

Coding assignment

1. Record speech using your mobile “My registration number is”
2. Read the audio clip using matlab/octave.
 - a. What is the sampling frequency of the signal?
3. Apply Fourier representation
 - a. Which among the studied Fourier representations would you apply?
 - b. Why?
4. Apply ideal low pass filter up to 4kHz in the Fourier domain (retain non-zero coefficients up to 4kHz, and force the others to zero)
 - a. Take inverse Fourier representation of the filter output
 - b. Compare with the original signal by plotting the two signals
 - c. Save the reconstructed signal as an audio file.
 - d. What is the impulse response of the low pass filter?
5. Apply high pass filter beyond 4kHz in the Fourier domain (retain non-zero coefficients beyond 4kHz, and force the others to zero)
 - a. Take inverse Fourier representation of the filter output
 - b. Compare with the original signal by plotting the two signals
 - c. Save the reconstructed signal as an audio file.
 - d. What is the impulse response of the high pass filter?

NOTE: Please submit the soft copy of the report/findings and the audio clips to my email id:

vinod.reddy@iiitb.ac.in