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 Batch: TA-3
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Problem Statement: Design a digital FIR LPF using Rectangular, Hanning, Hamming and Blackman Window

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In [1]: # Importing in-built libraries of python
import numpy as np
import matplotlib.pyplot as plt
import scipy.signal as signal
  
```

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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)
a = 1
print(np.round(b, decimals = 2))

[ 0.   -0.   -0.   0.   -0.   0.   0.   -0.   0.   -0.   -0.01  0.01
 -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.   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)
  
```

```

Out[5]: Text(0, 0.5, 'H(w)')
  
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