

MMI504

Audio Analysis and Synthesis

M W 12:10-1:00 P.M

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Exercise .1

1. Read in any wavfile and plot its waveform. Also plot the first 20 ms of the waveform.
2. Create a sine wave from $-\pi$ to π with a maximum amplitude value of 2 and a minimum of 0.
3. Create a square wave using sine waves.
4. Create a 1kHz sine wave of duration 5 seconds sampled at a sampling frequency = 44.1kHz. Plot one cycle of the waveform and save the created wavfile as "OnekHz_Sine.wav" with a sampling rate of 22.05kHz and 16 bits/sample format.
Play it back at different sampling rates and observe the difference in pitch and duration.
5. Create any chromatic scale of your choice.

Note: Please do not forget to label all the plots.