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Tutorial - I.Basics

Part 2 - Rules of Audacity - Part 2

If you'd like to get straight playing an imported file or recording something, you can skip this section and come back later.

Whenever you work with Audacity, there are some rules you should remember:

1. One clip per track

A clip is simply a piece of audio material. Imported, recorded, split or duplicated from another track, one track can only carry one piece of audio at a time. You can extend it by pasting material or inserting silence in to it, or cut a piece away, but it will always be one continuous piece of audio.

2. Audacity always records to a new track

This new track is opened at the bottom. You'll have to zoom out and then resize the track view of the bottom most track to see what is recorded. You can actually use the window sliders at the bottom and right to do this after starting to record, but this way no performance will be lost to the windowing system.

I suggest hitting CTRL+F to get an overview of the entire project as well. This only affects the horizontal zoom by the way(left-right zoom). There is no way to zoom out vertically without using the mouse yet.

3. Edit/Duplicate will not create a new audio file

This may not seem a big deal, but it is if you're editing a large live recording.

What Audacity does is reference the original audio material until you actually perform some kind of edit on it, such as cutting a piece away, or using any effect on it. One thing to remember is the **UNDO** function. You can undo/redo stuff as many times as you like, and yes, even after you have saved your project.

You may ask what happens if you do, for example, cut away a piece or mark off a 30 minute piece and split it to a new track. It only writes changed data to disk. Since Audacity works with chunk of audio data of around one megabyte in size, this happens quite fast. Rest assured that the only big waiting period might be the importing of large audio files.

To further explain how Audacity works, flip to the [next page ...](#)

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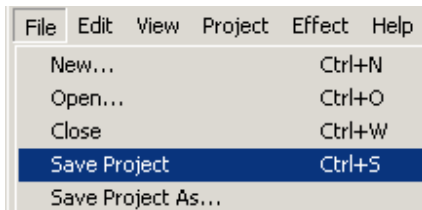
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1. Create a new project

This is very important!

Audacity writes all the changed and recorded audio to a directory called **Projectname_data**, which is located right where you saved the project file itself.

Thus, select



and choose a location and filename for your project.

Please note that when you startup Audacity fresh, only the " **Save As...**" menu option is available.

To save your project later on, you can also use the keyboard shortcut : **CTRL+S**

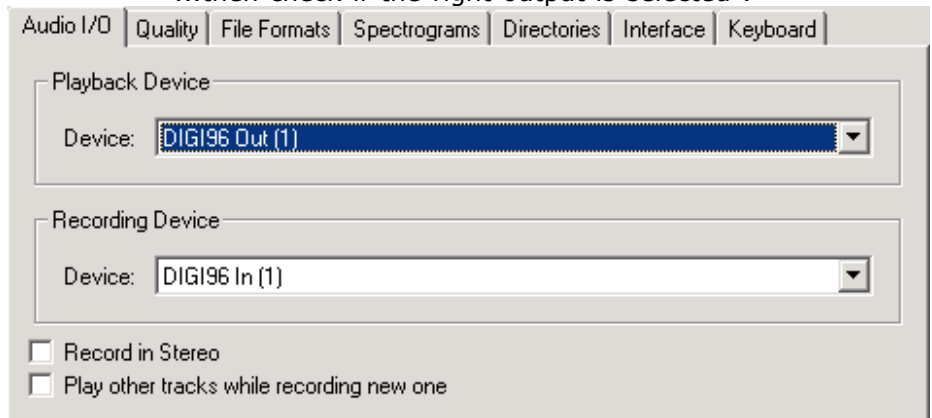
2. Check the Preferences

Again, this is very important!

Press **CTRL+P** or go to ...

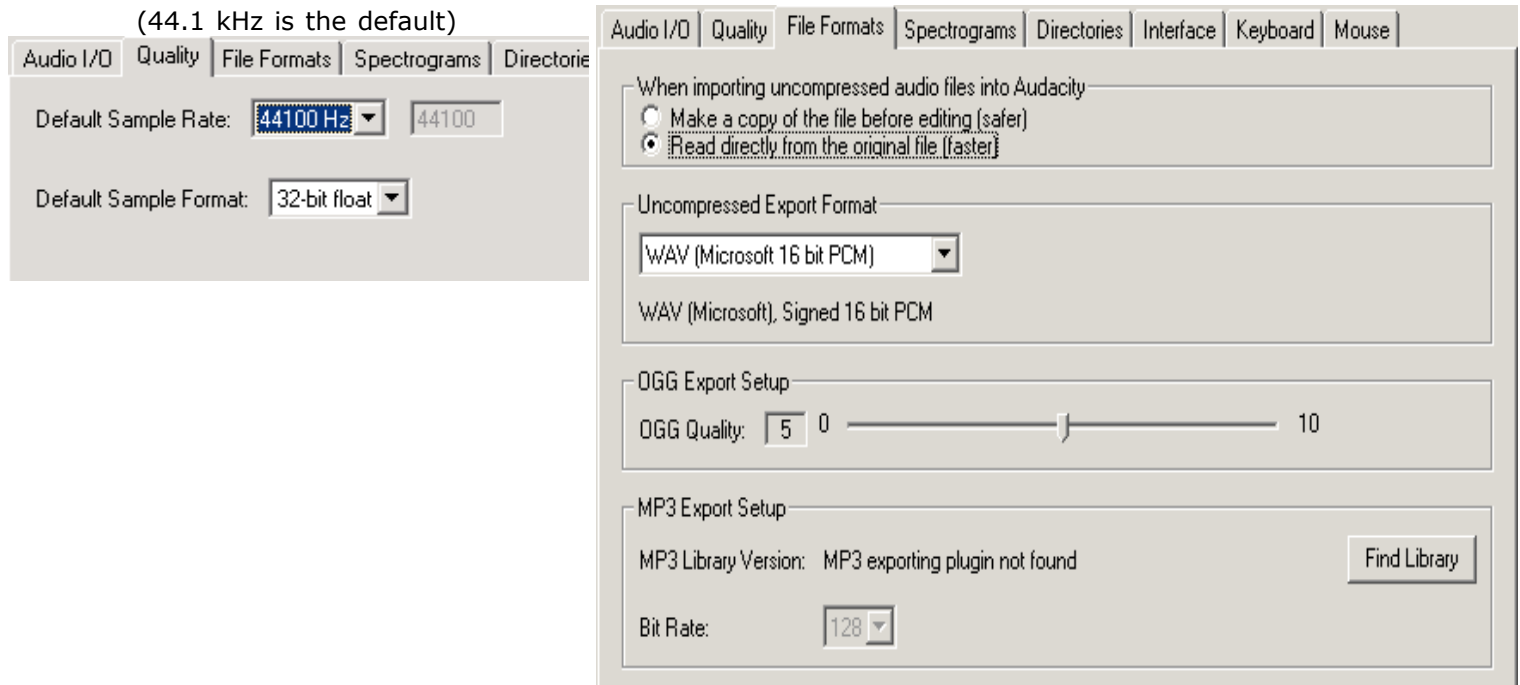


...then check if the right output is selected :



...set the sample rate of your choice...

...and here's a crucial screen :



The *File Formats* settings need discussing at this point.

When importing uncompressed audio, there are two ways to do it. "*Make a copy of the original before editing*" means, that Audacity actually copies the entire audio file that you imported in to its project data directory and in the process sets up the little overview graphics, whose descriptions get stored in the project data directory too.

The second way is to use the original imported audio. You may think we're actually editing this file, but no we aren't. In fact, Audacity will now read the imported file once and simply create the graphics overviews for them in the data directory, and subsequently write to disk all the audio data that you change. The original file is only used for playback. All audio that remains unchanged will be played from the original file.

The advantage of choosing to **make a copy of the original** is that you avoid trouble, should **anything** in the original file change.

For example, should you accidentally delete the original file, you're lost.

You have to make up your mind before you start a project. Choose to make a copy of all imported files, and you'll use more space on your hard disk(s), but it will be easier to back up the project too, because all files that have anything to do with your project will be in the project data directory.

The *Uncompressed Export Format* can be set to WAV or AIFF for now. Please check the [fileformats page](#) for further information on export formats.

We'll ignore the *Spectrogram* settings for now. The *Directories* setting can be ignored as well for now, because all it sets is the directory to use for recordings, undo data and other stuff, if you haven't yet saved your project. Since we already saved our project, this setting is of no importance to us, though you may want to set it properly later on. Initially this is set to a folder called "audacity_temp_1.2" in the system temporary directory.

3. Import an audio file

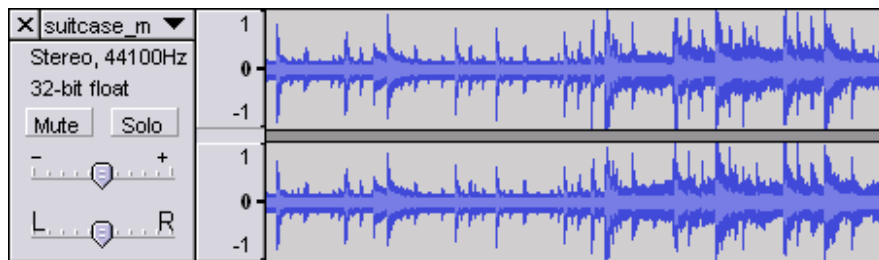
There are three ways to do this:

1. Simply drag and drop the audio file in to the Audacity window. (If you're using Mac OS 9 or X, drag the audio file to the Audacity icon instead...)
2. Select *Import Audio ...* in the Project menu.
3. Use the keyboard shortcut : **CTRL+I**

Audacity can import WAV, AIFF, AU, IRCAM, MP3 and OGG files. Please refer to the [fileformats page](#) for further reference on these audio formats.


4. Playback

The imported file should now be displayed in an audio track. The track will look a little like this, depending on what you imported :



Trackpanel and Waveform Overview of the imported Track

If you're not sure where to find audio material, simply rip some off a CD, or in Windows, check the Media folder in the directory of your Windows installation.

Now click on the green Play button  at the top and you should hear the file you have just imported.

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II.Editing for Beginners

Part 2 - Cut, Copy and Paste - Part 2

From here on you may encounter **funny letter combinations in boxes** like this.

These are keyboard shortcuts to the functions presented to you in the text. These can be either single keys (e.g. **SPACE**) or combinations that need to be held down at the same time(e.g. **CTRL+C**). You can usually create your own. Check out the [this page](#) for more details.

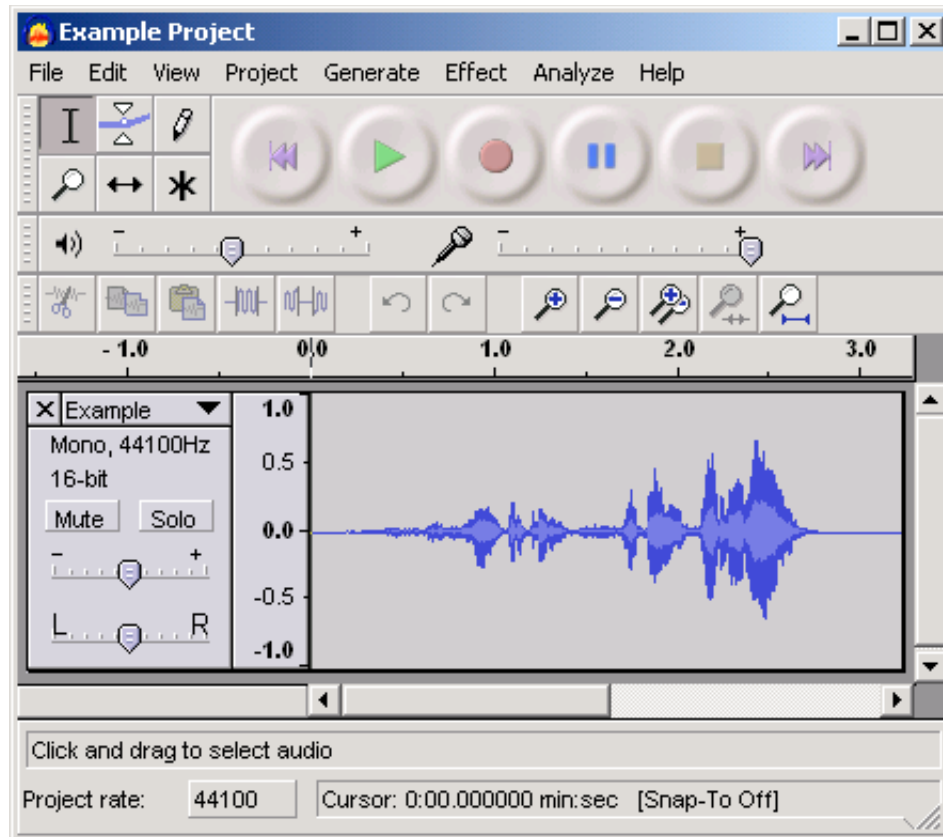
The most basic editing step is cut and paste. It's what people did with tape and it's easy with data in computers, so take a look at these basic operations, referred to as **Cut, Copy and Paste**. The [next page](#) will handle **Silence, Duplicate and Split**. You may also want to check out the [reference](#) section, so you'll know where to find all the tools and how to resize tracks for example.

It is assumed that you have a project open and that at least one track of audio material is present.

Let's take a look at this example of an Audacity window:

The View

The Audacity Window




As you can see by the graphics above, the [time shift tool](#)  is selected. It is used to move the entire audio clip around inside its track.

The cursor (little blinking line across a track and the timeline) will remain at its position, so effectively you'll be sliding your audio material underneath the cursor.

Let's say we want to cut out that bit in the middle then. First we've got to **select it**.

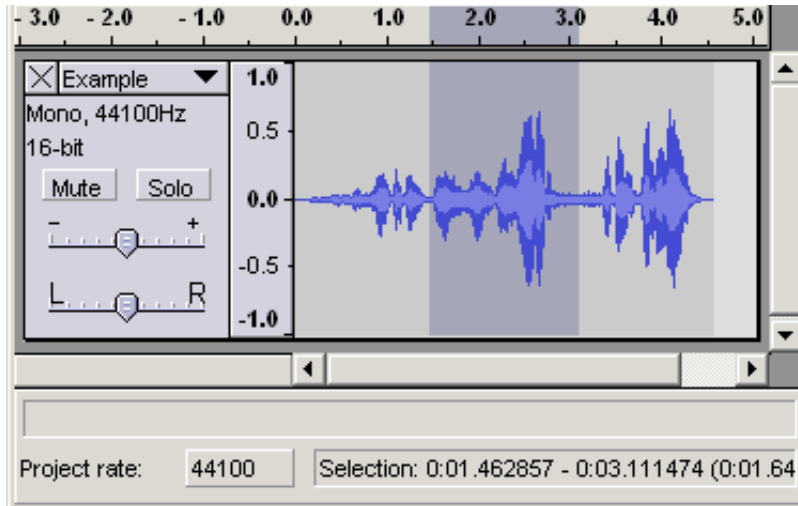
Making a selection

To select the part you wish to cut, copy or paste to, use the [selection tool](#) . If it's not activated, do so now by clicking on it in the toolbar.

Now press and hold the left mouse button while you drag the mouse to mark an area.

This area is darker than the surrounding area of the clip. Note, that even though you can mark an area larger than or extending beyond the actual audio clip in the track, the operations will only work on the actual clip. Playback however will work outside the clip.

Press the space bar to listen to the audio in the marked area.

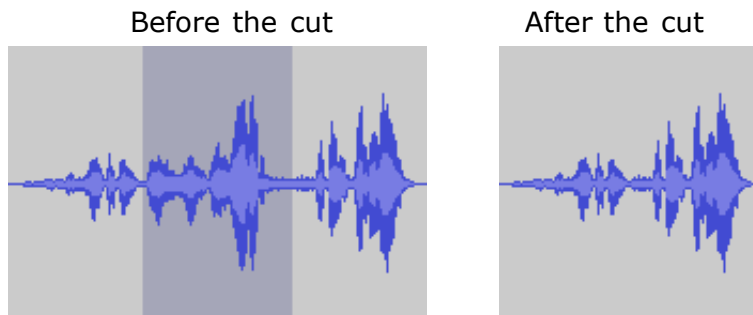


To **extend** or **contract** your selection, hold down the **SHIFT** button and click on the area you wish your selection to extend or contract to.

If you click at a spot that is on the right hand side from the middle of the current selection, you will set the right hand boundary of your new selection.

Cutting the selection

Cut the selection by selecting "**Cut**" from the **Edit menu** ... or press **CTRL+X**.



To undo this operation, select Undo in the Edit menu or press **CTRL+Z**.

Copy will copy the selection to the clipboard.

You can then **paste** that data back in to any track by clicking where you want this audio to be inserted and select Paste in the Edit menu,

or press **CTRL+V**.

Thus pasting is the opposite of cutting. You can also copy material, make another selection with the mouse and then paste. This will replace the selected material with the contents of the clipboard, no matter how short or long either of them are.

during all operations of this kind, the bottom row of the screen will display two things, namely the start time and the end time of your selection. The display to the left is that called "Project

rate:" and its value, defaulting to 44100, can be changed by clicking on that number and selecting another from the drop-down menu. This sets the sample rate of everything you produce in audacity.

All files, no matter which will be played at the project rate, and exported at that rate. Should the sample rate of a track be different from the **Project Rate**, these tracks will be resampled to the **Project Rate** as the project is played back or exported.

Audacity will not change the sample rate of any imported audio. If you want to change the rate of an imported track for any reason this can be done using the Rate option on the track pop-down menu.

proceed to [Part 3 - Silence, Duplicate and Split](#) .

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II.Editing for Beginners

Part 3 - Silence, Duplicate and Split - Part 3

Silencing unwanted sources

This operation flattens the selection. It essentially is a cut operation without deleting the selection completely. After all, if you cut a second away, nothing remains. Using the Silence operation will still leave you with a flatlined area.

When silencing parts between vocal lines, please keep in mind that a sudden drop in background ambiance can have a bad effect, so at the very least fade the area around the silenced part, to minimize that effect. Rules to start with are, **fade in quickly** and **fade out slowly**.

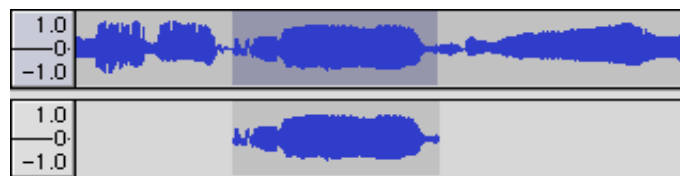
Alternately, use the [envelope tool](#) to lower the volume in that area. That way, you can comfortably change it later.

Keyboard Shortcut : CTRL+L

Duplicate

The selected area gets **copied**, a new track is created and the copied material is pasted in to that new track at the same point in the timeline.

To illustrate, here's the image from the [menu reference](#):



The benefits of a duplicate are many. One of these is experimentation with effects.

Some of you may say "*I can do that with the original track too*". But you can't change the volume of your effect and original audio separately. If you put some Reverb on to your audio, you can only lower that processed audio in volume later on. If you duplicate the audio first and use the reverb on that(with 100% reverb and 0% original signal), you can freely change the volume for both the original and reverb signal.

Also, you can do weird and wonderful things to your duplicates to create special effects. You'll have two pieces of the same audio to work with. Silence parts, reverb another, phase a third, filter another and see how that sounds. It is so easy to duplicate a piece of audio and do weird things to it, so try it. Combining sounds produces magic.

A special note on performance :

The new piece of audio isn't actually copied on the hard disk. Audacity will still play from the original audio file(s) until you change a piece of it.

Keyboard Shortcut : **CTRL+D**

Split

This performs the same as Duplicate, but it also silences the selected material, after copying it to a new track. Again, here's the illustration from the [menu reference](#):



There are plenty of good uses for this function, but I'm not going to tell you about them here. You'll have to go to the [next part](#) for the meat of this tutorial.

Keyboard Shortcut : **CTRL+Y**

go to
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II.Editing for Beginners

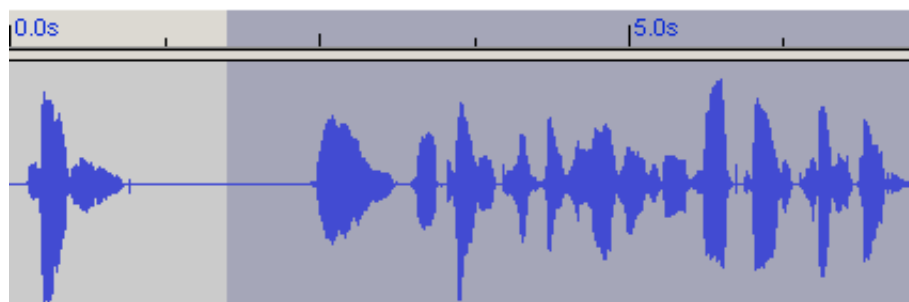
Part 4 - Splitting and Submixes - Part 4

Moving bits of an Audio track

In all projects you'll be pushing your audio around at some point. Otherwise, what are you doing here ?

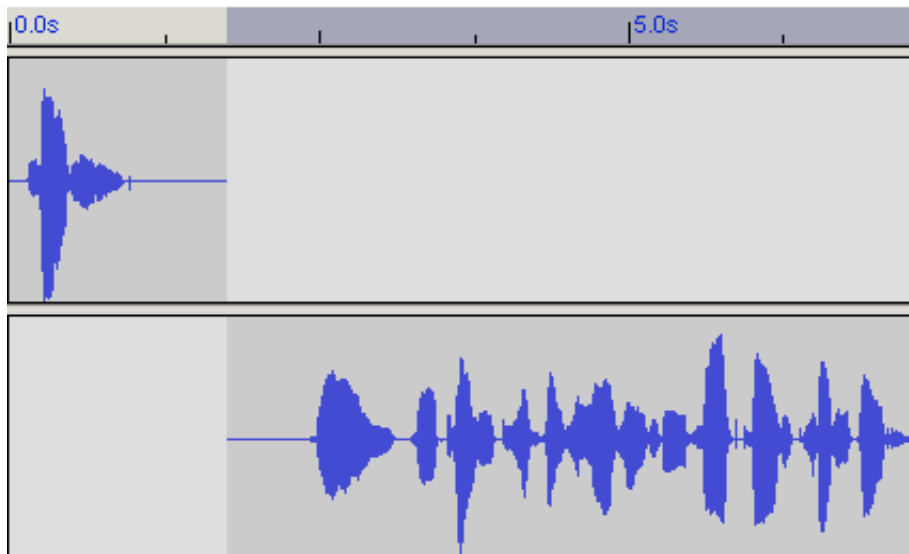
There are techniques, easily achievable with Audacity, to cover almost any kind shifting you'd want to do. In our example, we have a small sentence of speech, where the speaker made a pause after the first word. We'd like to eliminate that pause.

The part after the pause is selected




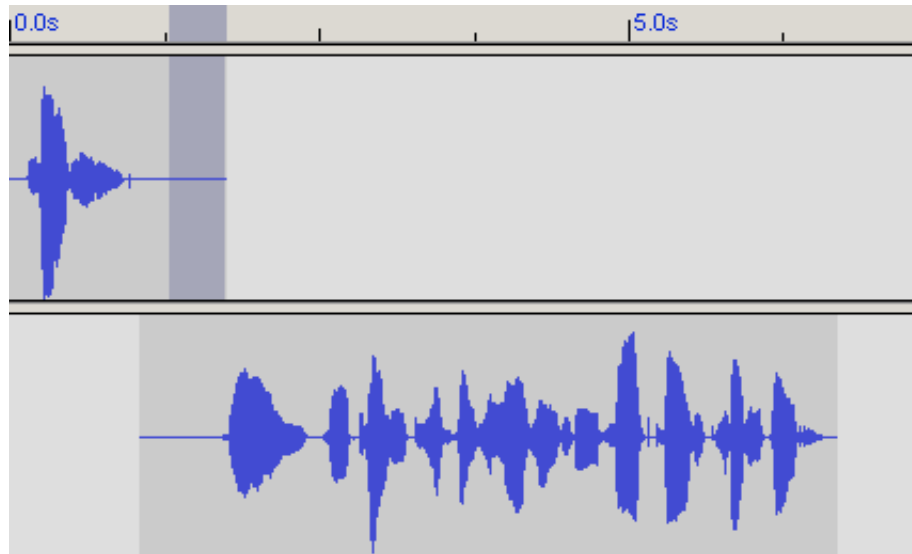
Select

Then the [split function](#) is used to pop the selected audio to a new track



Split

The Time Shift Tool  is selected and the audio on the lower track is moved left.



Move Audio and select for fading

Now, it's a good idea to listen to the two tracks individually for breathing sounds for example.

Use the solo button of the tracks for this. Then listen them both in the mix. Again, you can use the solo buttons for this.

If you have a lot of other tracks playing at the same time, press the solo buttons on both tracks. There should be no overlapping or cut-off breathing sounds.

When you're satisfied, fade out the last two thirds of the overlapping upper part of the track, and fade in the first two thirds of the lower overlapping audio.

Two thirds, and not the whole overlapping audio, are chosen to keep the level of audio constant. If the whole overlapping parts were faded, you would get a level drop of 3dB in the middle of those fades.

You can check this out by taking a piece of music, duplicating it, and then fading the tracks, one fading out, the second fading in. In the middle of those fades, the level of the mix will drop audibly. Do a fade over last two thirds for the fade out and first two thirds for the fade in, and you probably won't notice any change in level.

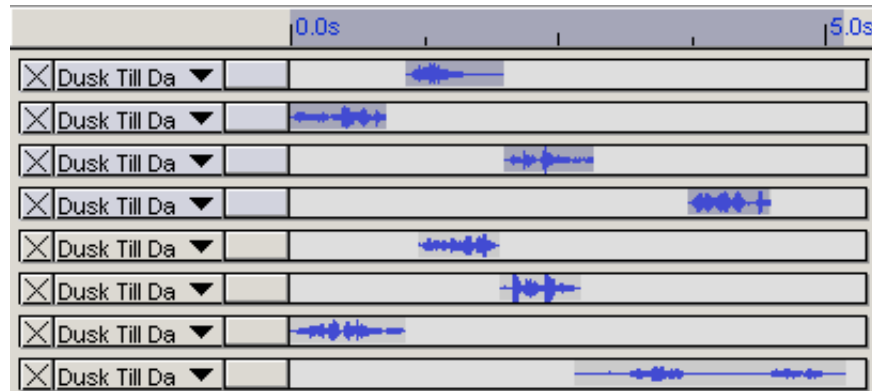
Two thirds is a guideline, but not the law, so you may have to experiment a little.

Mixing it back together again

!!!Remember!!!

The final mix is done with the Export as WAV function in the File Menu. Here we'll be looking at creating submixes with the Quick Mix function.

You've done a lot of edits and now have dozens of little tracks with little bits and pieces here and there. It might look like this:

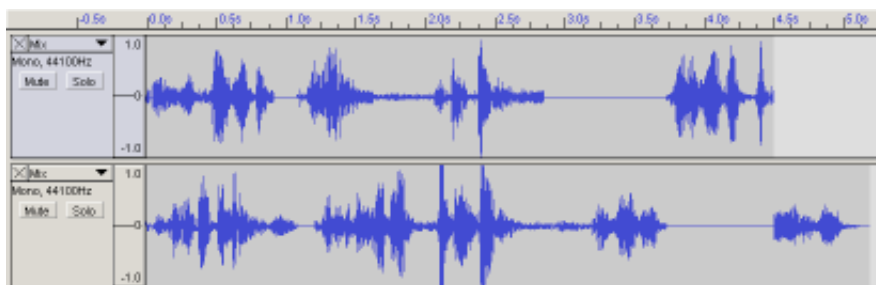


Bits and Pieces spread all over the screen First four tracks selected for quick mixing

We can use the [Quick Mix](#) function in the [Project menu](#) to bring down the number of tracks. However, you don't need to mix everything in to one new track.

Select the tracks you want to mix together by **SHIFT+click** 'ing on the track panels. In the graphics above, the first four tracks are selected.

Then select [Quick Mix](#). In this example I have quick mixed everything down to two tracks :



Bits and Pieces, quick mixed down to two tracks

And thus, two **submixes** were created. Remember though, that we did this for convenience of not having to organize a large number of tracks.

If you still want to shift bits around later on, you should make sure that the parts being mixed to a track **do not overlap**, so you can split it away and edit it again later.

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V.Selecting and aligning

Part 1 - Selecting - Part 1

Basic rules

Selecting can be done with the keyboard, the mouse or by combining the keyboard and mouse.

You need to have the [Selection Tool](#)  activated for making a selection.

The **exception** is selecting the entire track by clicking on the track panel. The [align](#) functions all still work the same way no matter which tool is activated. However, making selections and placing the cursor still requires the [Selection Tool](#).

The selection modifier key is **SHIFT**.

In a word processor or text editor, the SHIFT key is the modifier to turn any character that you enter via the keyboard in to an UPPERCASE character. In Audacity and most audio editing applications, holding down the SHIFT key means that any cursor movement or placement will result in a selection.

What follows are ways of making selections.

How do I ...

select audio on one track ?

Place the cursor on the waveform of a track, hold down the mouse button, drag the mouse and release the mouse button. You can select audio with the keyboard as well, but may need to place the cursor with the mouse first. You need to hold down the **SHIFT** key and use the **left/right** cursor keys to expand the selection. Combine the former with the **CTRL** key (STRG on the German keyboard) to shrink the selection.

select all the audio of a track ?

Click on the track panel. The resulting selection will be confined to the contents of that track.

select all the audio of two or more tracks ?

It cannot be done precisely right now, if one track isn't within the range of the other. It actually doesn't have to be, because of the group functions in the Align menu, but more of that later.

If the start and end of one track is within the start and end of the other, simply select the longer track, then **SHIFT + click** the second track panel.

expand/shrink my selection ?

Hold the **SHIFT** key, then click and hold the mouse button

mouse button.

If you clicked to the left of the center of the current selection, you will now be able to move the left selection boundary with your mouse. The same goes for the right hand side of the selection center. Release the mouse button when you are satisfied.

You can use the cursor keys as well. It works the same way as described in the previous item.

If the start and end of one track is not within the start and end of the other, select the one track, then expand the selection by **SHIFT + clicking** in to the second track until the selection encompasses all the desired material.

select all the audio of the project ?

Use the *Select All* function in the Edit menu, or hit **CTRL+A**.

select from the cursor to the start of the track ?

Use the [Start to Cursor](#) function in the [Edit](#) menu.

select from the cursor to the end of the track ?

Use the [Cursor to End](#) function in the [Edit](#) menu.

select from the cursor to the start of the project ?

Hold the **SHIFT** key and click on the [Skip to Start](#) button.

select from the cursor to the end of the project ?

Hold the **SHIFT** key and click on the [Skip to End](#) button.

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Edit Toolbar

All these tools perform the exact same function, as those accessible through the [Edit menu](#), [View menu](#) and [keyboard shortcuts](#).



Cut

Removes the selected audio data and places it on the clipboard. Only one "thing" can be on the clipboard at a time, but it may contain multiple tracks.



Copy

Copies the selected audio data to the clipboard without removing it from the project.



Paste

Inserts whatever is on the clipboard at the position of the selection cursor in the project, replacing whatever audio data is currently selected, if any.



Trim

Deletes everything but the selection.



Silence

Erases the audio data currently selected, replacing it with silence instead of removing it completely.



Undo

This will undo the last editing operation you performed to your project. Audacity currently supports full unlimited undo - meaning you can undo every editing operation back to the last time the document was closed and re-opened.



Redo

This will redo any editing operations that were just undone. After you perform a new editing operation, including simply resizing a track, you can no longer redo the operations that were undone.



Zoom In



Zoom Out



Zoom to Selection

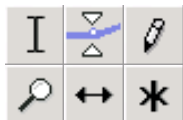


Zoom to entire Project

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Main Toolbar



Selection Tool

This is the main tool you use to select audio. Click in a track to position the cursor, or click and drag to select a range of audio. If you drag from one track to another, you can select multiple tracks. Extend a selection by shift-clicking a new point in the track.

Playback will always begin at the position of the selection cursor. If a range of audio is selected, only the selected range will play.

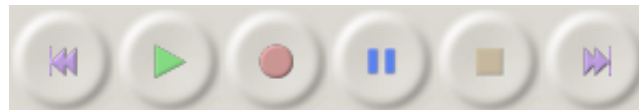
Envelope Tool

The envelope tool gives you detailed control over how tracks fade in and out, right in the main track window. When the envelope tool is selected, the amplitude envelope of each track is highlighted in a green line, with control points at the beginning and end of each track. To change a control point, click it and drag it to a new position. To add a new point, click anywhere in the track where there is not already a control point. To remove a point, click on it and drag it outside of the track until it disappears, then release.

Time Shift Tool

This tool allows you to change the relative positioning of tracks relative to one another in time. To use this tool, simply click in a track and drag it to the left or right. To align two tracks together or reset their time shift back to zero, use the [Align Tracks Together](#) or [Align with Zero](#) commands.

Zoom Tool



Cursor to Start

Places the cursor at the start of the project. **SHIFT + click** expands the selection to the **start** of the project.

Play Button

Press the play button to listen to the audio in your project. You can also hit the spacebar to start or stop playback. Playback begins at the current cursor position. If a region of audio is selected, only the selected region will play. To quickly play the entire project, execute [Select All](#) before playing. If there are multiple tracks going to the same channel in your project, they will be mixed automatically for playback.

Record Button

Press the record button to record a new track from your computer's sound input device. Use the [Preferences](#) to configure the recording options. In particular, there is an option to record stereo or mono, and there is an option to play the other tracks while recording.

Recording always happens at the project's sample rate.

Pause Button

Will pause during playback, or during



This tool allows you to zoom in or out of a specific part of the audio. To zoom in, click anywhere in the audio. To zoom out, right-click or shift-click. If you have a middle button, you can middle-click to do the same thing as [Zoom Normal](#).

In addition, you can zoom into a region by clicking and dragging the mouse to highlight the region you want to see, then releasing the mouse button.



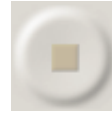
Draw Tool

Enables the user to draw in to the actual waveforms. This is especially useful to eliminate small pops and clicks from material.

ALT + click smoothes a area of audio

CTRL + click & hold edits only one sample, no matter whether you move the mouse left or right.

recording. Press again to unpause.



Stop Button

Press the stop button or hit the spacebar to stop playback immediately.



Cursor to End

Places the cursor at the end of the project.

SHIFT + click expands the selection to the **end** of the project.

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Mixer Toolbar



Output

Input

Input Selector

These sliders control the mixer settings of the soundcard in your system.

The sliders will jump to zero (left most position) if the drivers do not expose these functions. This is the case with some digital I/O cards from RME and possibly others as well. Generally most cards that have a custom mixer application rather than the standard OS volume control won't work with this function of audacity. On these cards you will not be able to control the anything with these sliders, and you will need to set up the recording levels and the recording source using the card's mixer program.

Output Slider

This is the left hand slider that lets you control the output level of your soundcard. It actually controls the output setting of the soundcard driver.

Should your output sound distorted, this is not the first place to look. You might get lucky though, so give it a quick slide. Usually however, the distortion comes from the mix of your project **clipping**. You actually need to reduce the level of your tracks. It is suggested you reduce every track by the same amount.

Input Slider

This is the right hand slider that lets you control the level of the input selected in the Input Selector. It actually controls the recording level setting of the soundcard driver.

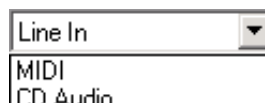
What you record is also determined in the mixer settings on your soundcard. There you can switch certain sources on and off, such as the Line Input, the Microphone Input or the CD Audio.

After selecting the corresponding input source with the Input Selector, you can control the level of the recording with this slider. Use the VU Meters on the Meter Toolbar to get the correct recording level.

Should your input sound distorted, you should lower this slider until no distortion can be heard, and the VU Meters do not hit the end of their travel.

Input Selector

Pick the input source you wish to record from. All these items are exposed by the soundcard driver, so



Here is an example of an ESS 1969 soundcard with the Line In input selected.

the this of options will vary with different soundcards.



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Analyze Menu

Note: plugins that accept input but produce no output will be placed in the Analyze menu. By default, this menu is often empty.

Beat Finder

Sample Analyze Nyquist Plugin ...

no documentation available yet

Will place labels that mark the beginning and end of a selection.

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Edit Menu

Undo

This will undo the last editing operation you performed to your project. Audacity currently supports full unlimited undo - meaning you can undo every editing operation back to when you opened the window.

Redo

This will redo any editing operations that were just undone. After you perform a new editing operation, you can no longer redo the operations that were undone.

Cut

Removes the selected audio data and places it on the clipboard. Only one "thing" can be on the clipboard at a time, but it may contain multiple tracks.

Delete

Removes the audio data that is currently selected without copying it to the clipboard.

Silence

Erases the audio data currently selected, replacing it with silence instead of removing it completely.

Copy

Copies the selected audio data to the clipboard without removing it from the project.

Paste

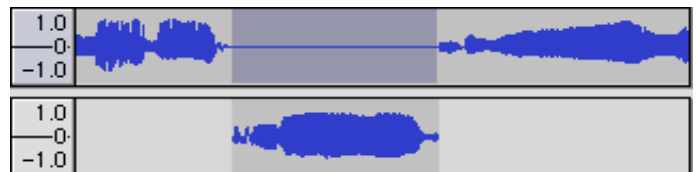
Inserts whatever is on the clipboard at the position of the selection cursor in the project, replacing whatever audio data is currently selected, if any.

Trim

Deletes everything but the selection.

Split

Moves the selected region into its own track or tracks, replacing the affected portion of the original track with silence. See the figure below:



Duplicate

Makes a copy of all or part of a track or set of tracks into new tracks. See the figure below:



Select... > All

Selects all of the audio in all of the tracks.

Select... > Start to Cursor

Selects all the audio from the start of the timeline to the current cursor.

Select... > Cursor to End

Selects all the audio from the cursor to the end of project, which is as far as audio exists in the project.

Find Zero Crossings

Moves the cursor or the edges of the selection to the nearest point where the audio waveform passes through zero. Use this to help achieve click-free cuts in audio, as the two ends of the cut will exactly line up.

Selection Save

Saves the current selection and position. This function only saves the selection boundaries, but not the actual audio data.

Selection Restore

Restores the selection to the project. You need to have an existing selection for this to work.

Move Cursor...

These commands provide quick and accurate ways to manoeuvre the cursor around the project to the start and end of tracks and selections.

Snap-To...

Turns snapping of the cursor to a grid of time values on or off. When off, your cursor can be positioned on any sample in the audio file. When on, it is restricted to certain points in time, determined by the time format in use. This is useful if your project must follow an external timecode exactly.

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Effects Menu

Audacity includes many built-in effects and also lets you use a wide range of plug-in effects. You can download many free plugins for Audacity at [our Website](#). Loads of information is also available at <http://www.kvr-vst.com>.

To apply an effect, simply select part or all of the tracks you want to modify, and select the effect from the menu. Titles which end in an ellipsis (...) will bring up a dialog asking you for more parameters.

There are four classes of effects and they are all [applied](#) the same way. These are

[Internal Effects](#), [VST Effect Plugins](#) (Windows/Mac only), [Nyquist Effects](#) and [LADSPA Effects](#)

Internal Effects

Amplify...

This effect increases or decreases the volume of a track or set of tracks. When you open the dialog, **Audacity** automatically calculates the maximum amount you could amplify the selected audio without causing clipping (from being too loud).

Bass Boost...

This is a safe, smooth filter which can amplify the lower frequencies while leaving most of the other frequencies alone. It is most effective if you don't try to boost too much; 12 dB is usually just right.

Echo...

A simple delay line.

This effect repeats the audio you have selected again and again, softer each time. There is a fixed time delay between each repeat.

First select the audio you want to apply the effect to. You may want to first add silence to the end of your track(s) so that the echo has plenty of time to die out. When you select

Invert

This effect flips the audio samples upside-down. This normally does not affect the sound of the audio at all. It is occasionally useful, for example when the left and right channels of a song both contain equal amounts of vocals, but unequal amounts of background instruments. By inverting one of the channels and not the other, the vocals will cancel each other out, leaving just the instrumentals. Obviously this only works if the exact same vocal signal is present in both of the channels to begin with.

Noise Removal...

This effect is ideal for removing constant background noise such as fans, tape noise, or hums. It will not work very well for removing talking or music in the background.

Removing noise is a two-step process. In the first step, you select a portion of your sound which contains all noise and no signal, in other words, select the part that's silent except for the noise. Then choose **Noise Removal...** from the Effect menu and click Get Profile. Audacity learns from this selection what the noise sounds like, so it knows what to filter out later.

"Echo..." from the Effect menu, Audacity will ask you for two numbers.

The first number is the amount of delay between the echos, in seconds. The second value is the decay factor, which is a number between 0 and 1. A decay factor of 0 means no echo, and a decay factor of 1 means that each echo is just as loud as the original. A value of 0.5 means that its amplitude is cut in half each time, so it dies out slowly. Smaller values will make it die out even more quickly.

The Echo effect is very simple and is not intended to be used in place of a Reverb effect, which simulates the sound of a room, concert hall, stage, or other natural environment. Audacity for MacOS and Windows comes with Gverb, a free LASPA Reverb plug-in.

Note that if you set the decay value to 1.0, you can use Echo to create loops that repeat as long as you want any never change volume.

Fade In

Applies a linear fade-in to the selected audio. For a logarithmic fade, use the [envelope tool](#).

Fade Out

Applies a linear fade-out to the selected audio. For a logarithmic fade, use the [envelope tool](#).

FFT Filter...

This is the most general type of filter. You define a curve that shows how much louder or quieter each frequency in the signal should be made.

If you're careful, you can use it to highlight exactly the frequencies you want. However, doing an FFT filter is more likely to result in artifacts, especially if the filter you draw is not smooth.

Then, select all of the audio where you want the noise removed from and choose **Noise Removal...** again. This time, click the "Remove Noise" button. It may take a few seconds or longer depending on how much you selected.

If too much or not enough noise was removed, you can **Undo** (from the Edit menu) and try **Noise Removal...** again with a different noise removal level. You don't have to get a new noise profile again if you think the first one was fine.

Removing noise usually results in some distortion. This is normal and there's virtually nothing you can do about it. When there's only a little bit of noise, and the signal (i.e. the voice or the music or whatever) is much louder than the noise, this effect works well and there's very little audible distortion. But when the noise is very loud, when the noise is variable, or when the signal is not much louder than the noise, then the result is often too distorted.

Future versions of Audacity may include improved versions of this effect.

Phaser...

The name "Phaser" comes from "Phase Shifter", because it works by combining phase-shifted signals with the original signal. The movement of the phase-shifted signals is controlled using a Low Frequency Oscillator (LFO).

Reverse

This effect reverses the selected audio temporally; after the effect the end of the audio will be heard first and the beginning last. Some people reverse small portions of audio to make inappropriate language unintelligible, while others believe you can hear subliminal messages if you listen to speech backwards. You can also create interesting sound effects by recording natural events and reversing the audio.

Wahwah...

Just like that guitar sound so popular in the 1970's.

This effect uses a moving bandpass filter to create its sound. A low frequency oscillator (LFO) is used to control the movement of the filter throughout the frequency spectrum.

The WahWah effect automatically adjusts the phase of the left and right channels when given a stereo recording, so that the effect seems to travel across the speakers.

VST Plug-ins

To use a VST plug-in effect, put the effect in the directory (folder) called "Plug-Ins", which should be in the same directory where Audacity resides. If there is no directory, create one. You will also need to download and unzip the [VST Enabler](#) to the same directory. The next time you launch Audacity, any plug-ins you added will appear in the Effect menu.

Freeverb2...

Audacity for Mac OS and Windows comes with a VST plug-in called Freeverb, which is in version 2 (hence "Freeverb2"). This effect implements a versatile and high-quality reverb effect.

Getting a good reverb sound depends a lot on the source audio and can take a lot of experimentation. One good strategy is to select a small portion of audio (a few seconds) and try to add reverb. Listen to it, then Undo and try it again with different settings. Keep doing this until you've found the settings you like the sound of best, and then Undo one last time, Select All, then apply the effect to your entire recording.

There are a lot of parameters to Freeverb2: Room size, Damping, Predelay, Lowpass, Highpass, Wet level, and Dry level.

Let's start with the wet and dry levels. Freeverb works by taking your audio signal and modifying it to create the reverberated sound, i.e. the sound you hear echoing off the walls of the room. This is called the "wet" part of the effect.

If you set the dry level to 0 and the wet level to -infinity, it's like standing right in front of the singer in a tiny room - all you can hear is the singer, and no reverb. A good place to start is to set both the dry level and wet level to 0 dB. However, you may want to experiment with lowering the dry level while you are experimenting with the sound of the reverb.

The room size parameter is self-explanatory. The smallest room size setting creates a quick, bright reverb, while the largest setting creates a long, drawn-out, and dark reverb. The damping parameter controls how the sound bounces off the walls - i.e. if it is mostly reflected or absorbed.

The predelay controls the delay between the dry signal (unreverberated) and the wet signal (reverberated) - usually there is some predelay because of the time it takes sound waves to travel from the sound source to the nearest wall, and to the microphone. Larger predelays are suitable for creating an effect of a larger room.

Finally, the lowpass and highpass filters can be

This is mixed together with the original sound, which is called the "dry" part of the effect, to produce the combination of direct (unreverberated) and indirect (reverberated) sound, which is what you would naturally hear. If you set the dry level to -infinity and the wet level to 0 dB, the result is something like standing outside of a concert hall: you can only hear the reverberated sound.

used to make the reverberated sound lower or higher. Increasing the lowpass filter filters out the high frequencies, and similarly increasing the highpass filter filters out the low frequencies.

Nyquist Plugins

To use a Nyquist effect, put the effect in the directory (folder) called "Plug-Ins", which should be in the same directory where Audacity resides. Upon installation, some nyquist scripts are included, so you needn't worry about creating this directory. The next time you launch Audacity, any plug-ins you added will appear in the Effect, Generate or Analyse menus.

LADSPA Plugins

These started out as a plugin format for Linux, but can now be used on Windows and OS X as well. There are lots of free plugins available, and no enabler is needed. More information can be found [on the web](#).

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File Menu

New...

Creates a new empty project window.

Open...

Selecting *Open* presents you with a dialog where you can choose a file to open. If the current project window is empty, the new file will take over the current window, otherwise a new project window will be opened.

The file formats recognized by Audacity are [WAV](#), [AIFF](#), [NeXT/AU](#), [IRCAM](#), [MP3](#), [Ogg Vorbis](#), [MIDI](#), and the Audacity Project file format ([AUP](#)).

In addition, Audacity can also attempt to open an audio file in a different format, as long as it is uncompressed - to do this, use the [Import Raw Data](#) command.

Close

Closes the current project window.

Save Project

Saves the current Audacity project ([AUP](#)) file. Audacity projects are *not* intended to be read by other programs, but they are extremely fast to load and save within Audacity. When you are finished working on a project and you want to be able to use it in another program, select one of the [Export](#) commands instead.

Note that most of the audio data for an Audacity project is not stored in the [AUP](#) file, but in a directory (folder) with the same name as the project. For example, if you save a project as `chanson.aup`, there will be a directory called `chanson_data` created to store the actual audio tracks of the project. For more information on the project file format, see [the file formats page](#).

Export Selection As WAV...

This is the same as [Export](#), but it only exports the part of the project that is selected. This is very useful if you want to save a small clip from part of a track as a separate file.

Export As MP3...

Exports the current Audacity project as an MP3 file. Audacity does not encode MP3 files directly, but instead requires that you download a separate MP3 encoder. See [Exporting MP3 Files](#) for details.

To export only a single track or part of track, use [Export Selection as MP3](#).

Export Selection As MP3...

This is the same as [Export MP3](#), but it only exports the part of the project that is selected. This is very useful if you want to save a small clip from part of a track as a separate file. See [Exporting MP3 Files](#).

Export As OGG...

Exports the current Audacity project as an Ogg Vorbis file.

To export only a single track or part of track, use [Export Selection as Ogg](#).

Export Selection As OGG...

This is the same as [Export As OGG](#), but it only exports the part of the project that is selected. This is very useful if you want to save a small clip from part of a track as a separate file.

Export Labels...

If you have any [Label Tracks](#), this command

Save Project As...

Saves the current Audacity project ([AUP](#)) file, allowing you to give it a different name or move it to a new location if you have already saved it in one location.

Audacity projects are *not* intended to be read by other programs, but they are extremely fast to load and save within Audacity. When you are finished working on a project and you want to be able to use it in another program, select one of the [Export](#) commands instead.

For more information on the project file format, see [the file formats page](#).

Export As WAV...

Exports the current Audacity project as a standard audio file format such as [WAV](#) or [AIFF](#).

You can change the format of exported files in the [Preferences](#) dialog.

If there are multiple tracks in your project, they will be automatically mixed in the exported data. For more information about mixing, see [Quick Mix](#).

To export only a single track or part of a track, use [Export Selection](#).

will export them as a text file. This feature is commonly used in Speech Recognition research to annotate a speech utterance and export the annotation to be later processed by another program.

To import these labels into a different project later, use the [Import Labels](#) command.

Export Multiple...

This allows you to do multiple exports from audacity with one command based either on multiple tracks in the project or labels in a single audio track. It's great for splitting up long recordings into CD tracks

Preferences

Opens a dialog window that lets you configure Audacity. For more information on the different preferences, see the section on [Audacity Preferences](#).

Exit/Quit

Closes all project windows and exits Audacity. It will ask you if you want to save changes to your project. It is not necessary for you to save changes if you just exported your file as WAV or MP3 and you are finished working with it. On the other hand, if you are working on a mix and plan to continue where you left off, saving an Audacity Project will let you restore everything as it is later.

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Generate Menu

Silence

Inserts silence. The length is determined by the length of your selection and the position by the **left boundary of your selection**.

If no selection is made, the default length inserted at the cursor position is **30 seconds**.

For example, to insert a two seconds of silence at a certain point, place the cursor at your chosen spot, hold the **SHIFT** key down, click and drag your mouse to the right to mark roughly two seconds, release the mouse button and activate the Silence function in the Generate menu. Silence, the length of your selection, will be inserted at the **left boundary of your selection**.

White Noise

Inserts white noise. The length is determined by the length of your selection and the position by the **left boundary of your selection**.

If no selection is made, the default length inserted at the cursor position is **30 seconds**.

Tone

Inserts a wave of chosen type, frequency and amplitude. The length is determined by the length of your selection and the position by the **left boundary of your selection**.

If no selection is made, the default length inserted at the cursor position is **30 seconds**.

Parameters:

Waveform	Sine, Square, Sawtooth
Frequency(Hz)	1-20000 (value below 1.0 and above 20000 will be corrected to 1.0 and 20000!)
Amplitude	0-1 - This is the volume of the generated wave.

Pluck

Inserts a synthesized pluck tone. The length is determined by the length of your selection and the position by the **left boundary of your selection**.

If no selection is made, the default length inserted at the cursor position is **one second**.

Pitch 0-127

The number corresponds to the value of a midi note, which is assigned to a pitch. The higher the number, the higher the note.

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Project Menu

Import Audio...

This command is used to import audio from a standard audio format into your project. Use this command if you already have a couple of tracks, and you want to add another track to the same project, maybe to mix them together.

Use this command to import anything except MIDI files. You cannot yet use this option to import Audacity Projects.

Import Labels...

This command takes a text file which contains time codes and labels, and turns them into a [Label Track](#).

Import MIDI...

This menu command imports MIDI files and puts them into a [Note Track](#). Audacity can display MIDI files, but cannot play, edit, or save them yet.

Import Raw Data...

This menu command allows you to open a file in virtually any format, as long as it is not compressed. When you select the file, Audacity will look through it and try to guess its format. It will guess correctly about 90% of the time, so you can try just pressing "OK" and listening to it. If it is not correct, however, you can use the dialog presented to try all of the different possibilities.

At the beginning of your imported track(s), you may notice a little bit of noise. This is probably the file's header, which Audacity was not able to parse. Just zoom in and select the noise with the [Selection Tool](#), and then choose [Delete](#).

Quick Mix

This command mixes all of the selected tracks down to one or two tracks. The channel of a track being mixed affects whether it will be mixed into the left channel of the resulting track(s), the right channel, or both (mono).

For example, if you have four tracks:

- Track 1: left channel
- Track 2: left channel
- Track 3: right channel
- Track 4: mono channel

and you select them all and perform a Quick Mix, you will end up with two tracks: the first will contain a mix of tracks 1, 2, and 4 (the new left channel) and the other will contain a mix of tracks 3 and 4 (the new right channel).

Your tracks are implicitly mixed whenever you hit the [Play](#) button and whenever you select [Export](#).

Note that if you try to mix two very loud tracks together, you may get clipping (it will sound like pops, clicks, and noise). To avoid this, you should use the track gain controls to reduce the amplitude of all of your tracks.

New Audio Track

This creates a new empty audio track. This command is rarely needed, since importing, recording, and mixing automatically create new tracks as needed. But you can use this to cut or copy data from an existing track and paste it into a blank track.

New Stereo Track

Creates a stereo version of the new audio track above. You may need this if you start with a load of mono tracks and want to export a stereo mix.

Edit ID3 Tags...

Opens a dialog allowing you to edit the ID3 tags associated with a project, for MP3 exporting.

ID3 Tags are used to store the Title, Artist, Author, and other information in MP3 files. When you import an MP3 file, Audacity remembers this information and stores it with your project. When you export an MP3 file, Audacity will prompt you for the ID3 tags, showing you any tags it collected from an original MP3 file, or that you typed by selecting "Edit ID3 Tags" from the Project menu.

Audacity allows you to store ID3 tags in either the ID3v1 or the ID3v2 format. In general, you should use the ID3v2 format, because ID3v2 tags go at the *beginning* of an MP3 file, whereas ID3v1 tags go at the end. Having the title and author first means that someone downloading an MP3 you created will know that information before they've finished downloading the song.

New Label Track

This creates a new Label track, which can be very useful for textual annotation. See the discussion on [Label tracks](#) for more information on how to use label tracks.

New Time Track

Creates a special track that can be used to speed up and slow down playback over the course of the project. This affects all tracks in the project.

Remove Track(s)

This command removes the selected track or tracks from the project. Even if only part of a track is selected, the entire track is removed. You can also delete a track by clicking the X in its upper-left corner. To cut out only part of the audio in a track, use [Delete](#) or [Silence](#).

Align functions

All the align functions work on whole tracks or groups of tracks, NOT on selections, even if they span across multiple tracks. Please read the [tutorial on how to use the align functions](#). You will also find some creative uses and solutions to common problems there. These functions operate on each track individually. If more than one track is selected, these functions do not preserve their position to one another.

Align with Zero

Aligns the start of any selected tracks to the start of the project.

Align End with Cursor

Aligns the end of any selected tracks to the cursor position.

Align with Cursor

Aligns the start of any selected tracks to the cursor position.

Align End with Selection Start

Aligns the end of any selected tracks to the start of the current selection

Align with Selection Start

Aligns the start of any selected tracks to the start of the current selection

Align End with Selection End

Aligns the end of any selected tracks to the end of the current selection

Align with Selection End

Align Tracks Together

Aligns the start of any selected tracks to the end of the current selection

If you select multiple tracks, this command adjusts their time offset so that they start at the same time. It adjusts their starting time to the average of all of the tracks' original starting times. To adjust the time offset of one track, use the [Time Shift](#) tool.

Align and Move Cursor

These commands work just like the align commands with the [move cursor](#) command immediately following it.

Add Label at Selection

This menu item lets you create a new label at the current selection. You can title the label by typing with the keyboard and then hitting "Enter" when you're done. The label saves your current selection - so when you click on the label later it will return the selection to the state it was in when you created the label. See the discussion on [Label Tracks](#) for more information on how to use label tracks.

Add Label at Selection

Like [Add Label at Selection](#) but the label is added at the current position during playback.

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View Menu

Zoom In

Zooms in on the horizontal axis of the audio, displaying more detail about less time. You can also use the zoom tool to zoom in on a particular part of the window.

Zoom Normal

Zooms to the default view, which displays about one inch per second.

Zoom Out

Zooms out, displaying less detail about more time.

Fit in Window

Zooms out until the entire project just fits in the window.

Fit Vertically

Adjusts the height of all the tracks until they fit in the project window.

Zoom to Selection

Zooms in until the selected audio fills the width of the screen to show the selection in more detail.

Set Selection Format

Sets the format in which selections are measured in at the bottom of the application window. Combined with setting *Set Snap-To Mode* to ON, this is ideal to cut stuff up in to exact measures.

Set Snap-To Mode

History

Brings up the history window. It shows all the actions you have performed during the current session, including importing. The right-hand column shows the amount of HD space your operations used. You can jump back and forth between editing steps quite easily by simply clicking on the entries in the window.

The history window can be kept open at all times. It doesn't interfere with any other operations.

Plot Spectrum

To use this feature, first select a region of audio from a single track, then select "Plot Spectrum".

It opens up a window which displays the Power Spectrum of the audio over that region, calculated using the Fast Fourier Transform. The graph represents how much energy is in each frequency.

This window can also display other common functions that are calculated using the Fast Fourier Transform, including three versions of the Autocorrelation function.

The Enhanced Autocorrelation function is very good at identifying the pitch of a note.

Float or Dock Control Toolbar

Toggles between displaying the tool docked at the top of each project window, or in a separate floating window. You can also float any toolbar by grabbing the handle on the left side and dragging it to the location you want.

Once they are floating these options change to docking the toolbars back into the main window.

Float or Dock Menu Toolbar

Float or Dock Mixer Toolbar

Float or Dock Meter Toolbar

Do the same thing for the other toolbars

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Keyboard Shortcuts

!!Apple MacOS X users!! **CTRL** = **Command**

File Commands

New Project **CTRL+N**

Open Project **CTRL+O**

Close Project **CTRL+W**

Save Project **CTRL+S**

Preferences **CTRL+P**

Navigation, Playback & Recording

Play/Stop **SPACE**

Loop **SHIFT+SPACE**

L

Pause **P**

Record **R**

Preview 1 second **1**

Play From Cursor To Selection **B**

Editing Tools

Selection Tool **F1**

Envelope Tool **F2**

Editing Tool **F3**

Zoom Tool **F4**

Timeshift Tool **F5**

Multi Tool **F6**

cycle tool forward **D**

Zoom In **CTRL+1**

Zoom Normal **CTRL+2**

Zoom Out **CTRL+3**

Fit In Window **CTRL+F**

Fit Vertically **CTRL+SHIFT+F**

cycle tool backward A**Zoom to Selection** CTRL+E

Edit Commands

Undo CTRL+Z**Redo** (Windows) CTRL+Y**Redo** (Mac/Unix) CTRL+SHIFT+Z**Cut** CTRL+X**Copy** CTRL+C**Paste** CTRL+V**Delete** CTRL+KDELETE**Silence** CTRL+L**Duplicate** CTRL+D**Select All** CTRL+A**Find Zero Crossings** Z**Import Audio** CTRL+I**Create Label** CTRL+B**Repeat Last Effect** CTRL+R[Back to the main page](#)[Back to the Reference page](#)