
```

clc;
clear all;
close all;
wc=0.5*pi;
eps=0.001;
N = input('Enter the value of N=');
alpha = (N-1)/2;

n = 0:1:N-1;
hd = (sin(pi*(n-alpha+eps))-sin(wc*(n-alpha+eps)))/(pi*(n-alpha+eps));
wr = boxcar(N);
wh=hamming(N);
wn=hanning(N);
wt=bartlett(N);
hn = hd.*wr';
hn1=hd.*wh';
hn2=hd.*wn';
hn3=hd.*wt';
w = 0:0.01:pi;
h = freqz(hn,1,w);
h1 = freqz(hn1,1,w);
h2 = freqz(hn2,1,w);
h3=freqz(hn3,1,w);
subplot(4,2,1);
plot(w/pi,10*log10(abs(h)));
title('low pass filter using rectangular window');
xlabel('Normalized frequency');
ylabel('Magnitude in dB');
subplot(4,2,2);
stem(wr);
title('Rectangular window Sequence');
xlabel('No. of Samples');
ylabel('Amplitude');
subplot(4,2,3);
plot(w/pi,10*log10(abs(h1)));
title('low pass filter using hamming window');
xlabel('Normalized frequency');
ylabel('Magnitude in dB');
subplot(4,2,4);
stem(wh);
title('Hamming window Sequence');
xlabel('No. of Samples');
ylabel('Amplitude');
subplot(4,2,5);
plot(w/pi,10*log10(abs(h2)));
title('low pass filter using hanning window');
xlabel('Normalized frequency');
ylabel('Magnitude in dB');
subplot(4,2,6);
stem(wn);
title('Hanning window Sequence');
xlabel('No. of Samples');

```

```
Error using input
Cannot call INPUT from EVALC.

Error in q2 (line 6)
N = input('Enter the value of N=');
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```