

**IS\_LT 7361**  
**Introduction to Digital Media**

**Keith E. Hedges**  
**Digital Audio Project**  
**Spring 2017**

**Hardware Used**

Manufacturer	Dell Inc.
Model	Optiplex 9020
Processor	Intel® Core (TM) i7-4770 CPU @ 3.40 GHz, 4 processing cores
Memory	8.00 GB RAM
System Type	64-bit Operating System
Graphics	AMD Radeon (TM) HD8570, 4827 MB
Monitors	Dell Inc., dual monitors, 1440x900 and 1280x1024
Web Browser	Windows 7 Enterprise, Google Chrome
Headphones	Logitech USB Headset H390

**Software Used**

Digital audio	Audacity
Web hosting	Neocities

**Project links**

Project links before peer evaluation

[https://khedges.neocities.org/Audio/Hedges\\_Audio1.mp3](https://khedges.neocities.org/Audio/Hedges_Audio1.mp3)

Project link after peer evaluation

[https://khedges.neocities.org/Audio/Hedges\\_Audio2.mp3](https://khedges.neocities.org/Audio/Hedges_Audio2.mp3)

**Project Description**

The primary objective is to create a digital audio that captures and manipulates digital audio information for web playback. The theme is an audio commercial for Sleepytime Tea. The voice audio is my reading of portions from the Sleepytime box. The background music is the Stray Cats version of instrumental *Sleepwalk*. The music is continuous and the voice and the music are overlapped for about two-thirds of the time. The music fades as the voice audio begins and fades to zero after the voice is completed. The extra effect was to echo Brian Setzer's guitar at the end as the music fades out.

*Technique 1 – Inserting audio recording*

- Open Audacity
- Edit > Preferences > Audio I/O > Recording set to headset

- Edit > Preferences > Audio I/O > Playback set to headset
- Edit > Preferences > Quality > defaults ok
- Click on red circle to begin recording
- Leave some dead space at beginning to apply filter for background noise
- Watch the time and talk for about 40 seconds
- Drop recording to 75% to avoid clipping
- Play > listen to the playback and evaluate; if okay continue, if not, rerecord voice
- Name voice recording layer as 'Voice'
- Save as Project1.aup (but will change for final submittal)

#### *Technique 2 – Inserting music file*

- Open iTunes (while keeping Audacity open)
- Library > Music > Sleepwalk > Right click > Create MP3 version
- Single click and drag new MP3 file into Audacity (place below the Audio track). You will notice two waveforms for music and one for the audio above
- Play > listen to the playback and evaluate; if okay continue, if not, select other instrumental music recording
- Save as Project1.aup

#### *Technique 3 – Overlapping audio and music*

- Listen to music track repeatedly to make decision on what elements of the music audio shall remain and what elements should be deleted since the music track is longer than the 30-60 seconds range
- Select tool > highlight voice track that is not appropriate for the commercial > Delete
- Listen to the audio track repeatedly to find appropriate starting and stopping point(s) that align with the music track
- Time shift tool > single click and drag the audio track to align the audio and music tracks (I started audio at about 5 seconds after music)
- Play > listen to the combined audio and music playback and evaluate whether the audio start and stop locations are appropriate; if okay continue, if not, repeat time shift tool
- Save as Project1.aup

#### *Technique 4 – Music fade*

- Envelope tool > Single click location for fade to begin > Single click location for fade to end (apply at where the music fades as the audio starts). This creates control points, the quantity is up to you, but more points provide more sound control, but is also more complicated.
- Manipulate the control points vertically where wider gap is more sound and narrow gap is less sound, and horizontally for time

- Envelope tool > Single click location for fade to begin > Single click location for fade to end (apply after the audio stops to fade the music to zero at the end of the track)
- Manipulate the control points vertically where wider gap is more sound and narrow gap is less sound, and horizontally for time. The separation must be greater than two seconds)
- Play > listen to the combined audio and music playback and evaluate the distinction and clarity between the voice and the music; if okay continue, if not, repeat envelope tool
- Save as Project1.aup

#### *Technique 5 – Echo effect*

- Select tool > last 16 seconds or so seconds of music track
- Effect > Echo > Delay time (seconds) ‘2’, Delay factor ‘0.5’ > OK (Play around with the time and factor to create something that is noticeably different and an improvement from the original.
- Preview > listen to the echo effect and evaluate the outcome; if okay continue, if not, repeat echo. If still not satisfied, use Effect > Delay to refine the echo effect. You can Undo as necessary.
- Save as Project1.aup

#### *Technique 6 – From AUP to MP3*

- File > Export > Save as type ‘MP3 Files’ > LastName\_Project2 > Save
- Clear metadata to remove the artist data

### **Peer Evaluation Feedback**

*Peer 1* The peer found the track to be ‘clean’ and ‘clear’ with ‘nice music’ and complimented the work. The recommendation for improvement was to reduce the background noise or amplify voice by a small amount.

*Peer 2* The peer found the lengthy fade as a positive feature. The recommendations for improvement are to change the echo effect or make it more noticeable. The peer noticed that the download was in a WAV format.

### **Peer Review discussion**

I thought all three suggestions were good: (1) reduce background noise, (2) enhance the echo effect, and (3) change the WAV to MP3. I experimented and implemented the three suggestions. I noticed that the playback is much better when wearing a headset.

- When I made the audio track, I paused briefly before speaking. The purpose was to address any background noise later. After listening to the before and after versions, I thought that this was the best of the three suggestions, and made a difference in the overall audio quality. Here are my improvements based on feedback:

### *Technique 7 – Noise reduction*

- ✓ Select tool > Highlight voice file where there is no voice, and contains only noise
- ✓ Effect > Noise reduction > Step 1, Get noise profile
- ✓ Select tool > entire voice waveform
- ✓ Effect > Noise reduction > Step 2, (dB) = 16, Sensitivity = 10, Frequency = 0 > OK
- ✓ Preview > listen to the noise reduction and evaluate the outcome; if okay continue, if not, repeat (You can click Undo as necessary, this process will take several iterations)
- I repeated the echo effect a few time and found that the Delay time (seconds) ‘0.75’, Delay factor ‘0.75’ appeared to have the best effect.
- Since I saved the file as an MP3, and dragged it into Neocities, I did not realize that they automatically converted the file into a WAV file, which was noticeably bigger. I paid a monthly subscription fee thinking that they may transfer my MP3 files to Canvas.

As a self-evaluation, I noticed that (1) my waveform included spikes, (2) my silent region of the voice track had small peaks before and after my reading, and (3) my length was 60 *sec*.

(1) The spikes are an indicator of uneven sound. Therefore, I chose to minimize the peaks by normalizing the entire voice:

### *Technique 8 – Normalize*

- ✓ Select tool > Entire voice track
  - ✓ Effect > Normalize > Check box ‘Remove DC offset (Center on 0.0 vertically)’ > Check box ‘Normalize maximum amplitude [-1.0] dB’ > Preview > OK
- (2) I chose to ‘cut’ out the small peaks before and after my reading.
- (3) I deleted the last second of the music track to make sure I was within the time limits. I also readjusted my envelope tool to fade to zero at end.

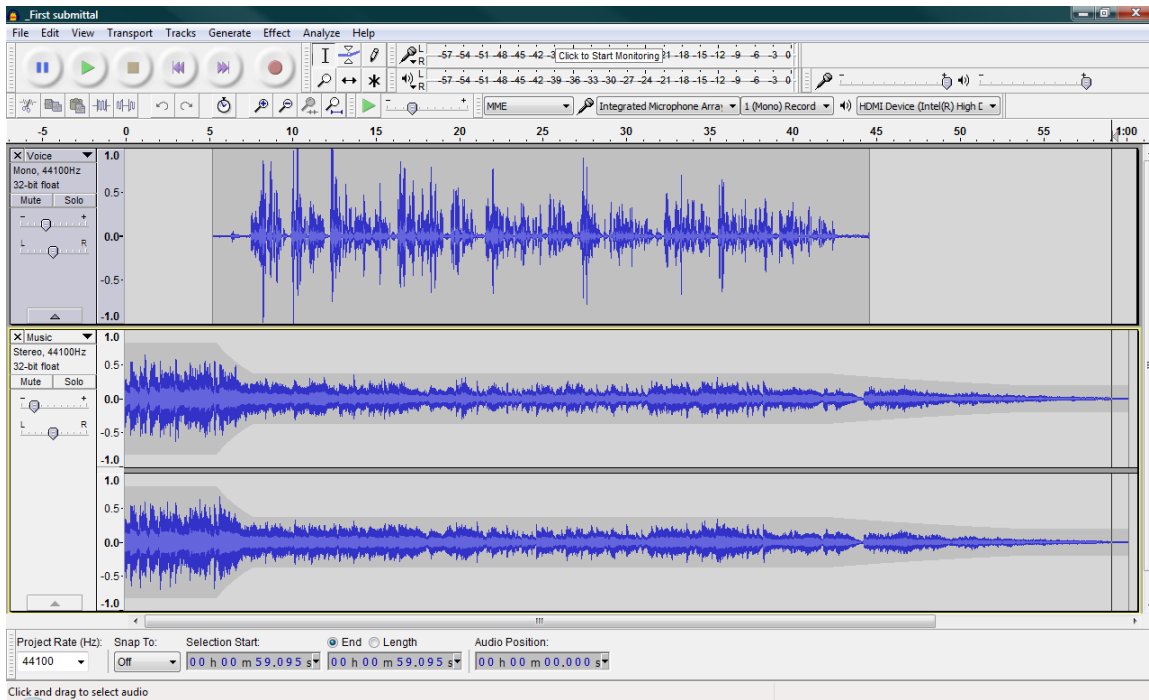
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Farina, S., & Farina, J. (1959). Sleepwalk [Recorded by Stray Cats]. On *Choo Choo Hot Fish* [CD]. Lookout Mountain, TN: Great Pyramid Records. (1992).

Celestial Seasonings, Inc. (2016). Box of tea. *Sleepytime extra*. Retrieved February 15, 2017, from <http://www.celestialseasonings.com/products/herbal/sleepytime-extra>

## Screen shot

### Original Audio



### Improved Audio

