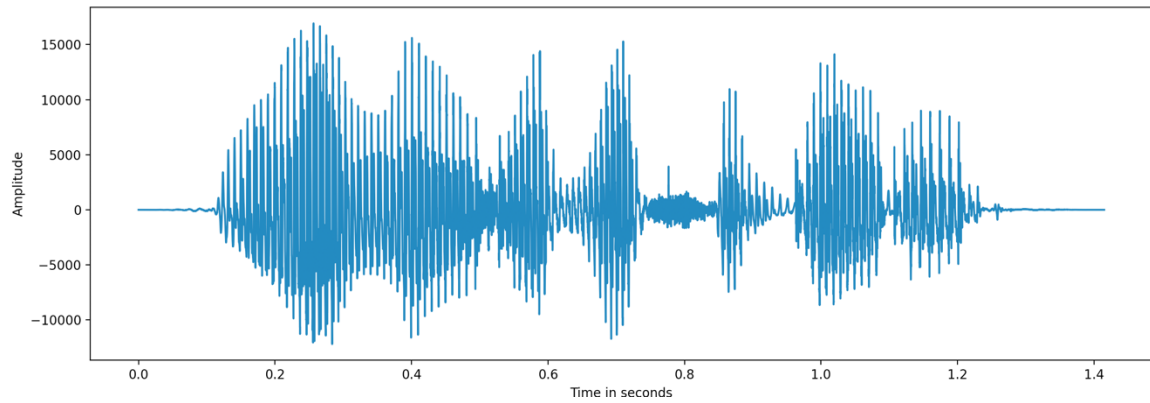
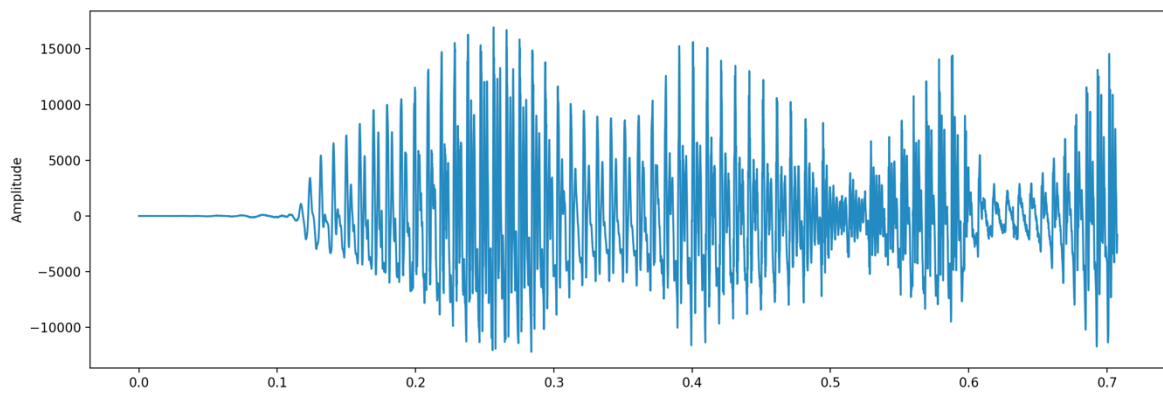


Task 7.1P

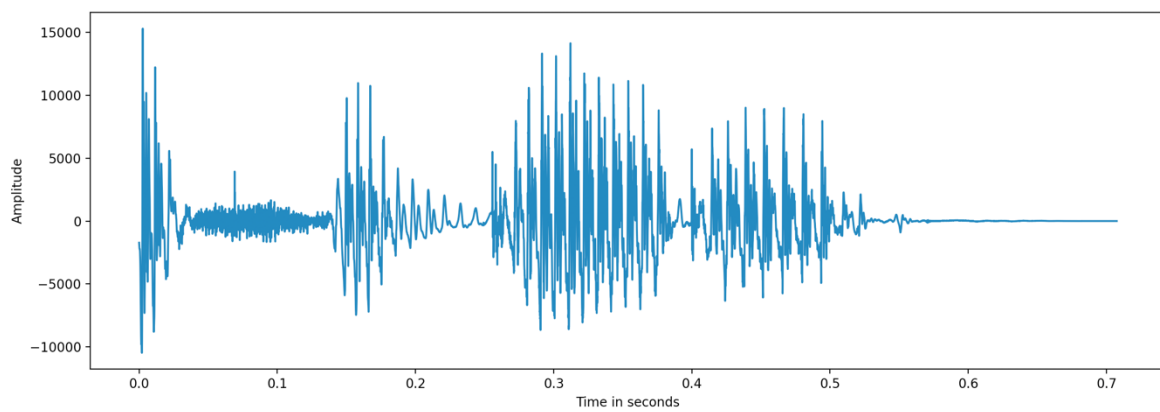
Original audio sample



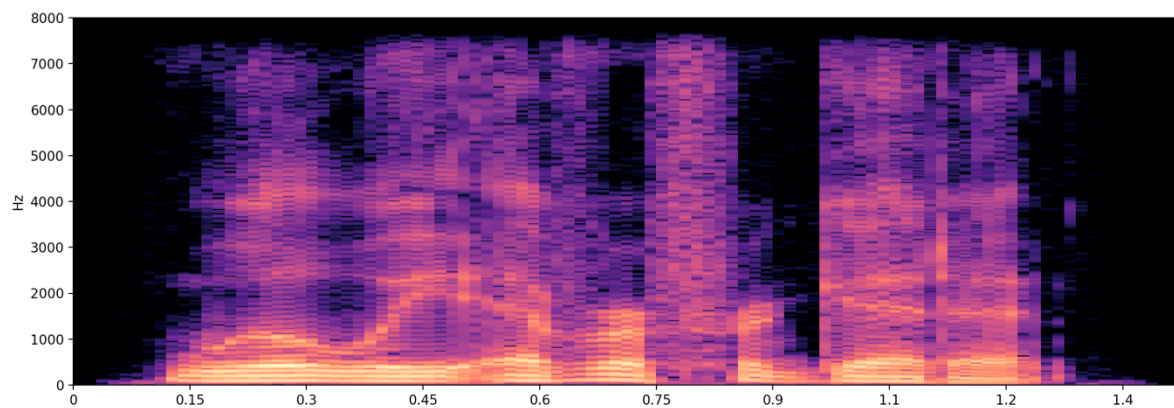
X1



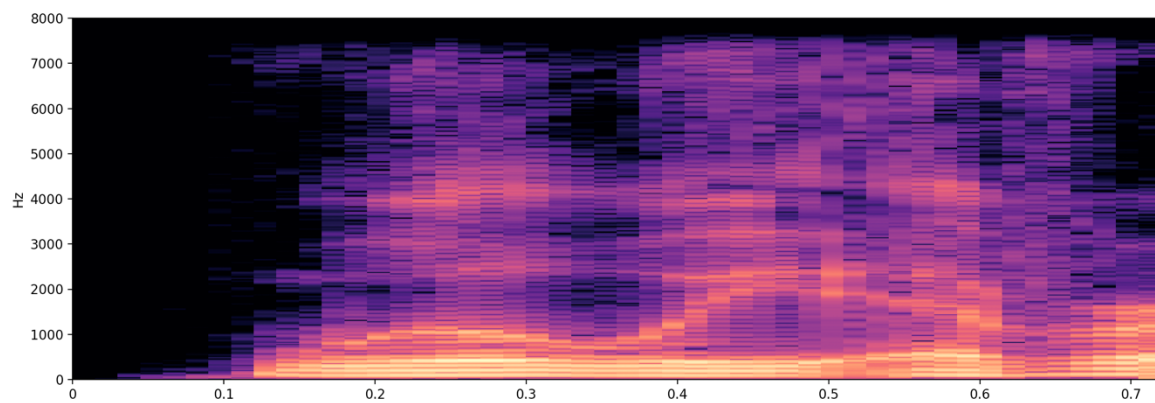
X2



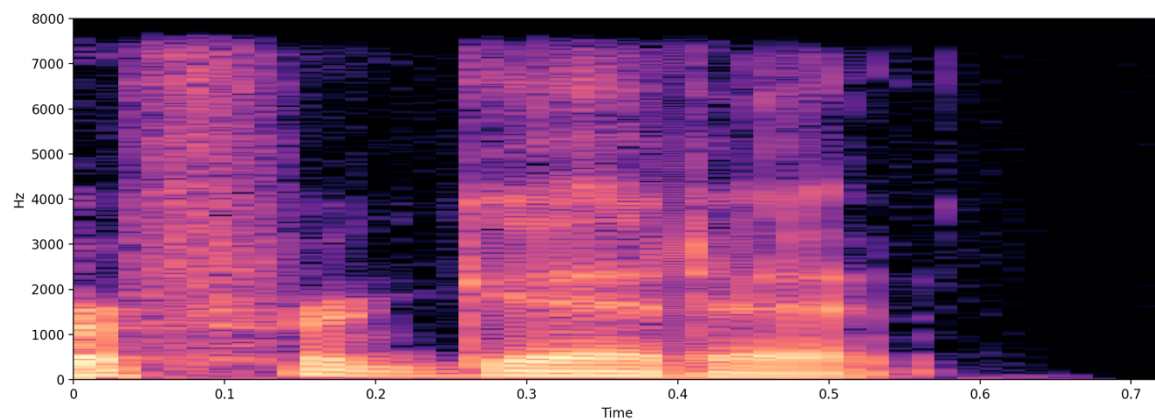
Original spectrogram



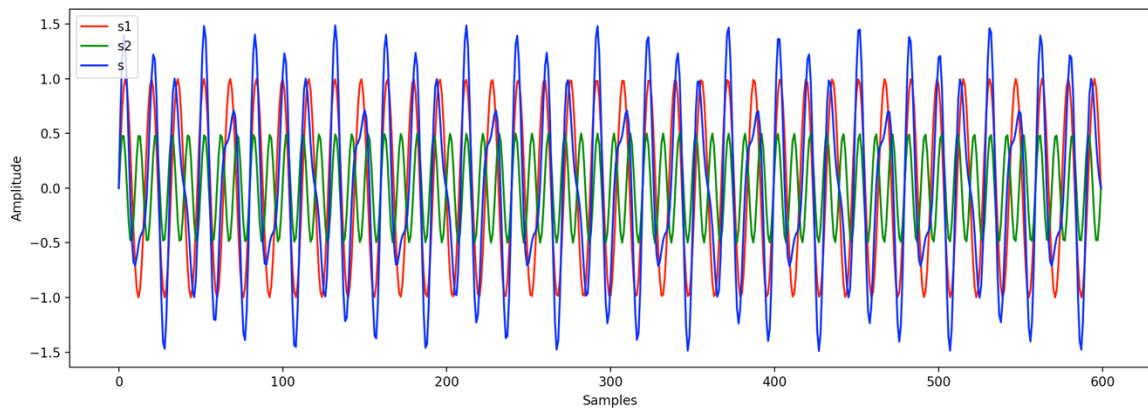
X1 spectrogram



X2 spectrogram

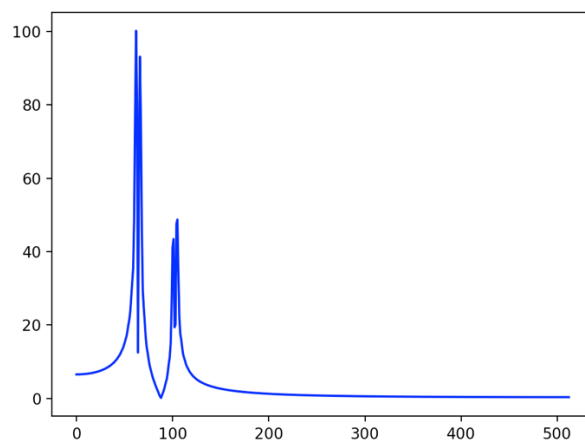


S1, S2, S (S1+S2)

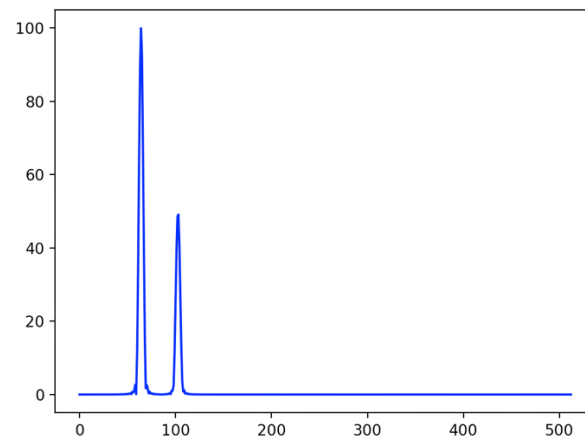


Hann window technique

Longer window frame

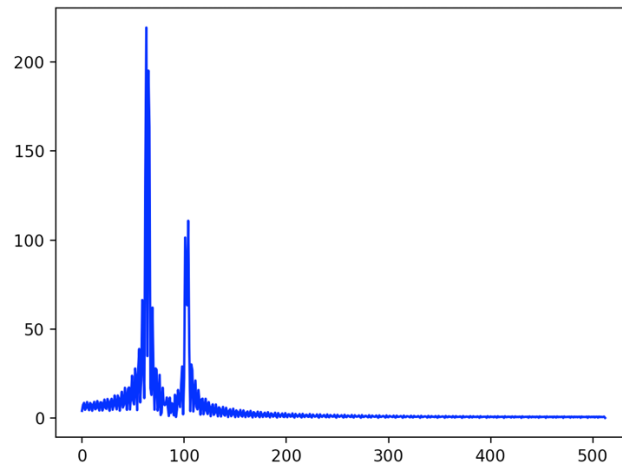


Shorter window frame

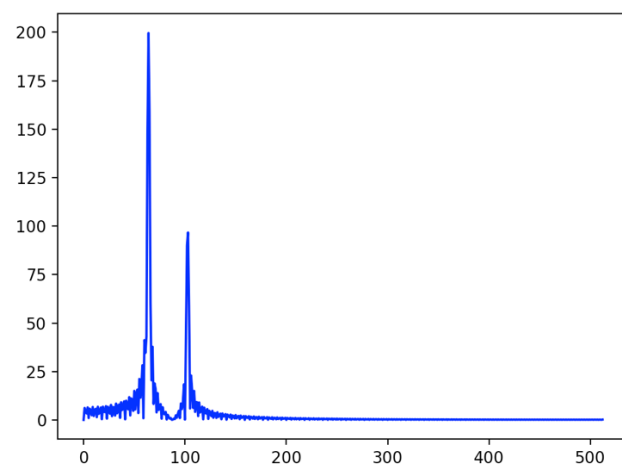


Boxcar window technique

Longer window frame

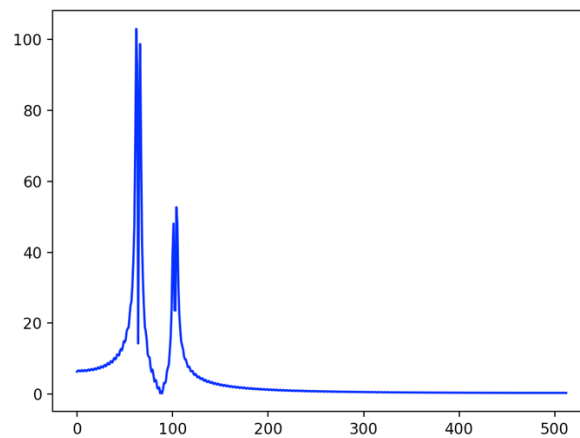


Shorter window frame

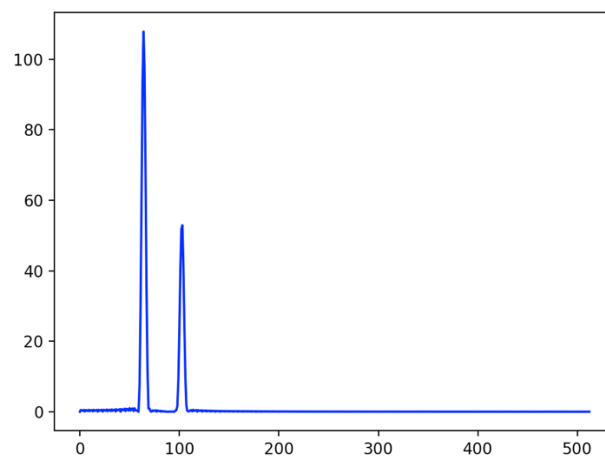


Hamming window technique

Longer window frame



Shorter window frame



With respect to the Hann Window and Hamming Window techniques respectively, when the window length was shortened, the 2 sinusoidal signals $s_1(t)$ and $s_2(t)$ of different frequencies were clear and there was close to no disturbance of other signals as seen in both graphs.

With respect to the Boxcar Window technique, when the window length was shortened, the 2 sinusoidal signals $s_1(t)$ and $s_2(t)$ of different frequencies were clear but the disturbance of other signals were very visible. This means that this technique was not able to truncate signals properly.