Digital Signal Processing Lab (EE 521)

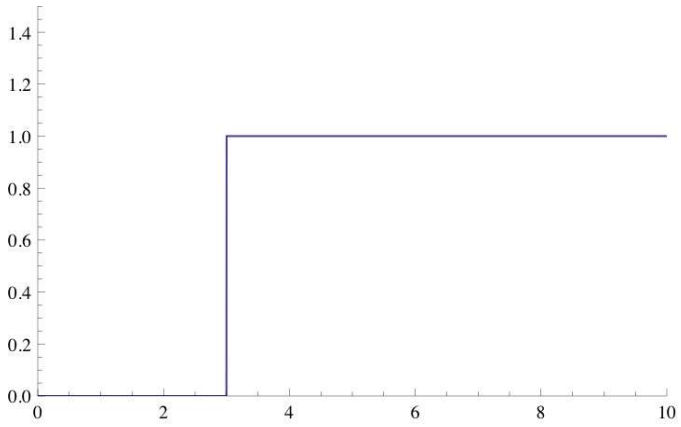
Lab -6 Report

Task:

1. Implementation of High Pass Filter (HPF) for the given cut off frequency

High Pass Filter :

An electronic filter which passes the frequencies higher than certain cut off frequencies and blocking the frequencies that are lower than the cut off frequency.

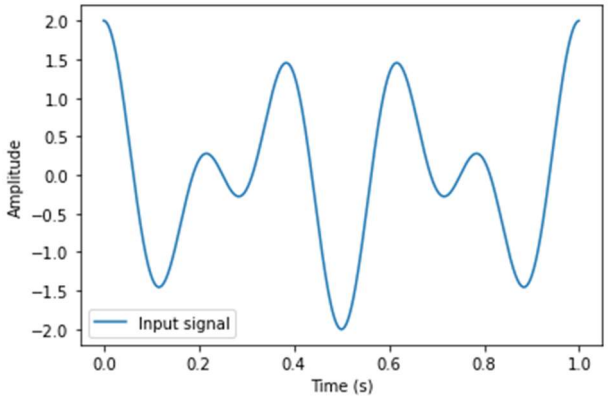


Ideal High Pass Filter

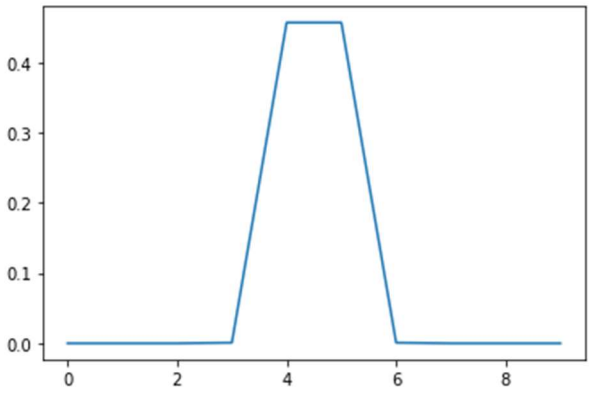
The cutoff frequency of HPF is given by :

$$f_c = \frac{1}{2\pi\tau} = \frac{1}{2\pi R_1 C},$$

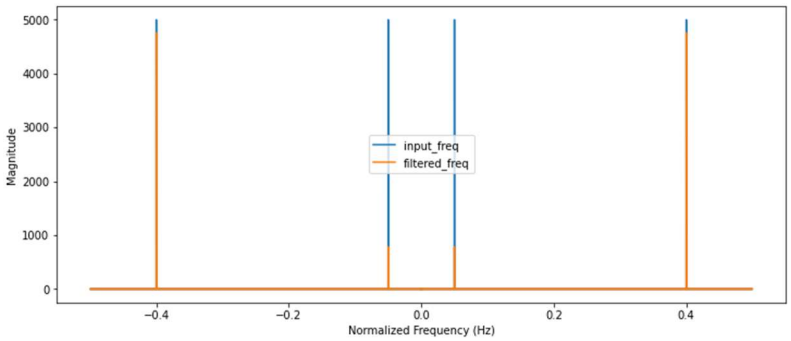
Input Signal :



Window function :



Output signal spectrum :



Applications of HPF :

1.Used in speakers for amplification
2. Used in image processing in sharpening applications.
3. To prevent amplification of DC current.

Code :
https://colab.research.google.com/drive/1r5ZvXSXsxvvA4HvN31Qo4Rp0RCWIgEZr#scrollTo=2wnrP6hvqq-9