

Matlab Sound Processing Exercises

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1 Part 1: Making Notes and Chords

- * Run this code to make, visualize, and play a note for an A above middle C: (http://tamaraberg.com/teaching/Spring_13/mm/labs/sound/note.m).
- * Play around with the values for freq, and xmax variables. What affect does changing their value have?
- * Now make a sound wave consisting of an A followed by a C followed by an E (this file has a list of frequencies for different notes http://tamaraberg.com/teaching/Spring_13/mm/labs/sound/notes.m). To put sounds in sequence just put them in your sound wave one after another.
- * In class we discussed how all sound waves can be decomposed as a weighted sum of sinusoids. Construct a chord with the notes ACE. Remember in order to add 2 vectors they need to be the same length (for notes that means they have to have the same duration).
- * Finally, make a sound wave consisting of an A followed by a C followed by an E, followed by an ACE chord.

2 Part 2: Importing Sound Waves

- * Run this code to import a sound wave: http://tamaraberg.com/teaching/Spring_13/mm/labs/sound/import.m. You can get the sound wave here http://tamaraberg.com/teaching/Spring_13/mm/labs/sound/, called cow.wav.

- * Put this cow sound into your sound wave from Part 1.

3 Part 3: Filtering & Visualizing Sound Waves

- * Try out this code for filtering and visualizing sound waves: http://tamaraberg.com/teaching/Spring_13/mm/labs/sound/soundfilt.m, requires the funky.wav sound file here: http://tamaraberg.com/teaching/Spring_13/mm/labs/sound/.
- * Try out the various types of filters – high-pass, low-pass, stop-band – on your wave from Part 2.