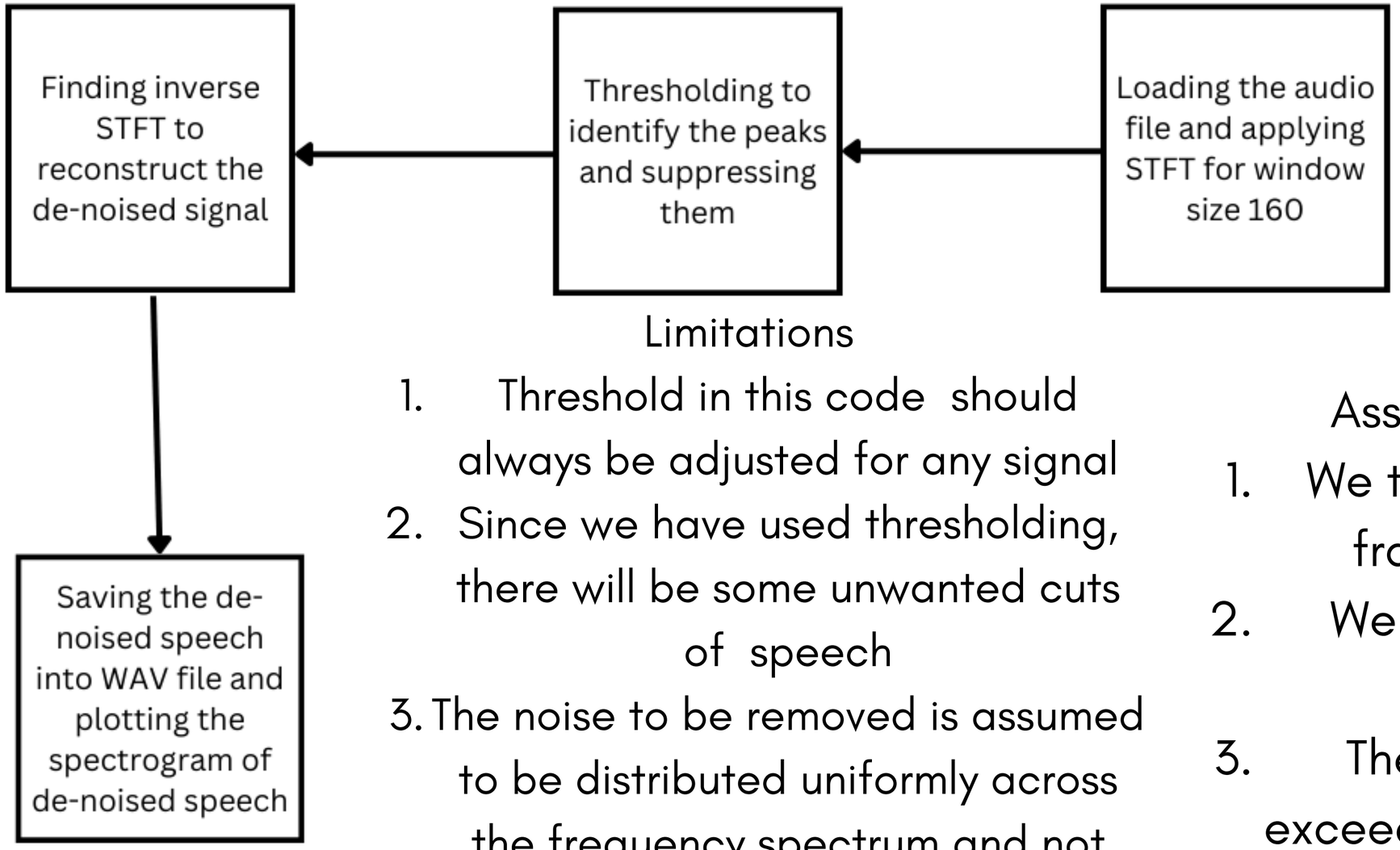
DSP PROJECT

TEAM 7

20 April, 2024

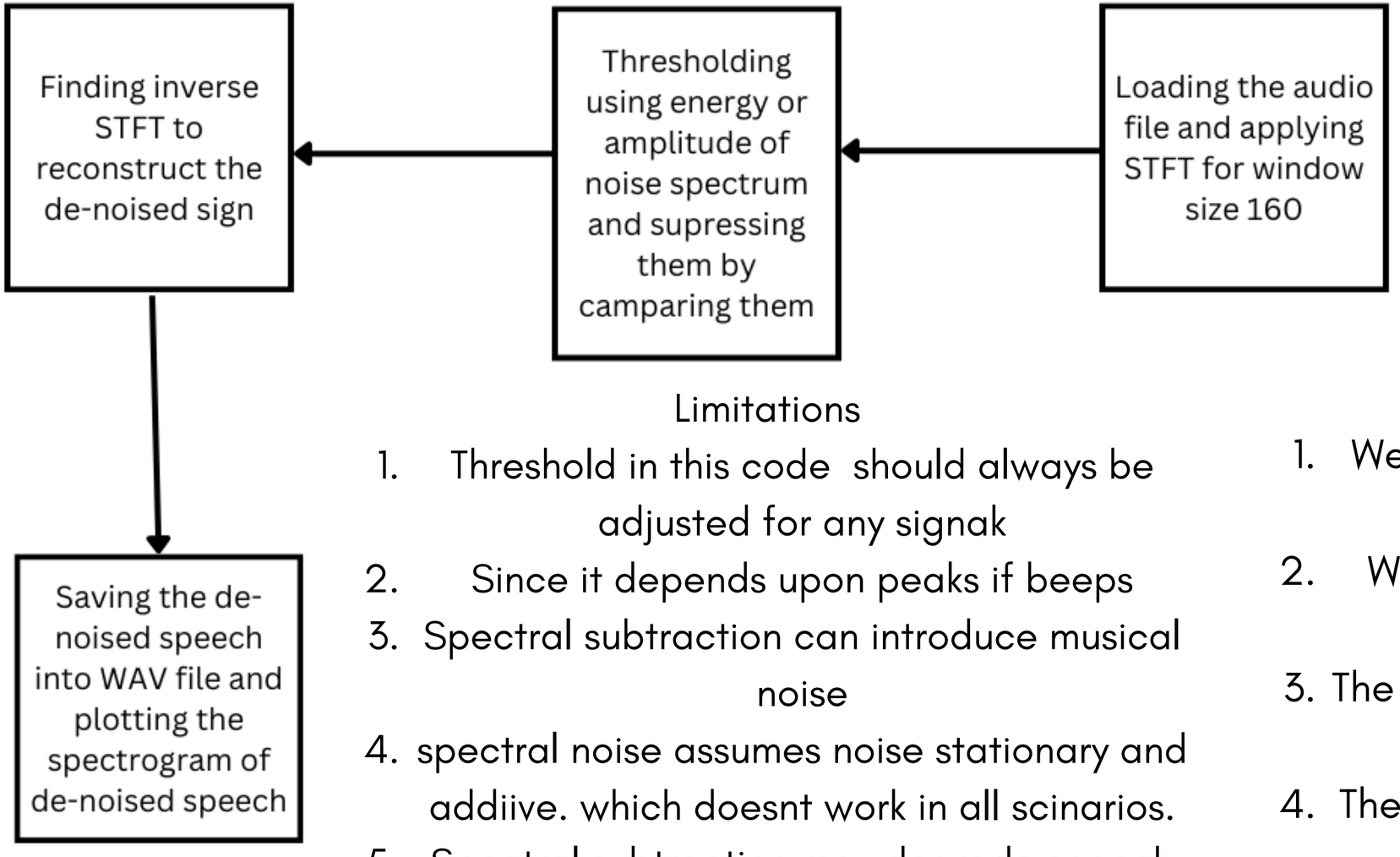


Limitations

1. Threshold in this code should always be adjusted for any signal
2. Since we have used thresholding, there will be some unwanted cuts of speech
3. The noise to be removed is assumed to be distributed uniformly across the frequency spectrum and not highly localized.
4. Also if the beep amplitudes are almost equal to signal, then this code fails

Assumptions in my code:

1. We took overlap size as half of frame size or window size.
2. We took hanning window for better results in stft.
3. The frequency components exceeding the threshold are noise.
4. We also took mean as the parameter for thresholding
5. Also, we assume the peaks of noise to be zero



Limitations

1. Threshold in this code should always be adjusted for any signak
2. Since it depends upon peaks if beeps
3. Spectral subtraction can introduce musical noise
4. spectral noise assumes noise stationary and addiive. which doesnt work in all scinarios.
5. Spectral subtraction may degrade speech quality if noise is not well estimated

Assumptions in my code:

1. We again took overlap size as half of frame size or window size.
2. We took hanning window for better results in stft.
3. The noise in the input signal is assumed to be stationary
4. The thresholding method assumes that spectral components above a certain noise threshold are primarily dominated by speech signal, and those below are dominated by noise