

Using *Audacity* – An Overview of this Digital Audio Workstation (DAW)

1) Start by opening the DAW and giving the project a strategic descriptive name, and setting a number of other possible important options. For example, which hardware we will use to listen to our project as we work on it, whether the basic sampling protocols (settings) will be for simple audio or for film. See the drop down options above the track area for hardware options (*Built-in Microphone*, etc).

See Preferences for the sampling settings (Preferences > Quality > Sample Rate, Sample Format).

2) Then Open, drag in, record, or import audio files for the project.

3) We start selecting sections of the waveform  to edit, cutting, and pasting audio bits in a track or tracks.

4) We add DSP (digital sound processing) effects to change the tone of parts  or of whole tracks. Or dynamics, or the size of the space they seem to appear in.

5) We use **File > Save** the whole project that we might want to come back to and edit some more, or edit differently. Saving is usually not directly related to the final product. Saving preserves the project, with all the individual tracks and DSP effects ready to adjust. The file you creates with **File > Save** you cannot be played on iTunes. Do use File > Save often though! Without a full project file, you won't be able to work on it tomorrow when you remember the part you forgot to include. In other words you can resume just where you left off, instead of starting over!

After saving, both an .aup file *and* a folder of parts are created. You will need them all to reconstruct the project. Also always save on the hard drive or desktop of the computer you are using. Never save directly to net storage or any version of the cloud. There is only a 60% chance you will ever get it to work right if you try to open a project on a distant cloud. It is better to keep the whole project on the desktop as you are working, and when you are completely done, save it one more time. Make certain all the files and folders are together (in a master folder) and then copy the full folder to the on-line storage.

A final note: commit yourselves to making a backup. Sound editing is not as forgiving as working on a WORD doc or Photoshop file. And Braukmann tends to think of himself as your client. It is upsetting to your client if you cannot deliver as promised. And if you have a problem delivering, contact Braukmann and solve the problem as soon as possible!

6) When you are satisfied with the project, use **File > Export** to create a version the client can use. Often this is a WAV or AIF file (Both high quality PCM files). In our case we will create MP3 files to turn in. Although they are not as detailed as WAV files, they are adequate for non-professional people, and a lot faster to send, and smaller to save.

Please checkout the **Audacity-Getting-Started** page https://manual.audacityteam.org/quick_help.html

Using the Tone Generator to Create Wave Forms

(First review the terms *waveform, frequency, mixing*)

Level	A characteristic of volume, related to loudness It is important to use fairly robust levels to start mixing.
Amplify	Select a (or part of a) waveform and make it play at a higher or lower level
Bass	controls change levels of waveform parts below about 300Hz
Treble	controls change levels of waveform parts above about 1K Hz
Pitch	a musical term related directly to frequency
Speed	How long it takes to play the clip.

Tempo Musical term meaning the speed of the pulse of the music.

Tools under Generate > Noise, creates several types of randomized noise with all frequencies mixed
Silence, creates a few seconds of quiet. Also works if you select some part of the waveform to replace with silence, like a car horn accidentally recorded in a dialog.
Tones, creates specific simple tones or pitches, useful as building blocks.

Tools under Effect

Amplify Make the selected sound play at a higher or lower level.
Don't use for everyday level changes. Destroys some data.
Slider makes relative changes between tracks that can be redone later.

Pitch Use to adapt a sound to be a different sound. Slap becomes explosion.
Low note can become a high note. Does it without changing tempo.

Speed With tempo and pitch affected.

Tempo Speeds things up or slows them down without changing pitch.

Reverse Interesting for sound designs.

Moving Beyond the Guide

Bringing in additional tracks: **File > Open**, **File > Import**, drag in, or record.

Track > Add New gives you a place to drag or copy snips.

Recording, importing, and mixing automatically create new tracks as needed

Mute Temporarily silences this track.

Solo Temporarily silences all the other tracks but this one.



This slider controls the overall level of the track.

This slider controls the location of the sound in the track, left to right.

Working with tracks in Audacity

Click on the track name (above Mute and Solo buttons) to see these options:

Name, give it a new name

View in different ways, as a waveform, or as a spectrogram

Show fundamental frequency. Nice when you are coordinating effects.

Split – makes two mono tracks, one in each speaker

To make a center mono file, cut the track, then use mono option

Export and two mono tracks will mix to a single mono track

Make Stereo Track – joins with the one just below to make stereo track

It will work eventually. Try it again!

Blend two monos into one mono – Tracks > Mix

Exporting a Mix (for a client, or to turn in)

Make certain you have adjusted panning (L – R) on each track as you wish it to be.

Tracks > Mix and Render creates a new mix and loses the original tracks.

Tracks > Mix and Render to a New Track adds a mixed track

and keeps the original tracks. If you mute the original tracks and export the remaining track(s) you will have a nice mix saved, and all of your supporting tracks still in place to edit further.

File > Export Audio gives you a number of choices, including more than stereo

Check out the editable keyboard shortcut list in preferences.

Note that 32-bit float refers to 32-bit floating point. Common in the discipline.



Draw Tool

Enables the user to draw in to the actual waveforms. This is especially useful to eliminate small pops and clicks from material. Zoom in to see sample points first or will not work.

Also see the Repair tool in Effects. Works on selections up to 128 samples.

Setting Up to Record With an External USB Source

1. It is a good idea to get the manual for your input device. Find out which sampling rates and resolutions it can create. Editing programs like Audacity can be set to match the sample rate and resolution. If these options are not set to match the device, you may not be able to record properly. (Most can do 44,100 Hz sample rate and 16-bit resolution. That is minimum for CD quality audio. 24-bit is standard for recording tracks.)
2. Plug in the USB device before turning on Audacity. Make certain it is powered up.
3. The computer and software may connect themselves with no problem. Audacity has a list of connection drop-down menus just above the track editing area. See if your input device and/or output device is listed. If so, choose it, and you are ready.

Alternately, you may have to use your computer's System Preferences or Control Panels. Choose the one for Sound. Select Sound Input and the USB device should be listed. Select it. On the Mac, also look in Applications > Utilities > Audio MIDI Setup, and again select the Sound Input device. Then in Audacity's preferences, again select the input device (under Audio I/O) and check the sample rate and resolution settings (under Quality).

4. In Audacity, under View > Toolbars, make certain Meter Toolbar, Mixer Toolbar, and Control Toolbar are selected.
5. Slide up the input level on the Mixer Toolbar (Icon with a microphone). Select Start Monitoring from the drop-down menu under the Output Meter (again with the mic icon) in the Meter Toolbar.
6. Press the record button (red circle) on the Control Toolbar to start recording. Press the yellow square to stop recording.

Note: Don't be discouraged if it does not come together right away. There are lots of control panels on computers, and lots of options. But once you get it working right, write yourself some notes!

Lots of online help, including troubleshooting recording at http://manual.audacityteam.org/man/faq_recording_troubleshooting.html