<u>Project Report</u>

<u>Section 1:</u>

- o Order (Filter Order):
  - Low Order: Low-order filters have a gentle roll-off and may not effectively remove high-frequency noise. They are useful when you want to preserve more of the high-frequency content in the signal.
  - High Order: High-order filters have a steeper roll-off and can effectively remove high-frequency noise. However sometimes they seem to also introduce some distortion.
- o Cutoff Frequency (cutoff_freq):
  - Low Cutoff Frequency: A low cutoff frequency allows more low-frequency components to pass through while attenuating high-frequency noise.
  - High Cutoff Frequency: A high cutoff frequency attenuates more of the high-frequency components.

<u>Section 2:</u>

- After using spectral subtraction on the Noisy Signals files, it is observed to significantly reduce the noise but always seems to be very silent from manually testing on the specific files.

Spectrogram - Noisy: sp01_babble_sn5.wav, Noise: Babble Noise

Spectrogram - Noisy: sp04_babble_sn5.wav, Noise: Babble Noise

Spectrogram - Noisy: sp03_station_sn5.wav, Noise: Station Noise

Spectrogram - Noisy: sp05_station_sn5.wav, Noise: Station Noise