BLG 354E Signals and Systems for Computer Engineering Homework-3 Report

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In the code we first describe file name, output name and Cut off frequency value as seen below.

```
fname = 'WinnerTakesAll.wav'
outname = 'output.wav'

cutOffFrequency = 2000.0
```

In this code moving average is used for filtering purposes.

```
def running_mean(x, windowSize):
    cumsum = np.cumsum(np.insert(x, 0, 0))
    return (cumsum[windowSize:] - cumsum[:-windowSize]) / windowSize
```

In order to get HPF of the signal I calculated filtered signal as

filtered = original signal – low passed signal

```
    # LPF
    filtered = running_mean(channels[0], N).astype(channels.dtype)

    # HPF
    # signal = channels[0]
    # filtered = signal[:-8] - filtered
```

In this homework I got help from this link
https://stackoverflow.com/a/35963967