

Introduction to Recording and Editing Audio with Audacity

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NCH CW 627: Final Year Project & Publishing Horizons

Prof. Kemp

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Objectives

- Understand podcast anatomy
- Learn best practices for audio recording
- Learn about and explore Audacity as a podcast editing tool
- Learn how to:
 - Record audio
 - Clip audio
 - Add/move/delete tracks
 - Add sound effects and/or background music
 - Save and export projects

Slides and handouts available at: <https://bit.ly/fa22-kemp-audacity>



Podcast Anatomy



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Podcast Anatomy: Intro/Opening Segment

Intros/Opening segments are listeners' **first impressions** of a podcast. From the opening segment alone, listeners make assumptions about the podcast's **audience**, **genre**, **style**, and overall **structure**.

This means that within a short timespan, the podcast's opening segment must successfully:

- Grab attention: several successful podcasts set the tone using **media** (e.g., theme song music, sound effects, archival audio clips).
- Identify an audience: acknowledging/naming people who might be interested.
- Establish listener expectations: explaining the goal and theme of the podcast.



Podcast Anatomy: The Body

The body will be the longest part of your podcast, and is where you really get to show off your storytelling and technical skills. In other podcasts, this is also where you might expect to find interviews with guests, regular features, quotations and soundbites from external sources etc.

For storytelling purposes, the body is where you will:

- Curate and build your narrative.
- Introduce and develop characters.
- Emphasize key themes and plot details.

Because it carries all these important features, the body requires the most planning.



Podcast Anatomy: The Outro

- Podcasts typically end with a **closing segment** of 10–30 seconds of music and audio acknowledging the **creator(s)**, **institutional affiliation**, **audio/production credits**, and **acknowledgments** including people whose work or advice has significantly influenced or contributed to the episode.
- An outro script for your class might sound something like “This podcast was made by [student name]...opening music created by [artist name], sound effects taken from [repository name]... with special thanks to [name] for their contribution.”
- It may also include music or sound effects to tie in to the theme or mood of the podcast.



Best Practices for Podcasting



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Making a Public-facing Podcast

Before you get started, spend some time considering the following questions:

1. Who is your audience? How can your podcast engage them?
2. What sounds and media would help to immerse your listener in the podcast story?
3. How many voices/perspectives are included in your podcast? Is it easy to keep these perspectives separate with sound only?
4. What is the pace of your podcast?

General Best Practices

- **Test your mic** and technology before you start.
 - Record some test audio and play it back before you begin.
- **Have a plan** for the conversation and transitions.
 - Give yourself a script. As you record, mark out spaces for transitions in the recording (topic-to-topic, parts of the episode).
- **Don't panic** over filler words (e.g., um, uh, yeah, like). Edit these out later.
- **Prepare phonetic pronunciations** for names, long numbers, and complicated terminology.
- Include **transcripts for accessibility** (use software like [Otter AI](#)).
- Use **open access media/music** ([Free Music Archive](#), [YouTube](#)).



Environmental Considerations

- Ideally, find a room with good sound absorption to prevent the “echo effect.”
 - **Yes:** carpet, cushions, bookshelves, clothes (bedrooms, closets)
 - **No:** larger spaces with hard, smooth surfaces (kitchens, bathrooms)
 - **Consider:** Does the room have an echo? Hard floors/countertops/stainless steel surfaces?
- Put some **distance** between yourself and the microphone.
 - Being too close can make the audio too loud or garble sound as you speak. If you are positioned too far away the audio will be too quiet or too muffled to salvage.
- Stay hydrated!
 - Keep a drink nearby (water, juice, etc.) to soothe your throat and keep it relaxed.



Making Podcasts: Audacity



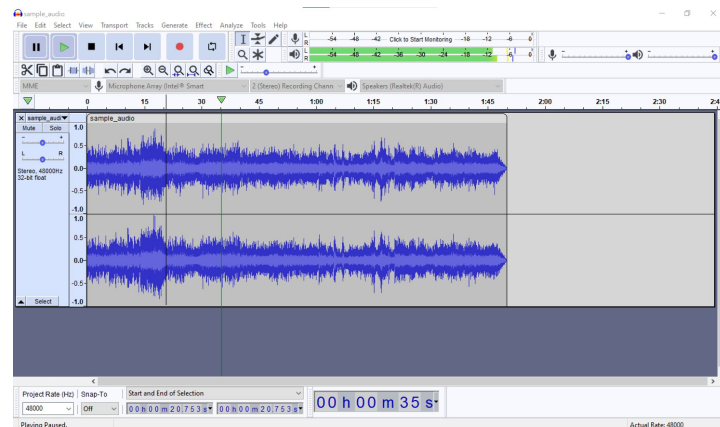
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What is Audacity?

An open source, multi-track audio recorder and editor.

Multi-track: the ability to have different layers of audio in one clip.



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Downloading Audacity

<https://www.audacityteam.org/> --- Audacity is platform-agnostic!

Choose if you want it for Windows, Mac, or Linux.

Audacity is free software and developed by volunteers.

 **Audacity for Windows**

Windows 10/8/7/Vista (XP support has officially been dropped)

 **Audacity for Mac OS X / macOS**

Mac OS X/macOS 10.7 and later.

 **Audacity for GNU/Linux**

Source code

For PC users: download **Windows Installer**

For Mac users: download **MacOS.dmg**

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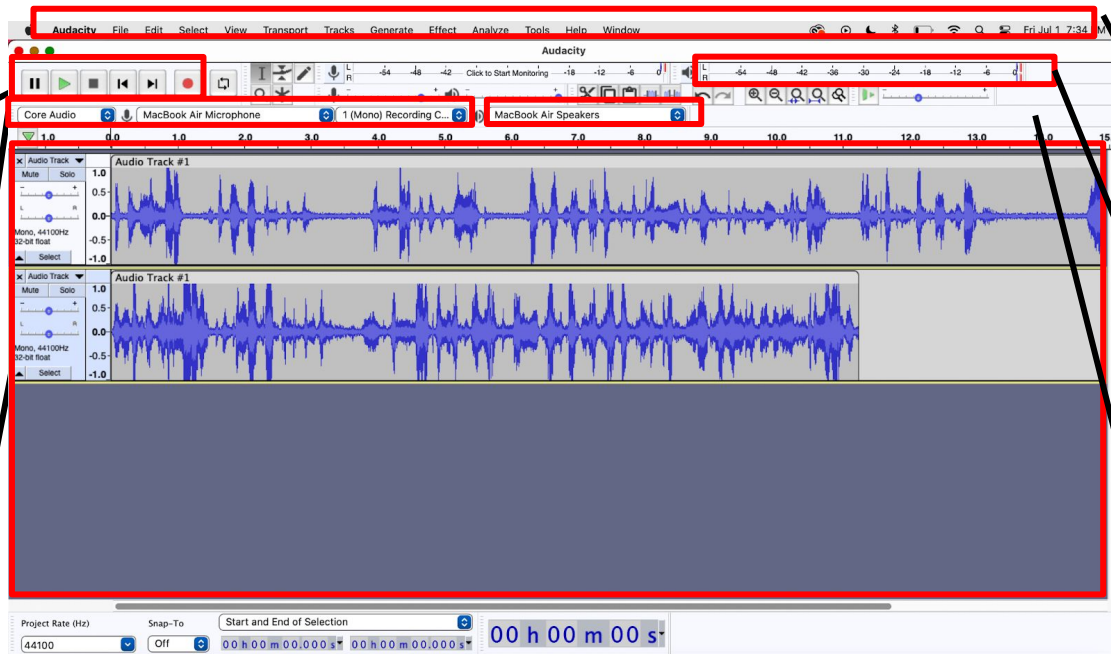
| | FILE | SIZE | VERSION | ANTIVIRUS |
|---|-----------|---------|---------|-----------|
| Audacity Windows Installer | Signature | 26.6 MB | 2.3.2 | 0 / 15 |
| Audacity Windows Zip | Signature | 13 MB | 2.3.2 | 0 / 15 |
| Audacity macOS DMG | Signature | 36.2 MB | 2.3.2 | 0 / 15 |
| Audacity Linux Source | Signature | 8.6 MB | 2.3.2 | 0 / 15 |
| Audacity Manual | Signature | 20.2 MB | 2.3.2 | 0 / 15 |
| Audacity macOS 2.1.1-DMG (screen reader accessible) | Signature | 38.6 MB | 2.1.1 | 0 / 15 |

Anatomy of Audacity

Main buttons (L-R):
pause, play, stop,
fast-forward/
backward, record

Microphone,
volume (the
“input”)

Recordings will
appear here.



Editing, saving,
effects,
transporting or
exporting the
recording.

Monitor: shows
the loudness of
each track in
real-time

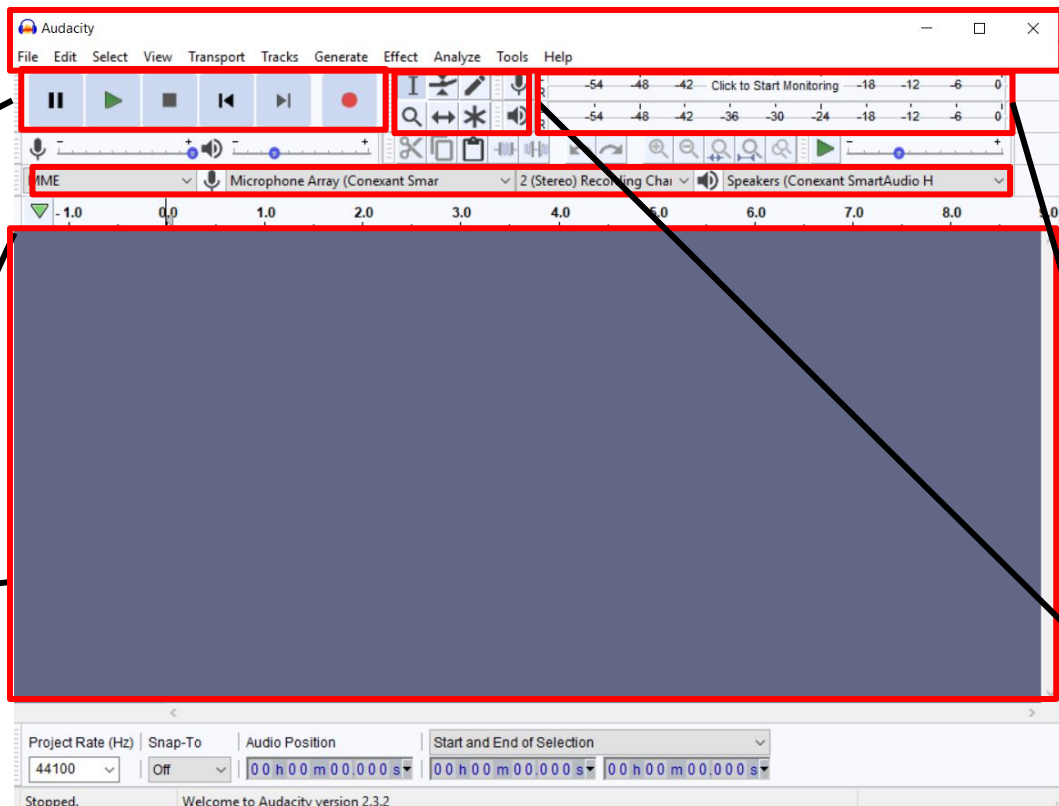
Stereo
adjustments
(the “output”)

Anatomy of Audacity

Main buttons (L-R):
pause, play, stop,
fast-forward/
backward, record

Microphone,
volume, input, and
output

Recordings (audio
tracks) will display
in this window
here.



Editing, saving,
effects,
transporting or
exporting the
recording.

Output Volume
Level Monitor:
shows the
loudness of
each track in
real-time
*Tip: try for -12
to -6db*

Other Audacity
tools

Key Terms

- **Track:** a single audio channel or stream.
 - **Multi-track:** an audio recording or channel with more than one track or recording of sound.
- **Clipping:** splitting audio into separate sections—that is, making “clips”
- **Waveform:** the curve within a track showing the duration and volume of individual sounds
- **Mixing:** the process of audio production, or mixing tracks of recordings, music, and other desired media.
- **MP3 File:** the most generally used audio file format. Others include .wav and .mp4.



Basics: Audacity & Recording Audio



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Getting Started: Tips for Recording Audio

- Know where your microphone is located and keep it clear of papers/other objects
- Use headphones when recording and editing
 - After you finish editing, listen to the file without headphones to see where the audio is too loud/quiet when played in a space.
- Take ambient noise into consideration
 - A/C units, refrigerators, traffic, pets, roommates, loud clothing, etc.
- **Save frequently.** Audacity does not autosave.



Recording Audio cont'd.

- Record test audio and adjust mic volume if necessary
- Record a few seconds of silence at the start and end of each track
- Begin way in advance, and do several takes
 - Editing often takes much longer than the recording itself!
- Speak slowly, clearly, and conversationally
 - If you use too many “filler words” (um, like, so) you can always edit them out later. Stop recording and start again at the top of the sentence to avoid jarring sound cuts in post-production

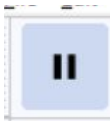


Recording

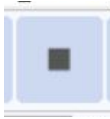
Make sure your **microphone** is working by checking to see that it's selected in the microphone section of the screen. Each computer will have different microphones, so check your sound settings for your model.



To **record**, click the button with the **red circle**.



Hit the **pause** button to pause a recording.



Hit the **stop** button to stop recording.



Use **Re-play** to verify that the recording is the quality/ volume that you want.

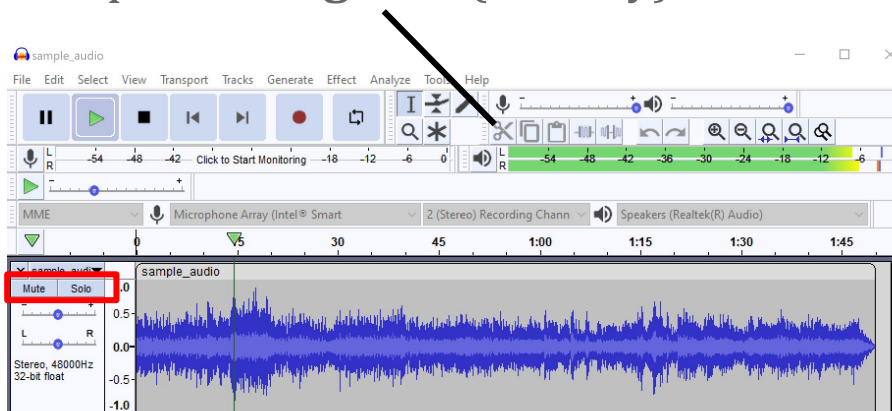


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Checking volume

Keep an eye on the **monitor** when recording and playing back your audio—try to keep it in the **green** (literally).



If your volume is too loud, the monitor levels will turn yellow and red. Tracks that are too loud will have a blown-out effect when played back.

If one of your tracks is louder or softer than the others, you can adjust the volume on each track.

Tip: to hear one track without the others, you can **mute** the other tracks or click “**solo**”



Basics: Audacity & Editing Audio



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The Audacity Toolbar

- **I** The **selection tool** will be selected automatically when you open Audacity.
- ***** The most useful tool is the **multitool**, which allows you to use all the functions of the other tools without switching to them.
 - The selection tool function is the default.
 - Hover over the waveform borders to use the envelope tool function.
 - Use your trackpad to zoom.
 - Zoom in and left click to use the draw tool function.



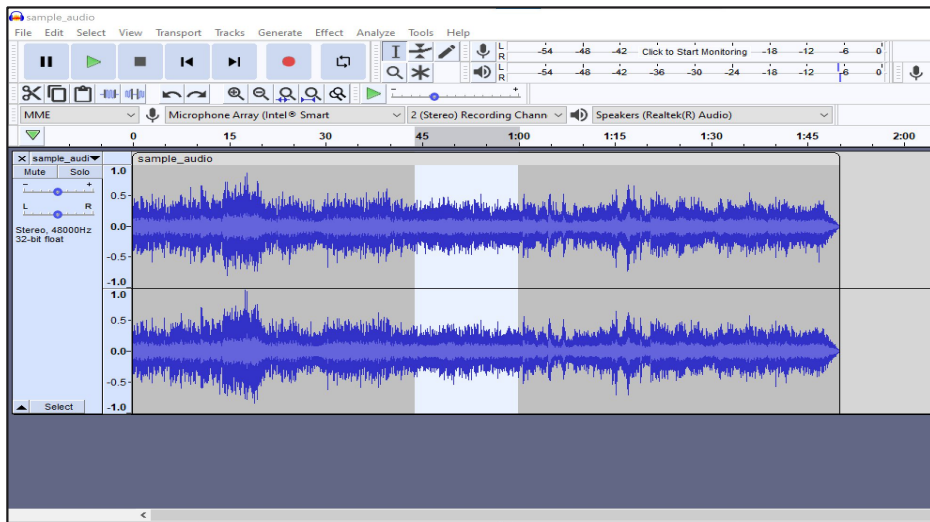
The Audacity Toolbar (Cont'd.)

-  The **envelope tool** allows you to smooth changes in volume by using control points at the top and bottom of the waveform.
 - Clicking on the blue border will create control points, which you can then move around to adjust the waveform envelope.
-  The **zoom tool** lets you zoom in and out of the waveform in order to make adjustments.
-  The **draw tool** allows you to manually redraw the waveform to change the volume or correct background noise.
 - You can only use the draw tool if you've zoomed into the waveform.



Moving Tracks

To move entire tracks or audio around in Audacity, you can click and drag them by hovering your mouse over the top of the clip.



Once you have selected the clip, click whatever clip or track you want to move and drag it into position.



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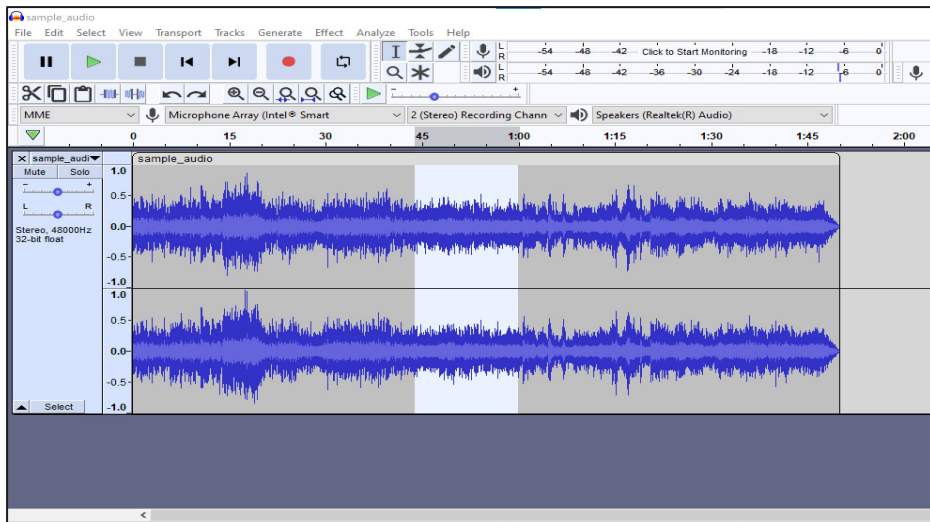
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Removing Parts of Tracks

Once you have recorded audio in Audacity, you can easily edit it. Here is how to remove sections using the **Selection Tool (F1)**:



Click and drag with your cursor to select the portion you wish to remove.

Then, hit backspace or delete on your keyboard.

Tip: you can zoom in and out with the **Zoom Tool (F4)** to better see what you're trying to delete.

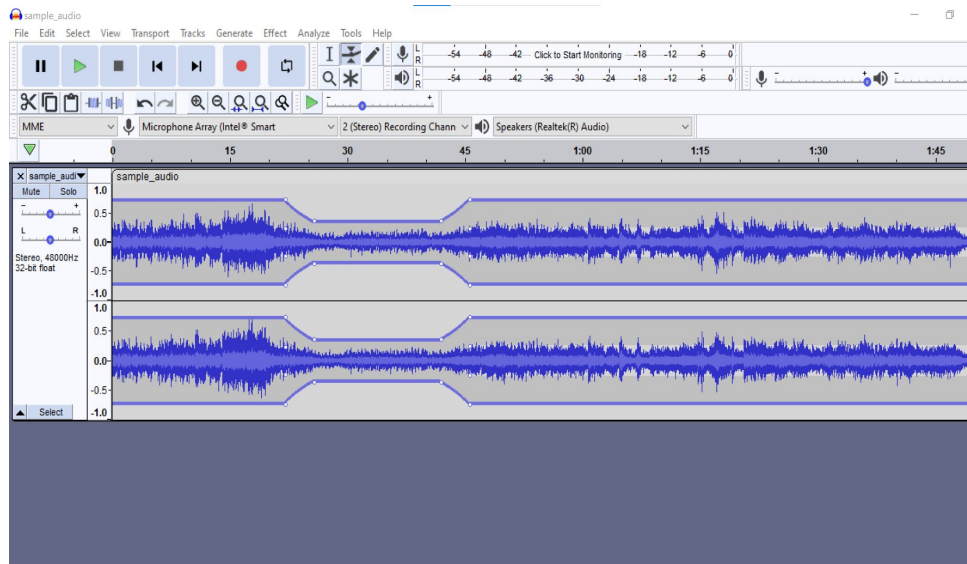


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Fading In/Out

To fade music in and out on Audacity, use the **Envelope Tool (F2)**. Two yellow bars will show up on each track.



Click to add **control points** (little white dots) on the track you want to fade in.

Drag and move the nodes to up and down and side to side to change the volume and how gradual the volume fade is.

Add and adjust nodes at the end of the track to fade the music back in.

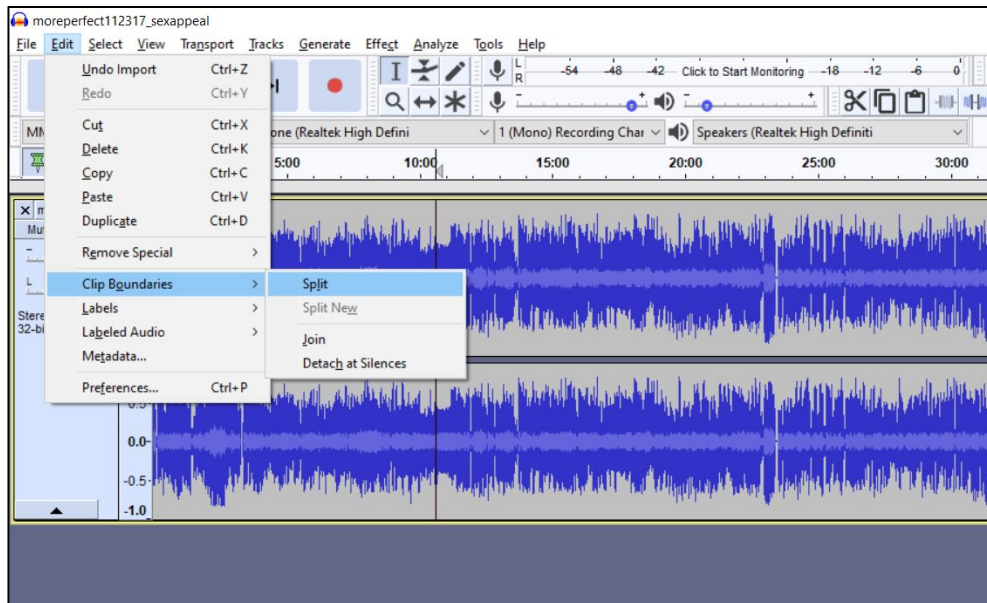


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Splitting Tracks

To split a track in Audacity, follow these steps to make shorter clips:

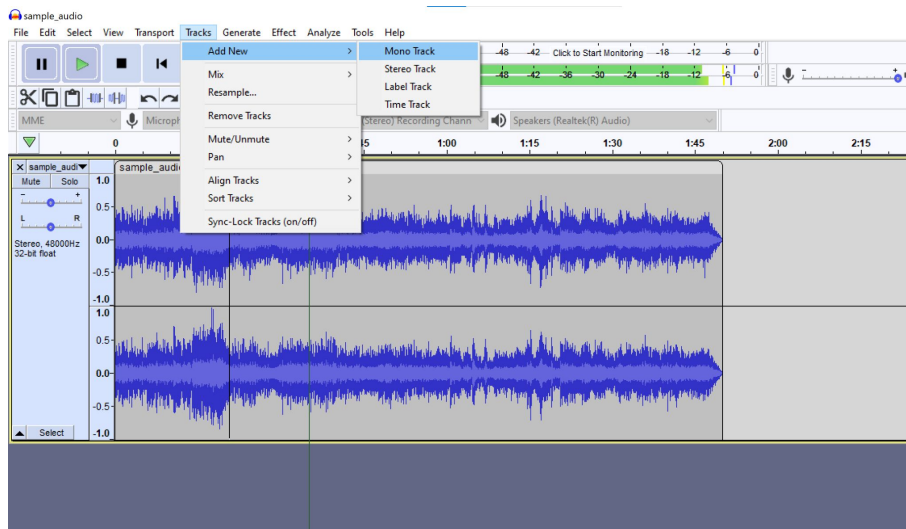


- With the **Selection Tool (F1)**, place your cursor over the section where you want to split your track.
- Navigate to the **Edit** section, click under “**Clip Boundaries**” and select “**Split**”, or press **Ctrl+I**.



Adding Tracks

To create additional tracks in Audacity for a **new recording**, hit the record button and it will start a new track. Another option is:



Navigate to the “Tracks” menu option and select “Add New.” This will open a list of options. Select the “Mono Track.” You can also add a new mono track by pressing **Ctrl+Shift+N**.



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Basics: Saving, Exporting, and Sharing



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Saving

Audacity does not auto-save! Save your recording, early and often!

Try and save after each major edit/input of a recording, just to be safe.

Save in multiple places. Always have backup.

File > Save Project > Save Project As> “Name of your podcast”

And once your project is saved...

File > Save Project > Save Project > [saves the updates to your file]



About File Formats

- **Lossless Audio File Formats:** better than or equal to CD-quality
 - **WAV:** uncompressed file, meaning huge file size. The best for editing raw audio files in Audacity.
 - **AIFF:** Apple's alternative to WAV. Uncompressed, not widely used
- ***MP3/MP4:** compressed audio file, ensures small file size. Best for exporting and distributing from Audacity.
- **Ogg Vorbis:** Open-source alternative to MP3. Used in Spotify streaming

**Note: The DITI typically recommends you save files as mp3 (sometimes mp4, if you use a PC).*



Exporting and Sharing

Finished with your recording?

Make sure you **export your project as an MP3** before you send or share it! This will ensure that other people are able to listen to it; anyone who does not have Audacity downloaded will not be able to open your project file otherwise.

File > Export > Export as MP3

Select “best quality”



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Exporting Metadata Tagging

When you export your file, Audacity will prompt you to add metadata tags to identify it.

In order to add artwork, you should import your file to an Apple Music library, right click on it and click “Get info.” You will see the metadata tags you entered in Audacity, and will be able to upload artwork for your podcast.

The image shows two screenshots related to Audacity's metadata tagging. The top screenshot is the 'Edit Metadata Tags' dialog box, which has a table for entering tags and values. The bottom screenshot is the 'Get Info' window for a file named 'DITI Audacity Sample', showing the 'Details' tab with various metadata fields filled out.

| Tag | Value |
|--------------|-------|
| Artist Name | |
| Track Title | |
| Album Title | |
| Track Number | |
| Year | |
| Genre | |
| Comments | |

Buttons: Add, Remove, Clear, Genres, Template, Edit..., Reset..., Load..., Save..., Set Default, Don't show this when exporting audio, Cancel, OK, ?

File Name: DITI Audacity Sample
Artist: DITI Researcher
Album: DITI

Details tab: title (DITI Audacity Sample), artist (DITI Researcher), album (DITI), album artist, composer, Show composer in all views, genre (Audacity Podcasting), year (2022), track (1 of), disc number, compilation (Album is a compilation of songs by various artists), Cancel, OK



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Thank you!

If you have any questions, contact us at: nulab.info@gmail.com

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Digital Integration Teaching Initiative
DITI/NULab Fellow

Chris McNulty

Digital Integration Teaching Initiative
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Office Hours sign-up: <https://calendly.com/diti-nu/>



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