

NOTE: To students who do not have access to LEARN yet, please send files to

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With the Subject: CS489 (undergrad)

or CS698 (grad)

Assignment 0

Due: Wed 11 Jan, 23:59 (submit via LEARN).

Part 1. Generate a mono WAV file, with fs (sample rate) 44100 Hz and 16 bps (bits per sample).

The file should contain one second of a pure tone (a sinusoid) at B_{b3} (A_{#3}/B_{b3} 233.082Hz).

For a list of notes and their frequencies see https://en.wikipedia.org/wiki/Piano_key_frequencies.

The WAV file should be normalized to a *peak level* of -10 dBFS (decibels, re 0dB = peak value).

Part 2. Generate a second mono WAV file with the same parameters as Part 1 except for the tone B₃ (B₃ 246.942 Hz).

Part 3. Generate a third mono WAV file that is the sum of part1 and part2.

Part 4. Using the speed of sound $c=343$ m/s, enter the wavelength (in cm) for each of the waves in Part 1 and Part 2.

Note: You may use Octave, any other programming language, or any commercial software you wish.

Please submit (via LEARN) the following, three WAV files

part1.wav, part2.wav, part3.wav

And a text file

wavelengths.txt

Containing λ_1 and λ_2 , in centimeters.