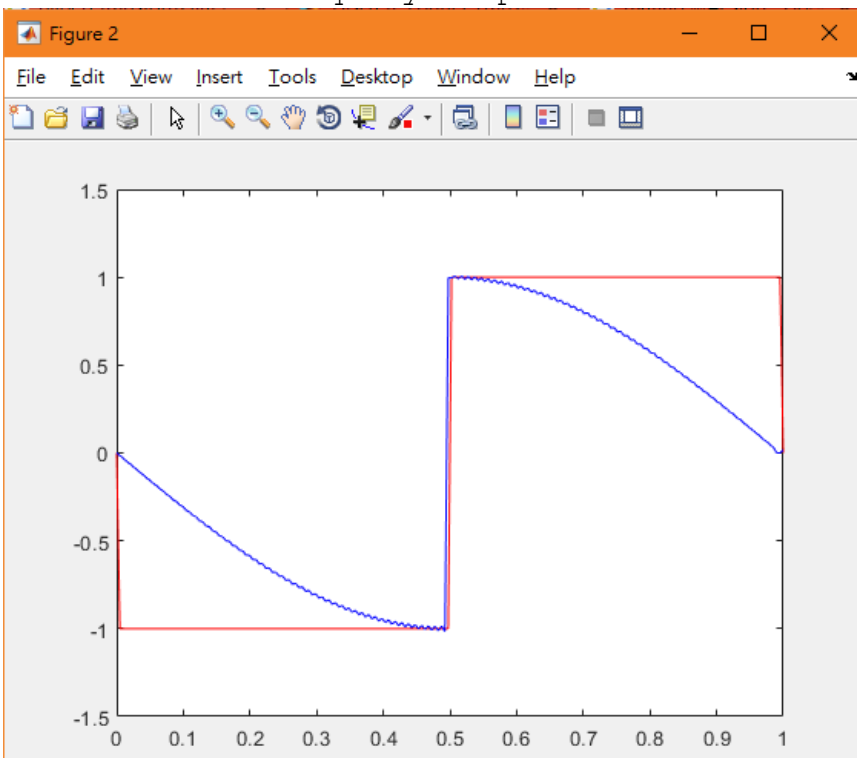
ADSP hw2 林東農 r06921034

Matlab code

```
k=100;
N = 2*k+1;
F = [0:1/N:1];
H = zeros(size(F));
H((0 < F) & (F < 0.5)) = -1j;
H((0.5 < F) & (F < 1)) = 1j;

h = ifft(H);
x = -1:2/N:1;
[a b] = size(h);
h2 = [h((b/2+1):b) h(1:b/2)];
%plot(x,h2,'r');
stem(x,h2);
%hold on;
%plot(x,h,'b');
figure;
plot(F,imag(H),'r');
hold on;
E = exp(-1j*2*pi*(linspace(-b/2,b/2,b))'*F);
size(E)
R = h2*E;
plot(F,R,'b');
```

freqency response




Impulse response

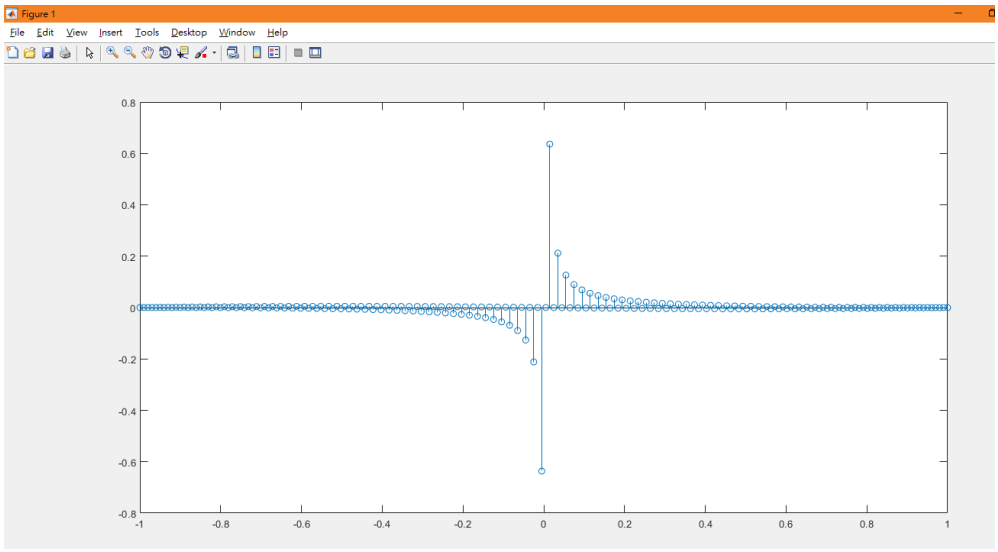


Figure 1
File Edit View Insert Tools Desktop Window Help
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-0.8
-0.6
-0.4
-0.2
0
0.2
0.4
0.6
0.8
1