Introduction

Audacity is a free digital audio editor and recording application that runs on Mac or PC. For this workshop, we will be using version 2.0.4 for Mac which can be downloaded here: *http://audacity.sourceforge.net/*

Set Sample and bit rates

1) Click on **Audacity** in the upper lefthand corner, then select **Preferences**.

2) In the dropdown menu, go to Quality.

3) Here you can select your **"Sample Rate"** (measured in Hz) and your **"Sample Bit Format"** (resolution). In addition to quality and resolution, these settings also affect file size.

00	Audaci	ity Preferences
Devices	Sampling	
Playback Recording	Default Sample Rate:	48000 Hz 🛟 48000
Quality	Default Sample Format: 3	32-bit float
Interface	Real-time Conversion	
Tracks Import / Export	Sample Rate Converter: Fa	ast Sinc Interpolation
Extended Import Projects	Dither: N	None 🗘
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Spectrograms Directories	Sample Rate Converter: (Dither: (ligh-quality Sinc Interpolation
Warnings		ihaped 🛟
Effects Keyboard Mouse		
		Cancel OK

If you are going to stream your audio as a **podcast** or burn to **CD**, use these settings:

- Sample Rate: 44100 Hz
- Sample Format: 16-Bit

If you plan to import your audio into a video project, use these settings:

- Sample Rate: 48000 Hz
- Sample Format: 32-Bit

Importing Audio Files

Formats that can be imported: WAV, AIFF, AU, MP2/MP3 or OGG Vorbis

1) When you open the application, it will immediately open a new project screen.

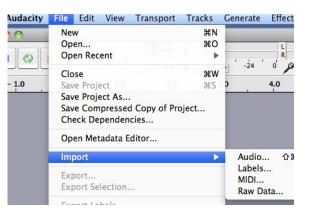
2) Select "**Save Project As**" to name your project and save a copy to the desktop. Audacity will save it as an ".aup" file (we will export to other formats later).

3) To import the sample audio files, go to File > Import Audio

4) Select the "**Audacity Sample Files**" folder from your desktop. You can select all four (4) files at once by holding down the **COMMAND** key.

5) When they are finished importing, you should have a project screen that looks like this:

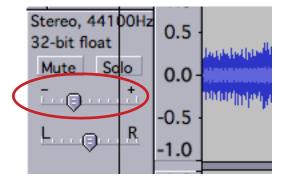
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Lib_CMRS I.0 Stereo, 48000Hz 0.5 32-bit float 0.0 Mute 5olo -1.0 -1.0 0.5 -1.0 0.5 -1.0 0.5 -1.0
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Importing Audio Files (continued)

6) You can listen to each individual track by clicking the **Solo** button, then hitting **Play**

7) If one track is too loud or soft, you can adjust its master volume by sliding the fader



Editing Audio

Here are the basic tools:

Selection Toolbar

Pro	ject Rat	e (Hz):		Selection Start:	🖲 End 🔘 Length	Audio Position:
44	100	•	Snap To 📃	00h00m00s-	00h00m00s-	00h00m00s+

Controls selection points and ranges "by the numbers"

Edit Toolbar



Cut, copy, paste, trim, silence, undo, redo, sync-lock, zoom

Meter Toolbar

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Displays levels for playback and recording

More tools:



Selection tool — for selecting the range of audio you want to edit or listen to



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Envelop tool — for changing the volume over time





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Zoom tool — for zooming in and out

Timeshift tool — for zooming in and out

Multi tool — lets you access all of these tools at once depending on the location of the mouse and the keys your are holding

Creating Soundbite #1

1) Navigate to "Interview 1." Make sure everything else is muted.

2) Use the **zoom** tool to get in a little closer. \wp

3) Use your **selection** I tool to place your cursor, and the space bar to play/stop.

4) Highlight the dialog beginning with *"What's your perception of downtown Los Angeles ...,"* which begins around 00:12, through *"... since I came back from Vegas, I think it looks a lot nicer,"* which ends around 00:24.

5) The **play** button will preview your highlighted selection, and you can use the tool that looks like a hand to adjust your intro and outro points.

6) Once you have your selection highlighted, hit **COMMAND-C** to copy.

7) Go to Tracks > Add New > Audio Track.

8) A new unlabeled audio track will appear at the bottom of your screen. Paste your selection into this track by hitting **COMMAND-V**.

9) Name this new track "01 Soundbite" by clicking the the arrow on the left.

10) Delete "Interview 1" by clicking on the "X."

Creating Soundbite #2

1) Navigate to "**Interview #2**" and select the dialog *"it's probably a bad thing for affordable housing ...,* " which begins around 01:38:05, through *"...mixed blessing I guess,*" which ends around 02:03.

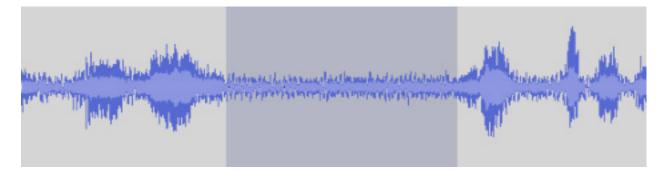
2) Repeat the steps from previous page and create a new track called "02 Soundbite."

3) Delete "Interview #2."

Noise Removal

1) In "02 Soundbite," there is a bit of **dead space** towards the end of her dialog between *"businesses, and um" and " ... so mixed."*

2) Highlight this dead space:



- 3) Go to Effect > Noise Removal.
- 4) Click Get Noise Profile. This will record the background noise that you have highlighted.
- 5) Go back to "02 Soundbite" and highlight the entire clip.
- 6) Select Effect > Noise Removal again.

Noise Removal (continued)

- 7) You can now adjust the faders and preview how it sounds.
- 8) Once you have set your desired levels, click OK.
- 9) This tool will extract the background noise from your soundbite

00	Noise Removal					
Noise Rem	oval by Dominic	Mazzoni				
Step 1						
out,	Select a few seconds of just noise so Audacity knows what to filter out, then click Get Noise Profile:					
Get Noise Profile						
Step 2						
Select all of the audio you want filtered, choose how much noise you want filtered out, and then click 'OK' to remove noise.						
Noise reduction (dB):	20					
Sensitivity (dB):	-0.15					
Frequency smoothing (Hz):	650					
Attack/decay time (secs):	0.75					
Noise:	 Remove 	○ Isolate				
Preview		Cancel OK				

On your own: Tighten-up "02 Soundbite" by deleting the "ums" and "pauses".



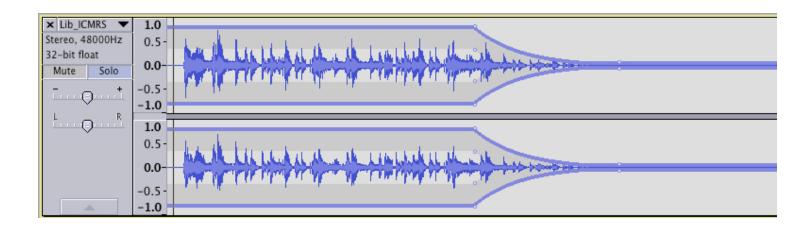
Envelope tool

The envelope tool is useful for ramping audio levels. Selecting the tool will add blue volume bars onto the timeline.

1) Activate the library music track "Lib_ICMRS" by hitting solo.

2) Select the **Envelope tool**; you should see the blue lines appear.

3) Click around **:06** to make your first point, then another around **:08**. You can control these levels by sliding the points up and down. Audacity will create a path between these points to make a smooth volume adjustment, or in this case, a fade out.



4) If you accidentally add too many control points, click on the point you want to delete, drag it outside of the track, then let it go.

Fade Effects

1) For fading in and out of tracks, you can also use effects.

2) Mute the music track and solo the downtown ambience track.

3) Notice that a car comes in around :09. Highlight and **delete** the first :07 seconds.

Fade Effects (continued)

4) Highlight the first few seconds of the newly-edited track.

5) Go to Effect > Fade in.

6) The beginning of the track is now flat and gradually rises:

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Mute Solo	0.0- -0.5 -		0.0-	
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ASSEMBLY

1) Using the **Timeshift tool**, \leftrightarrow slide your tracks so you have an order like this:

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Mute Solo	0.0-	A data and a data and a first of the Annual Annual Annual Annual Annual Annual Annual Annual
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L	-0.5-	hard the second s
	-1.0	

2) The order of what we should hear in the final product is: *Music, Ambient Sound, 01Soundbite, Music,*

On your own:

1) Use the **Envelope** and **Fade** effects to transition in-between each track.

2) Your final project should end up looking something like this:

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Mono, 44100Hz 16-bit PCM 0.5-	
Mute Solo	

EXPORT

1) Go to File > Export.

2) Under **Format**, select **MP3**. You should already have a Lame encoder installed.

3) Name your project and save it to the desktop. (You can also input metadata before saving).

Other uncompressed files AIFF (Apple) signed 16 bit PCM WAV (Microsoft) signed 16 bit PCM GSM 6.10 WAV (mobile)

✓ MP3 Files
 Ogg Vorbis Files
 FLAC Files
 MP2 Files
 (external program)
 M4A (AAC) Files (FFmpeg)
 AC3 Files (FFmpeg)
 AMR (narrow band) Files (FFmpeg)
 WMA (version 2) Files (FFmpeg)
 Custom FFmpeg Export