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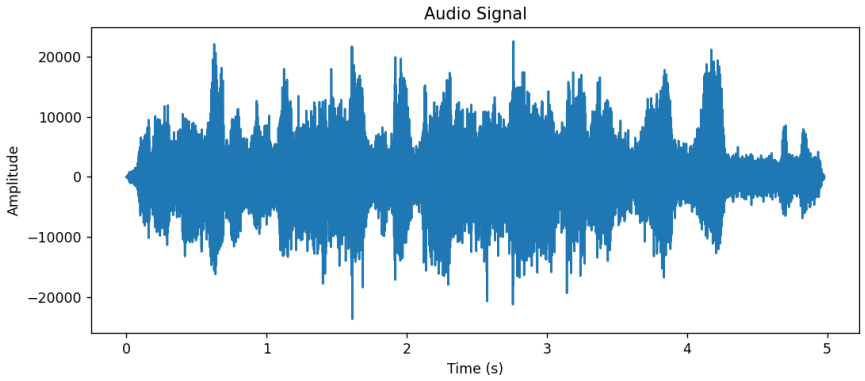
Experiment 1 (Application)

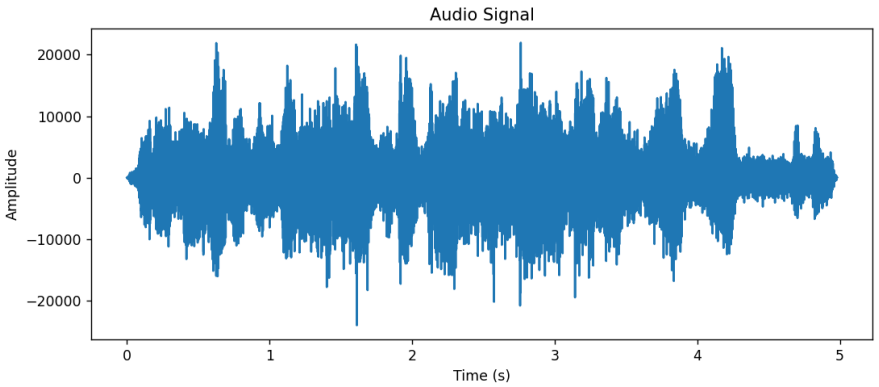
PROBLEM DEFINITION:	Filter the Audio Signal captured in the presence of noise and improve the quality of sound.
ALGORITHM:	1. Record Audio Signal in the presence of noise ==> x[n]. 2. Play the recorded signal x[n] and observe the quality of sound. 3. Design FIR Low Pass Filter using MATLAB filter design Tool. Take Fpass = 4000Hz, Fstop = 6000Hz, Fs = 44000Hz. 4. Filter the audio signal x[n] i.e., perform Linear Convolution of x[n] and h[n] ==> y[n]. 5. Play the filtered signal and observe the quality of sound.

EXPERIMENTATION AND RESULT ANALYSIS:

RESULT:



Original Audio



Filtered Audio

```
Sampling rate:  48000
Audio duration:  4.98 seconds
No. of Samples:  239040
Playing the original audio...
Playing the original signal with noise...
Playing the filtered signal...
```