

Editing Discussion Podcasts with Audacity

Version 1.0

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This article offers an introduction to podcast post-production operations using the sound editing software Audacity.

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Queens Podcast Lab
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This tutorial offers an introduction to basic operations involved in editing podcasts using Audacity, a freeware audio editing program.

BACKGROUND

This document is created as part of the Queens Podcast Lab's educational programming. It is part of our training program to use podcasting as a vehicle for training aspiring content creation entrepreneurs in the creative and business skills employed in this field. We train students to create, and to develop and administer enterprises to connect their creations to audiences. Our group is centered at Queens College in the City University of New York. To see more of our programming, visit the Queens Podcast Lab at QueensPodcastLab.org

WORKFLOW

Podcast engineering consists of the following steps:

1. **Importing tracks** into the editing program (page 2)
2. **Cleaning tracks** to remove background noise (page 3)
3. **Calibrating track volume** to ensure all tracks play at same level (page 3)
4. **Edit the discussion** to create the audience experience (page 4), this can include:
 - a. Removing backstage talk (page 4)
 - b. Silencing extraneous noises (page 5)
 - c. Removing or truncating silence (page 6)
 - d. Spacing audio (page 7)
 - e. Deleting verbal tics (page 6)
 - f. Adjusting volume (page 8)
 - g. Eliminating crosstalk (page 9)
5. **Produce the intro and outro** to bookend your programs with a recognizable and information start and end (page 11)
6. **Export to MP3** for distribution (page 13)

AUDACITY: A FREE SOUND EDITING PROGRAM

We demonstrate podcast editing operations using the software program Audacity. Audacity is a reasonably powerful freeware program. To download it, visit <https://www.audacityteam.org/download/>.

BEFORE YOU BEGIN

Before you begin, create a **working directory** that contains all of an episode's sound files, show notes, and other important materials. Doing so ensures that all your material is in one place.

Then open Audacity and begin by saving a *project file* in your working directory. On the menu bar, click **File > Save Project > Save As...**, then name and save the file (as in Figure 1 below).

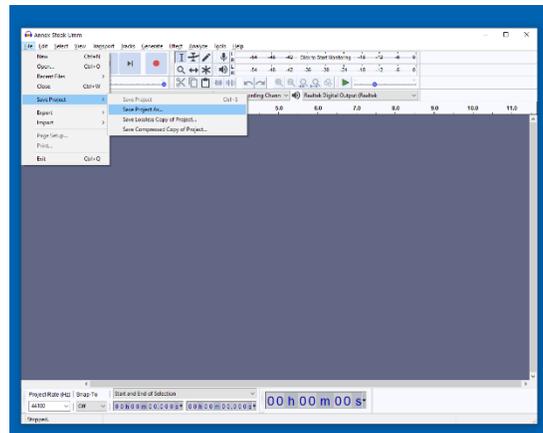


Figure 1: Saving a Project File in Audacity

A project file contains your instructions on how to cut and arrange your project's sound clips. It does not play audio, like an MP3 file. To make a playable sound file from the project you create, you need to export the file (discussed later).

STEP 1: IMPORTING TRACKS

Your first step is to import the tracks into your sound editing program. In Audacity, the simplest way is to drag and drop the files onto the Audacity timeline.

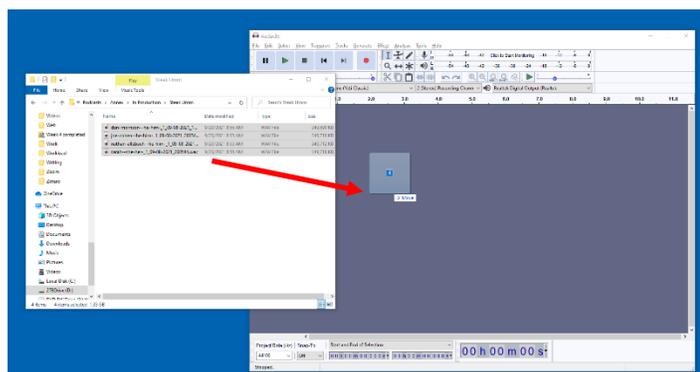


Figure 2: Importing Voice Files into Audacity

Alternatively, you click **File > Import > Audio...** on the menu bar, or use the hotkey **CRTL + SHIFT + I** (capital letter "i"). Once the tracks are imported, then you are ready to edit them and move them along the timeline.

STEP 2: CLEANING TRACKS

Your goal at this stage is to remove any constant background noises, like a humming fan or background white noise. To perform this step, we will use the **Noise Reduction** effect. For each voice track in an interview, perform these steps

1. Highlight a portion of the track in which the person is not speaking. Longer is better. Then, on the menu bar, click **Effects > Noise Reduction...** to bring up the Noise Reduction menu (see Figure 3),
2. In this menu, click the top center button: "Get Noise Profile". The window will disappear.
3. Highlight the entire voice track
4. Return to the Noise Reduction Menu through the menu bar: **Effects > Noise Reduction...**
5. Click "OK". A window should pop up to give you a time estimate until this operation's completion.

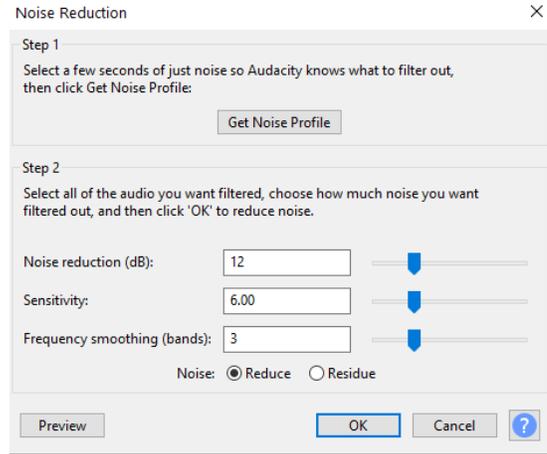


Figure 3: Noise Reduction Menu

Do this for all of the tracks. When this step is done, your individual voice tracks should have reduced background noise.

STEP 3: CALIBRATE YOUR TRACKS' VOLUME

The next step is to calibrate the tracks' volume, to ensure that one track isn't noticeably louder or softer than the others. You can do this using the Normalize effect. To implement it:

1. Select all track by clicking CTRL + A
2. On the menu bar, click **Effects > Normalize...** A menu like the one depicted in Figure 4 (below) should appear.

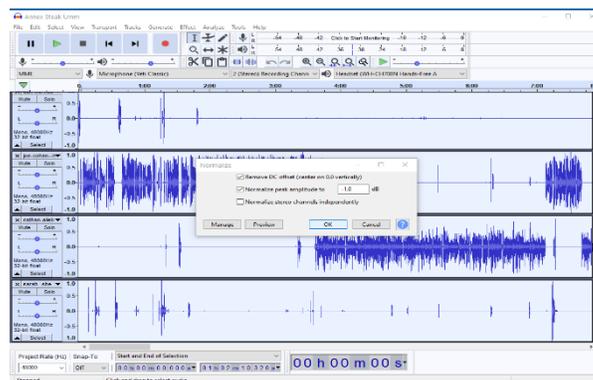


Figure 4: Normalize Menu

3. Click OK.

STEP 4: EDITING THE DISCUSSION

This is the main part of the editing process, in which the editor crafts the audience's experience of the discussion. This stage of the process is less mechanical than the previous three. For a more holistic view of how an editor can improve an episode, readers might enjoy [PODCAST EDITING PIECE WITH EMBEDDED URL AND CITATION](#).

Here, your job is to listen to the discussion and draw on your editing repertoire to craft a polished audience experience. Instead of going through a set list of steps, you listen closely to the discussion and use your judgment about how to

Below, we discuss implementation instructions for some basic editing operations. They include:

1. Removing backstage talk (page 4)
2. Silencing extraneous noises (page 5)
3. Removing or truncating silence (page 6)
4. Spacing audio (page 7)
5. Deleting verbal tics (page 6)
6. Adjusting volume (page 8)
7. Eliminating crosstalk (page 9)
8. Injecting or reordering audio (page **Error! Bookmark not defined.**)

Removing Back Stage Talk

Back stage talk are recorded discussions that aren't intended to be part of the audience experience. For example, a recording session might begin with the host giving guests instructions, or a host or guest says or asks something that is not intended to be part of the performance.

1. Ensure track lock is **on**. This will ensure that you delete the moment of a vocal tic across all individual tracks. If you don't, your tracks may become misaligned. Click **Tracks > Sync Lock Tracks** and make sure it is checked.

2. Zoom in and highlight the portion of backstage talk that you want to eliminate. In the example presented in Figure 5 (below), the guest asked some questions of the hosts about how to proceed in the performance of the discussion. It is not intended to be part of the show, and so we will delete it.

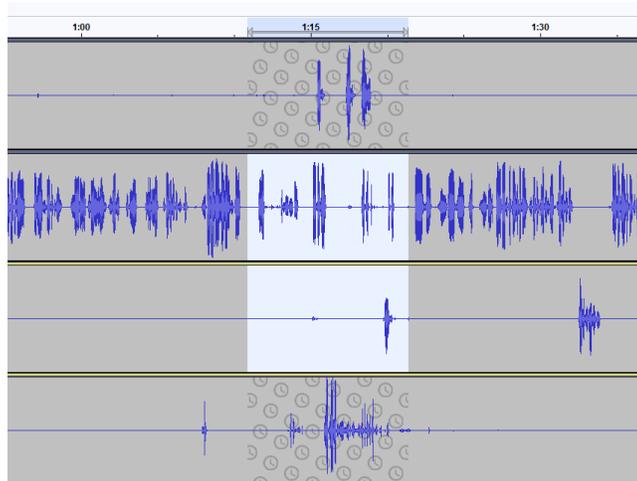


Figure 5: Highlight Backstage Talk, then Delete

3. Press the “Delete” button on your keyboard, or CTRL + K, or click **Edit > Delete**

Silencing Extraneous Noises

Sometimes, a cell phone will ring or a dog will bark during a discussion. These noises can distract listeners, and you might wish to extricate it from the audience experience.

If these noises occur on the track of the person who is speaking at the moment, then extricating that noise is very complicated. For our purposes, editors should leave them alone because it is not worth the time investment to extricate a moment.

If it is happening on another track, then you can momentarily silence a track by using the **Silence** effect:

1. Highlight the errant noise. In the example in Figure 6, a non-speaking performer cleared their throat.
2. Click the Silence button () or CTRL + L

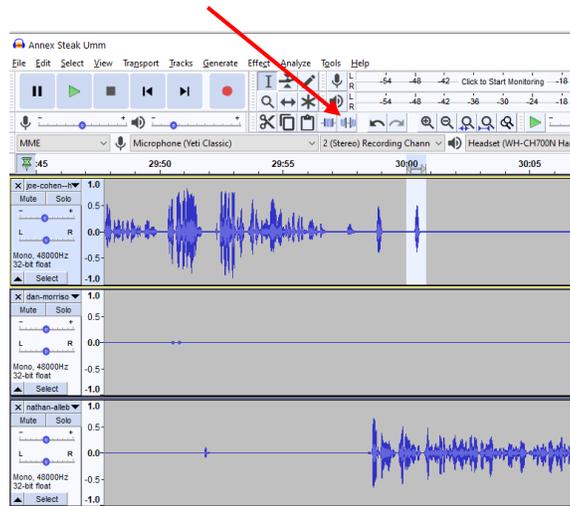


Figure 6: Highlight an Errant Noise, then Silence

Truncating or Removing Silence

Podcast guests sometimes worry that their recording sessions sound far less tight and fast-paced than your published episodes. They often do not account for the fact that the experience of a tight and fast-paced discussion are partly manufactured by our sound editors.

FIG below gives an example of an uncomfortable moment of silence in which no one knew what to say. When you take it out and present the conversation as flowing quickly to a different point, it often feels organic and avoids the moment of awkwardness that took place. To do it:

1. Ensure track lock is **on**. This will ensure that you delete the moment of a vocal tic across all individual tracks. If you don't, your tracks may become misaligned. Click **Tracks > Sync Lock Tracks** and make sure it is checked.
2. Zoom in and highlight the moment of silence that you wish to remove. In the example presented in Figure 7 (below), the speaker momentarily lost their train of thought, but quickly recovered.

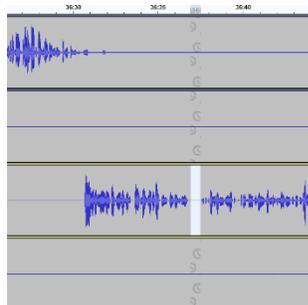


Figure 7: A Moment of Silence

3. Press the “Delete” button on your keyboard, or CTRL + K, or click **Edit > Delete**

Spacing Audio

There are also times that you would like to insert silence into a discussion. Maybe you want to create a dramatic moment, or space out an exchange that is occurring too quickly. To insert silence in a conversation:

1. Ensure track lock is **on**. This will ensure that you delete the moment of a vocal tic across all individual tracks. If you don't, your tracks may become misaligned. Click **Tracks > Sync Lock Tracks** and make sure it is checked.
2. Click **Edit > Clip Boundaries > Split** or CTRL + I
3. Click **Generate > Silence** and enter the time you want to push forward

Eliminating Vocal Tics

Vocal tics are involuntary words or noises that we make while speaking. We often use them in our speech during the instants in which we contemplate our words: “umm”, “uhh”, “you know”, “like”, and so on.

4. Ensure track lock is **on**. This will ensure that you delete the moment of a vocal tic across all individual tracks. If you don't, your tracks may become misaligned. Click **Tracks > Sync Lock Tracks** and make sure it is checked.
5. Zoom in and highlight the tic you wish to remove. In the example presented in Figure 8 (below), the speaker was saying “uhhh” in the middle of a sentence.

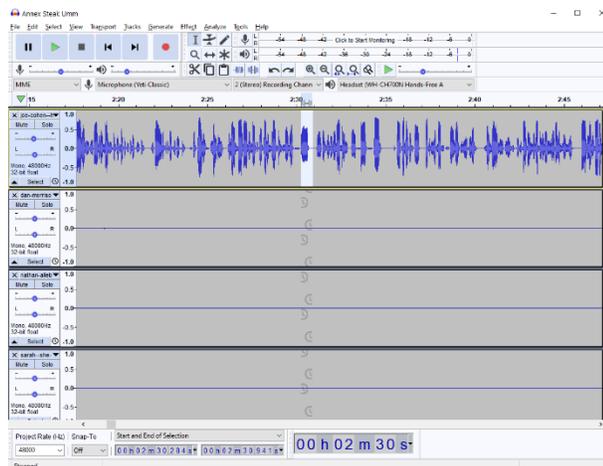


Figure 8: Highlighting a Vocal Tic, then Click Delete

6. Press the “Delete” button on your keyboard, or CTRL + K, or click **Edit > Delete**

Remember that eliminating vocal tics adds to the time required to edit podcasts. A show manager should decide the balance between polish and effective allocation of a podcast enterprise's resources. In other words, while it would be nice to get rid of all vocal tics, doing so requires time and, when resources are limited, involve

sacrificing other content creation or enterprise management work. You have to figure out how much to invest here.

Eliminating Crosstalk

Crosstalk occurs when two people speak at once. This operation is a little tricky, but can be important if there is a great exchange that is sullied by crosstalk. Figure 9 below is an example, in which the guest was telling a great story and the host blurted out that the story is amazing.

When crosstalk occurs, an editor has a few options:

- To silence the person who is saying something irrelevant
- To space out the exchange so it sounds like the speakers were taking turns.

In this case, we could just silence the host, but the speaker reacts to the hosts exclamation and the exchange adds a feeling of informal discussion that overall improves the experience, so I elected to keep it in.

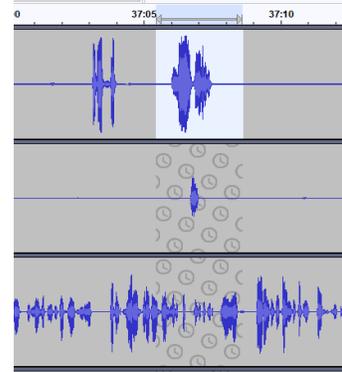


Figure 9: A Moment of Crosstalk

The challenge here is to maintain the synchronization between tracks. If we are going to add silence to a track, we have to add the same amount to all tracks to avoid losing sync. In Figure 10 below, I zoom in on the track to determine the length in which these speakers overlap:

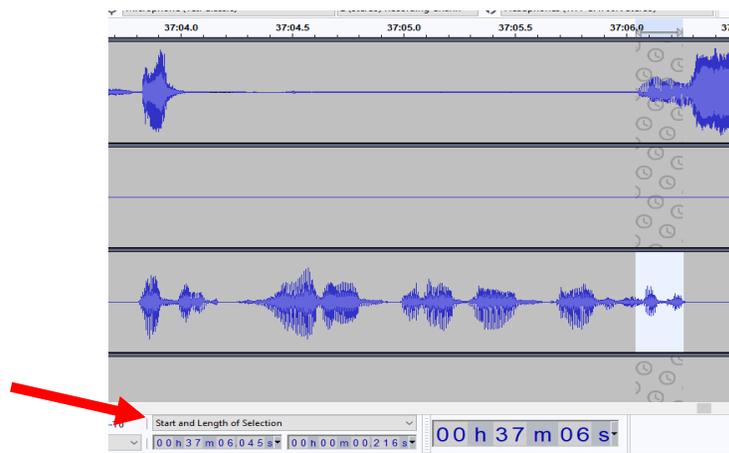


Figure 10: Measuring Overlap

Along the bottom bar of the Audacity window, you should see a box denoted by red arrows. These give you information about the time points that you are selecting. We want the length of the part highlighted above. It is 0.216 seconds.

So we are going to insert 0.216 seconds on each track, during parts where the person is not speaking. To do this, implement the following steps for each track on the time line:

1. Ensure Track Lock is **off**. Click **Tracks > Sync Lock Tracks** and make sure it is **NOT** checked.
2. Click a point on the line where no one is talking
3. Click **Edit > Clip Boundaries > Split** or CTRL + I
4. Click **Generate > Silence** and enter the time you want to push forward (here 0.216), then OK. See Figure 11 below
5. Complete for all tracks, such that they are all aligned after the crosstalk is spaced.

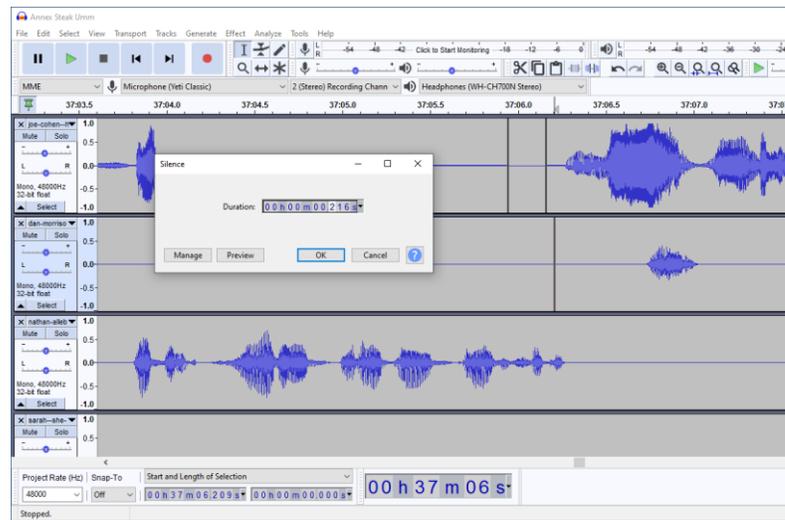


Figure 11: Insert Silence to Push Timeline Forward

Adjusting Volume

Over the course of recording, speakers mouths may drift away or towards the microphone, which alters the volume at which they come through in the audio file. To adjust this volume, we use the **Amplify** operation.

In this portion, the speaker said something very funny while their mouths were far from the mic. Another speaker (me) was too close to the microphone when they laughed. In the example below, I want to increase the volume of the joke, and lower that of the laughter.

1. Highlight the portion whose volume is being adjusted. I will start with the joke, which is too soft.

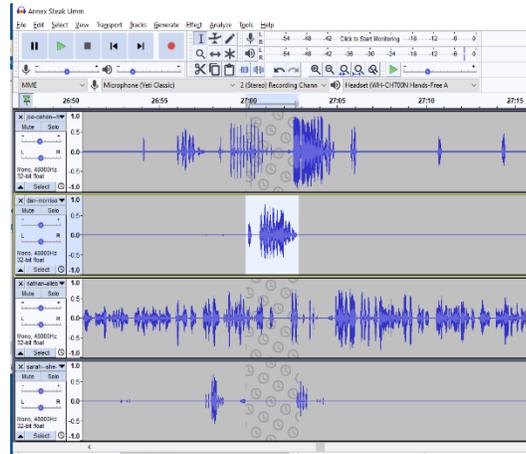


Figure 12: Highlight Part Whose Volume You Want to Adjust

2. Click **Effects > Amplify...** A menu will appear. To raise the volume of a track, enter a positive number in the box beside “Amplify” and click “OK”.



Figure 14: Select Portion Whose Volume is to be Lowered

3. I will now highlight the part whose volume I wish to lower. Note that the spikes on the audio segment amplified in the previous step are now larger.
4. Return to the Amplify menu, but use a negative number when setting a volume adjustment:

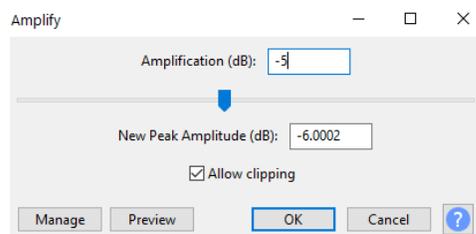


Figure 15: Use a Negative Number for Amplification, Suggesting Lower Decibels

STEP 5: INTRO & OUTRO

The intro and the outro generally feature prefatory and concluding remarks over a bed of music. Sometimes the host records these segments during the session, and at others they are produced after the fact and imported onto the timeline as a separate audio file. There are two parts to this operation: (1) inserting the audio on the timeline (if necessary) and (2) adding a bed of music.

Inserting Audio on the Timeline

To insert the audio of an intro:

1. Begin by ensuring that Track Lock is **off**
2. Import the audio clip of the announced intro into the project, as on page 2. We do this below in Figure 16

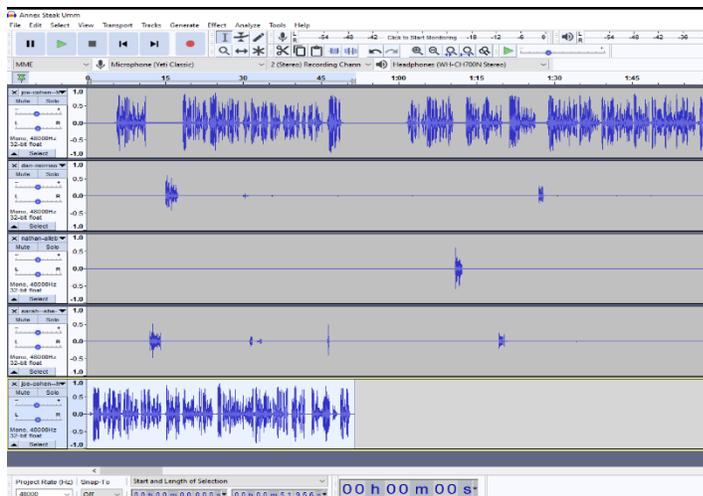


Figure 16: Import Audio of Intro onto Timeline

3. Highlight the other tracks during the timeline where the intro would be playing. Then click **Tracks > Align Tracks > Start to Selection End**, as in Figure 17.

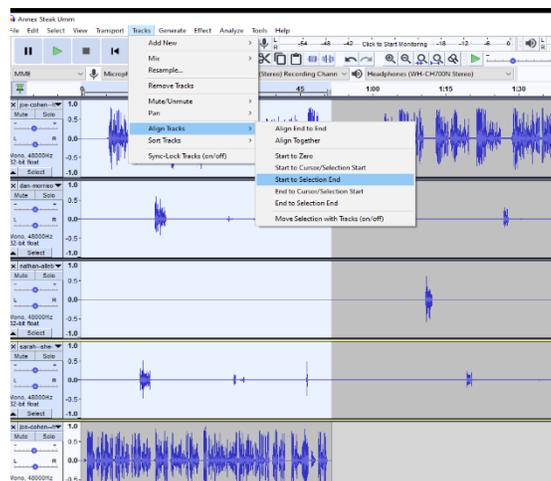


Figure 17: Align the Start to Selection End

4. When you click OK, the main episode tracks will be pushed down the timeline until after your introduction, as in Figure 18. You can then use your skills to fine tune the transition from intro to show.

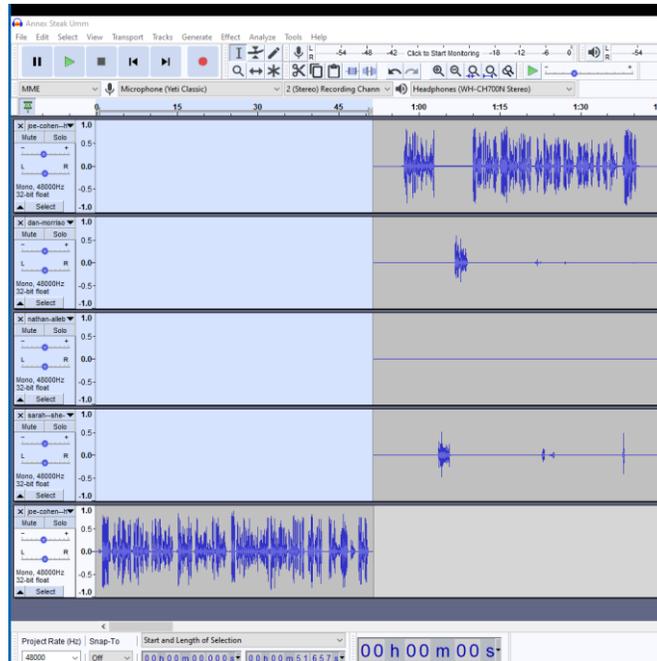


Figure 18: Realigned Tracks

For outros, you can append the speech files to the end of the timeline.

Incorporating Theme Music

You might want to put your announced intro or outro over a bed of music. Audacity has a function that allows automatically lowers the volume of the music when someone is speaking. It is called Auto Duck. To implement it:

1. Import your music file
2. Push the music file to the point of the timeline where you want it played. For intros, it is right at the start. Outros go at the end.
3. Move the audio file with the music directly **OVER** the track of the person who is announcing the intro or outro
4. You may wish to fade the music in or out. So, in Figure 20 below, I begin fading the concluding music in during the last moments of the conversation, so as to provide a musical cue of the show's end. You can fade music in with the effect

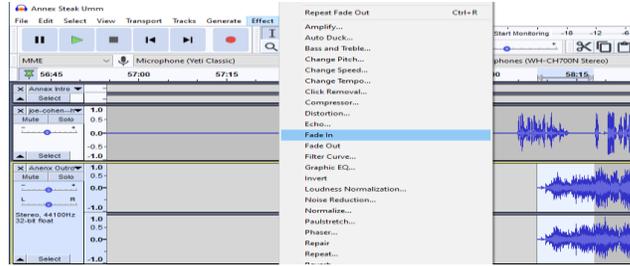


Figure 20: Fading in Music

5. I highlight the spoken part of the outro, then click **Effects > Auto Duck...** as in Figure 19

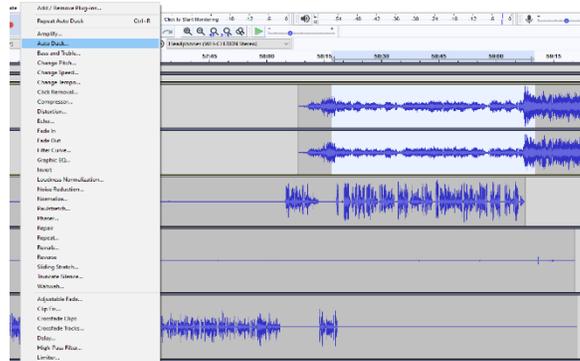


Figure 19: Auto Duck

6. You will probably not want to play the music for much longer than your spoken outro. Delete the extra outro music and fade it out.

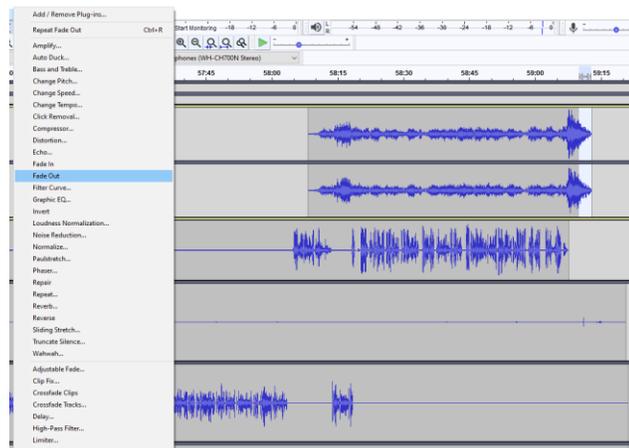


Figure 21: Truncate and Fade Out

STEP 6: EXPORT THE FILE

Once the timeline is completed and polished, you are ready to export the file as a playable sound file. Click **File > Export... > Export as MP3** to begin the process. Set the Quality setting to “Standard”.

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