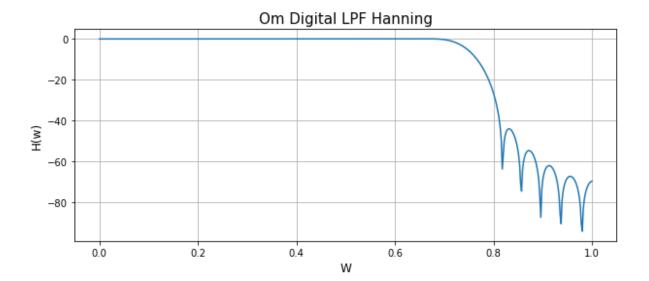
```
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Branch: EXTC
Year of Study: TE
Division: A
Batch: TA-3
Date: 31/08/2023
Time: 14:00
```

Problem Statement: Design a digital FIR LPF using Recntagular, Hanning, Hamming and Blackman Window

```
# Importing in-built libraries of python
In [1]:
        import numpy as np
        import matplotlib.pyplot as plt
        import scipy.signal as signal
In [4]: | # Design of FIR LPF using Hanning Window
        N = 51 \# Type - I
        b = signal.firwin(N, cutoff = 0.75, window = 'hann', pass_zero = True)
        print(np.round(b, decimals = 2))
        [ 0. -0.
                    -0.
                          0. -0.
                                           0. -0.
                                                       0. -0.
                                                                 -0.01 0.01
                                      0.
        -0.01 0. 0.01 -0.02 0.02 -0. -0.03 0.05 -0.04 0. 0.07 -0.16
         0.22 0.75 0.22 -0.16 0.07 0. -0.04 0.05 -0.03 -0.
                                                                 0.02 -0.02
         0.01 0. -0.01 0.01 -0.01 -0.
                                          0. -0. 0. 0.
                                                                 -0.
        -0.
              -0.
                    0. ]
In [5]: W, h = signal.freqz(b,a)
        h_db = 20 * np.log10(abs(h))
        plt.figure (figsize = (10, 4))
        plt.plot (W/max(W), h_db)
        plt.grid()
        plt.title ('Om Digital LPF Hanning', fontsize = 15)
        plt.xlabel ('W', fontsize = 12)
        plt.ylabel ('H(w)', fontsize = 12)
       Text(0, 0.5, 'H(w)')
Out[51:
```

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