and then start again, the material you record will be displayed in separate tracks. Only one track is shown here.



Tracks provide a graphic display of the recording that makes it easier to locate and work with the individual sounds within a recording. In this 2-second recording, I've recorded two words, "hello" and "world", with a brief silence before, between, and after the words. The graph reflects the volume or intensity of the sound. The flat areas are silence and "hello" was spoken somewhat more loudly than "world". In fact, you should be able to make out the individual syllables in "hello".

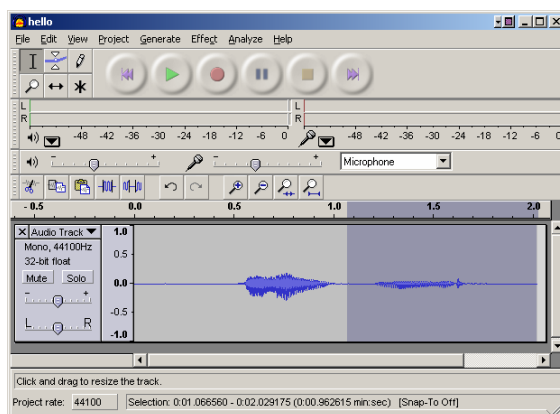
Exercise: Open the file *hello.mp3* (use Open on the File menu) and listen to the file using the Play button. Try pausing, rewinding, etc. (But for now, don't try recording anything. We will come to that shortly.)

By clicking on the track, you can position the play point within the track. (Make sure the Selection tool is selected.) In this figure, I've clicked between the two words at about 1.0 second. Notice that a vertical line indicates the current position in the track.



By dragging the insertion point across a region, you can select part of a graph. In the next figure, I've selected the word "world" along with the silence that follows it.

If you press the Delete key (or select Cut on the Edit menu or Edit toolbar or press CNTL-X) that section will be deleted from the track. If you delete something and change your mind, Audacity will allow you



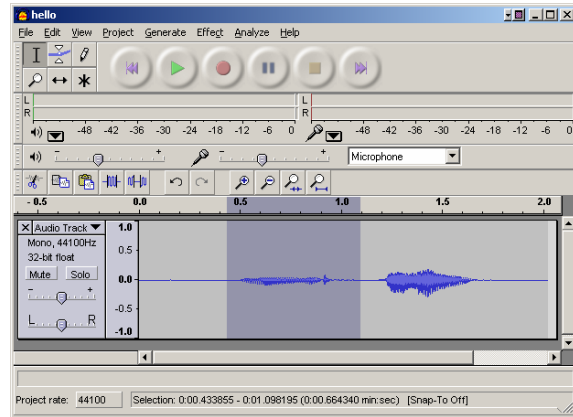
to undo the delete with the Undo command found on the Edit toolbar or Edit menu.

You can also delete the material before and after a section by selecting what you want to keep and then pressing the Trim button on the Edit toolbar or selecting Trim on the Edit menu. If you would like to replace a section of a file with silence, just select the section and click on the Silence tool on the Edit toolbar or Edit menu. Use Silence judiciously. In general, you should avoid having too much silence or dead-air in a recording.

Exercise: Delete the leading and trailing silences from the file *hello.mp3*.

You can also paste deleted material back at any point in the track. In the next screen, I've deleted "world", repositioned the play point before "hello", and then pasted "world" back into the track. The audio track is now "world hello".

Exercise: Try it.

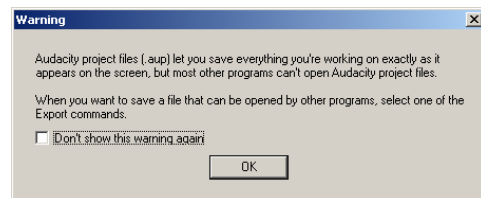


Saving, Exporting and Editing ID3 Tags

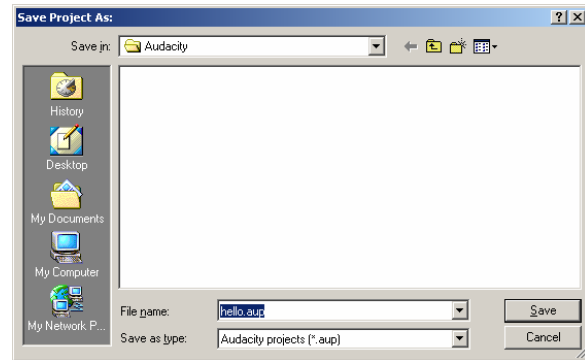
Before you do too much with Audacity, you'll want to learn how to save your work. You have two options. You can either save everything as an Audacity project, or you can export your recording as an MP3 file (or WAV file or Ogg Vorbis file). Projects are nice when you are interrupted and need to finish your work later. But keep in mind that you can only open an Audacity project with Audacity and projects can take up a lot of disk space. For podcasting, you'll want to export the file in MP3 format; this is by far the most commonly used audio file format and the format most accessible to students.

To save your work as a project, select *Save Project* or *Save Project As* on the File menu. Audacity project files have an *.AUP* extension. To export the file as an MP3, select *Export As MP3...* on the File menu.

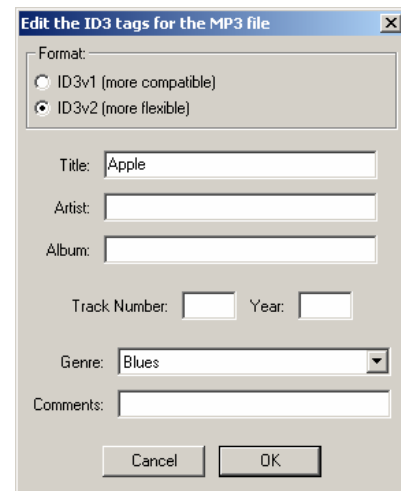
By the way, the first time you create an Audacity project, you'll be given a warning screen. Select *Don't show this warning again* and you won't see it again.



Next, you'll be asked for a location to store your files. A project will be stored as a project file along with a folder of audio tracks. Navigate to the folder of your choice, type in a name and click on Save.



You'll see similar screens when exporting a recording as an MP3 file with one new addition. The first time you save a new file, you'll be asked to enter information about the file. (You won't be asked for this if you are working with an existing file.) In the *Recording With an iPod and iTunes* lesson, we emphasized the importance of adding information in various iTunes fields. If you use Audacity to edit an MP3 file created with iTunes, some but not all of the field information is carried with the file.



For an existing file, select *Project, Edit ID3 Tags . . .* from the Audacity main menu. You will see that the information in the *Title* (Name in iTunes), *Artist*, and *Album* fields are retained from iTunes. The information in the iTunes Grouping, Composer, and Comments fields is lost.

Once you have saved a project or MP3 file, you can reopen them using the *Open* command on the File menu.

Splitting Longer Recordings

If you have a longer recording, you may find it useful to split it into several pieces. This will allow students to listen to part of a lecture without search through the recording, e.g., a pronunciation drill in a language class. This is very easy to do.

Begin by making enough copies of the original file. Never edit your original! For example, if you want to split a lecture into three pieces, you would begin by making three copies of the lecture with the appropriate names, e.g., *c8pt1.mp3*, *c8pt2.mp3*, and *c8pt3.mp3*. Once you have these files, open each file in turn and delete the parts of the recording you don't want. For example, for the file *c8pt1.mp3*, you would open the file,

find where the first part ends, and then delete everything after that point. For *c8pt2.mp3*, you would need to delete the sections before and after the content you want to save.

Exercise: The file *openings.mp3* contains the opening for three novels separated by brief silences. Spit this file into three separate files *part1.mp3*, *part2.mp3*, or *part3.mp3* (or use the authors' name for the file name if you recognize the passage.)

Recording

Note: You'll need a microphone that you can connect to your computer for this section. You can safely skip to the next section and come back to this later.

You can also use Audacity to record audio, whether for a podcast or some other use. To do this, you'll need the appropriate equipment, including a microphone. Selecting a good microphone is essential to successful recording. Unfortunately, it is beyond the scope of this lesson to discuss all the ins and outs of microphone selection and recording practices. However, you should keep in mind that it is generally much easier to make a good recording than it is to clean up a bad recording.

Once you have your microphone connected to your computer, all you need to do is press the Record button and Audacity will begin recording. As you record, you'll see the track displayed in the work area of the screen and the level indicated on the right on the Meter toolbar. Adjust the volume as needed to get a good recording. This may take a couple of tries. Don't be afraid to experiment or to stop and start over.

If you need to interrupt what you are doing, you can use the Pause or Stop button. If you use the Pause button, you can resume recording on the same track. If you press the Stop button, any subsequent recording will be on a new track.

Exercise: Make a short recording. (But if you are working in a public area, please—no singing.)

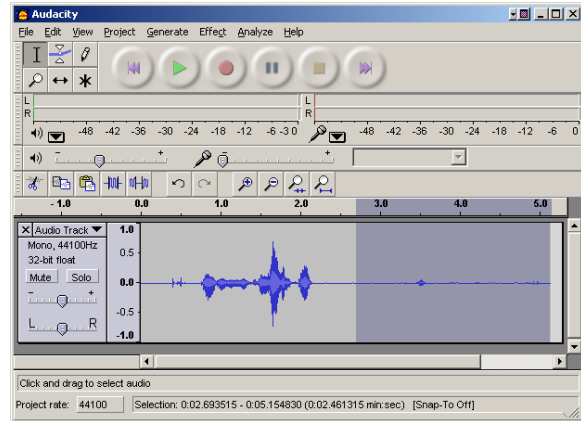
Making Corrections

At times, you will need to make corrections to your audio files. We have already seen how to delete a section of a recording. In this section, we will look at several other types of corrections—altering the volume in a recording, adding to a recording, and replacing a section of a recording.

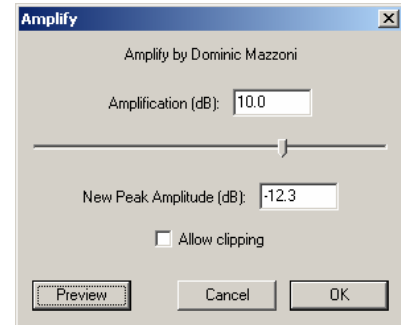
A word of caution—it is very difficult to edit individual words or phrases in a recording and still have something that sounds natural. For this reason, you should limit your changes to complete sentences.

Sometimes poorly balanced recordings are inevitable. For example, perhaps someone is too far from the microphone when asking a question. Sometimes, you may be able to correct this. But keep in mind that uneven levels in a recording can be corrected only up to a point. Generally, a better alternative is if the person with the microphone repeats the question so that it is audible.

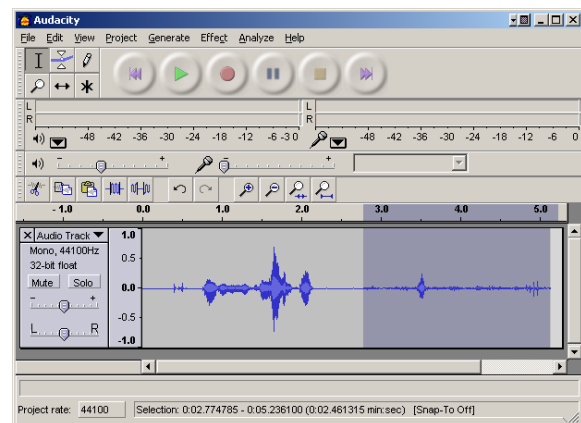
In this recording, the selected region is too faint. We will try to correct this.



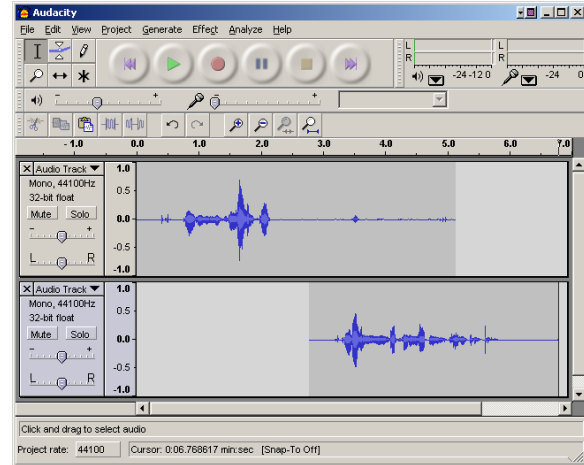
After selecting the region in question, click on *Amplify...* on the Effect menu. This will bring up the Amplify settings window. Amplification is expressed in dB. You might start with something around 10. A positive value increases the level while a negative value decreases the level. Click on the *Preview* button to hear what it sounds like before you commit yourself. Once you are happy with the results, click on *OK*. (If you want to decrease the level of the selected material, you can put in a negative amplification.)



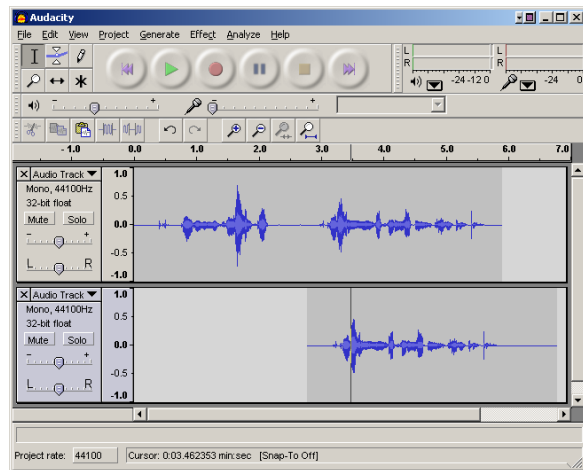
We have increased the volume slightly but we have also increased the background noise as well. This is the problem with this approach.



A better approach is to replace the section. As shown here, I have rerecorded the question at a suitable level. (You may need to make minor adjustments in the level, but this shouldn't be difficult.)

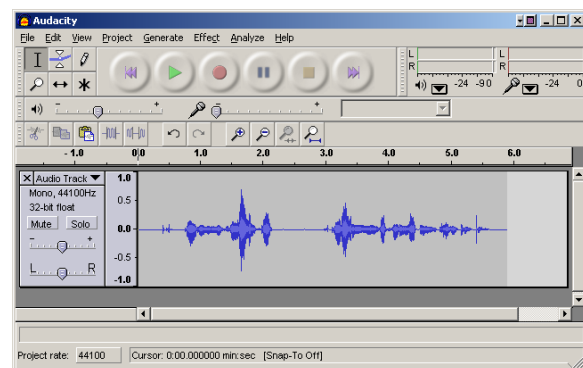


Next, I deleted the old question and then copied the rerecorded question onto the original track.



Finally, I deleted the second track and saved the new file. To delete a track, click on the X in the upper left-hand corner of the track.

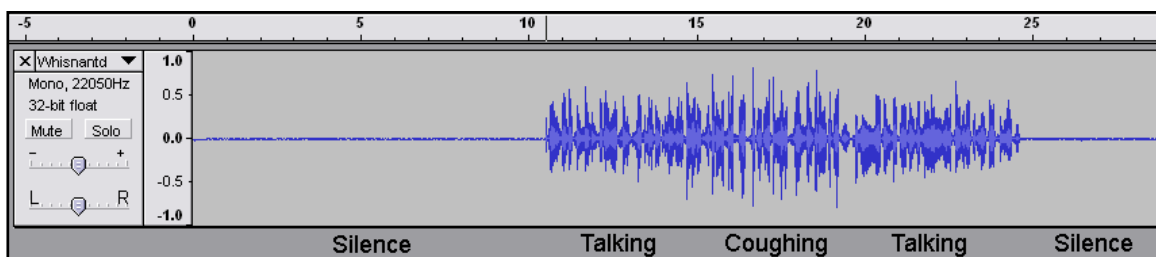
Note, I could have just as easily added the new material after the original question. I could have also inserted the new material at any point in the original file.



Exercise: Using the files *question.mp3* and *answer.mp3*, repeat this process. (Trying to increase the volume should convince you that this isn't a good approach.) Please note, since you will be opening two files, you'll have two Audacity windows open. But you should be able to copy and paste between them without any problems.

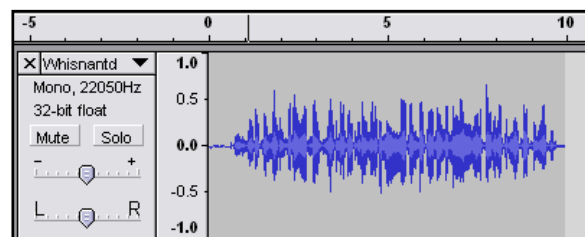
Putting it all Together: A Podcasting Exercise

1. Record a short interview on your iPod using a voice recorder.
 - Don't say anything for around 10 seconds, leaving a lot of silence at the beginning
 - Talk a few seconds
 - Cough uncontrollably or say something objectionable
 - Talk a few seconds more
 - Don't say anything for around 5 seconds, leaving more silence at the end.
 - Stop and save the voice memo
2. Connect your iPod to a computer running iTunes and move the file to your Library.
3. Select the file in your iTunes Library and use *File, Get Info* to display the Information screen. Fill in the field information: Name, Artist, Album, Grouping, and Composer. Add comments, if you like.
4. Select the file and convert it to an MP3 file.
5. Click on the *My Documents* icon on the computer desktop to open up the My Documents window.
6. Drag the MP3 file from the iTunes window to the My Documents window and drop it.
7. Open Audacity and then open the file that you save in your My Documents folder. The Audacity waveform should look something like the below.

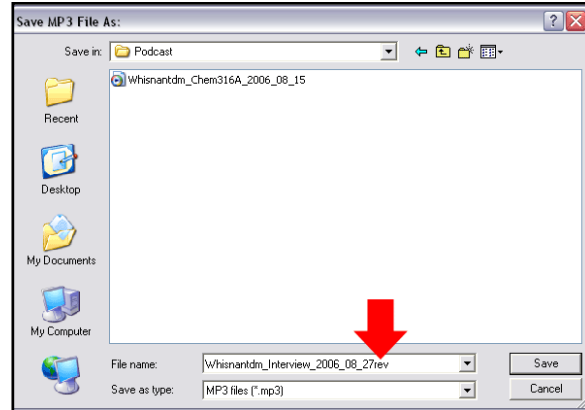


8. Play the file to decide which portions you want to remove. It may be helpful to look at the times above the waveform to figure out what portions to select and delete. After editing my example file by removing the silences and the fit of coughing, the waveform looked like this one.

9. Use *Project, Edit ID3* tags on the Audacity main menu to see what information is attached to the MP3 file.



10. *Export* the revised file *as an MP3* to the folder on your W: drive that you are using to store your podcasting files (W:/Podcast in my example). We recommend slightly changing the name of the file so it will be distinguishable from the original – maybe by adding “rev” to the end of the name.

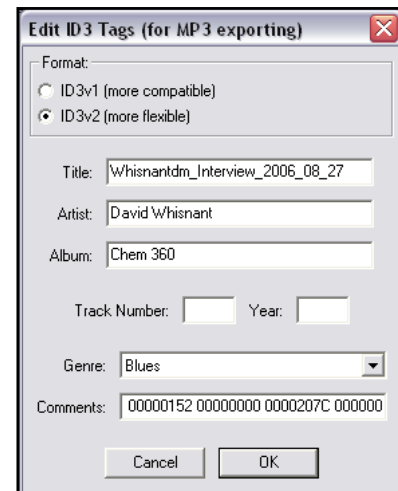


11. If you like, drag and drop the file from podcasting folder back into iTunes.

Name	Kind	Time	Artist	Album	Date Added	Grouping	Composer
Whisnantdm_Interview_2006_08_27	MPEG audio file	0:10	David Whisnant	Chem 360	8/27/2006 3:17 PM		
Whisnantdm_Interview_2006_08_27	MPEG audio file	0:29	David Whisnant	Chem 360	8/27/2006 2:37 PM	Test Interview for editing	David Whisnant
Whisnantdm_Interview_2006_08_27	WAV audio file	0:29	David Whisnant	Chem 360	8/27/2006 2:27 PM	Test Interview for editing	David Whisnant

If you do, you will see that the Name of the recording in iTunes has not changed. Saving the sound file under a new name has no effect on the ID3 Tag information. The ID3 Tag Title stays the same, so the iTunes Library Name also stays the same.

Notice also that the Grouping and Composer information has been lost in the new iTunes MP3 file.



What's Next?

This should be enough to get you started. But there is a lot more. You can use the Envelop tool to fade in and fade out, for example. You could use this to add background music to your lectures, etc.

If you need more information on Audacity, or just want to learn more, you might begin with the Help system. Or, visit the Audacity documentation page on the Web:

<http://audacity.sourceforge.net/help/documentation>