

Signals project milestones 1 & 2 report

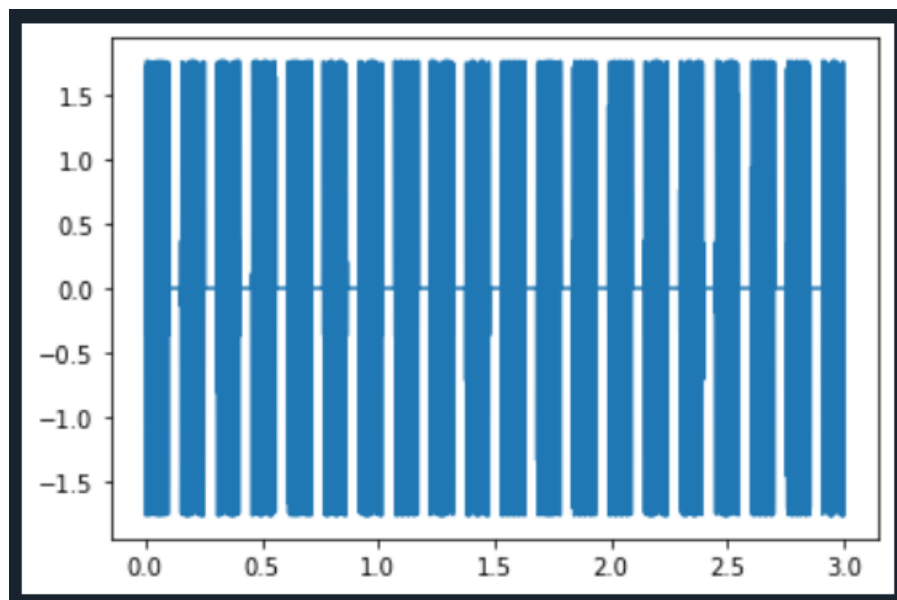
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- Import the needed libraries to use operations, to plot and to produce audio
- Define the frequencies of notes to be used in the 4th octave & depending on the fact that the frequency of the same note in the 3rd octave is half of that in the 4th octave
- Create 12*1024 samples for 3 seconds which is the duration of the song from 0 to 3
- Create a list of the notes to be played
- Define the duration of each note to be 0.1
- Define the total signal
- Define the start time of each note that gets updated in the loop that'll be defined below to achieve different starting times for each note
- Create a loop to play each note from the array sequentially in the 3rd & 4th octaves together at the same time
- Plot the total signal over the time domain



- Set the number of samples to 3×1024
- Set the frequency axis range from 0 to 512
- Get the Fourier transform of the original signal and plot it
- Get the peak of the original signal in Fourier transform and round it up
- Generate 2 random frequencies as the noise, add them to the original signal and plot the result
- Get the Fourier transform of the resultant signal and plot it
- Put the y-values of the resultant signal in Fourier transform in an array
- Put the frequencies at which these y-values are higher than the peak of the original signal in Fourier transform in an array
- Create the final signal by subtracting the noise created by the 2 random frequencies from the signal containing the noise and plot it
- Get the Fourier transform of the final signal and plot it
- Play the audio after noise cancellation

