Causal-Non Causal & Power & Energy Signal For Continuous Time

A Special Assignment Of Signal & System To Submitted In The Partial Fulfilment Of

Bachelor Of Engineering Present By

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Matlab Code:

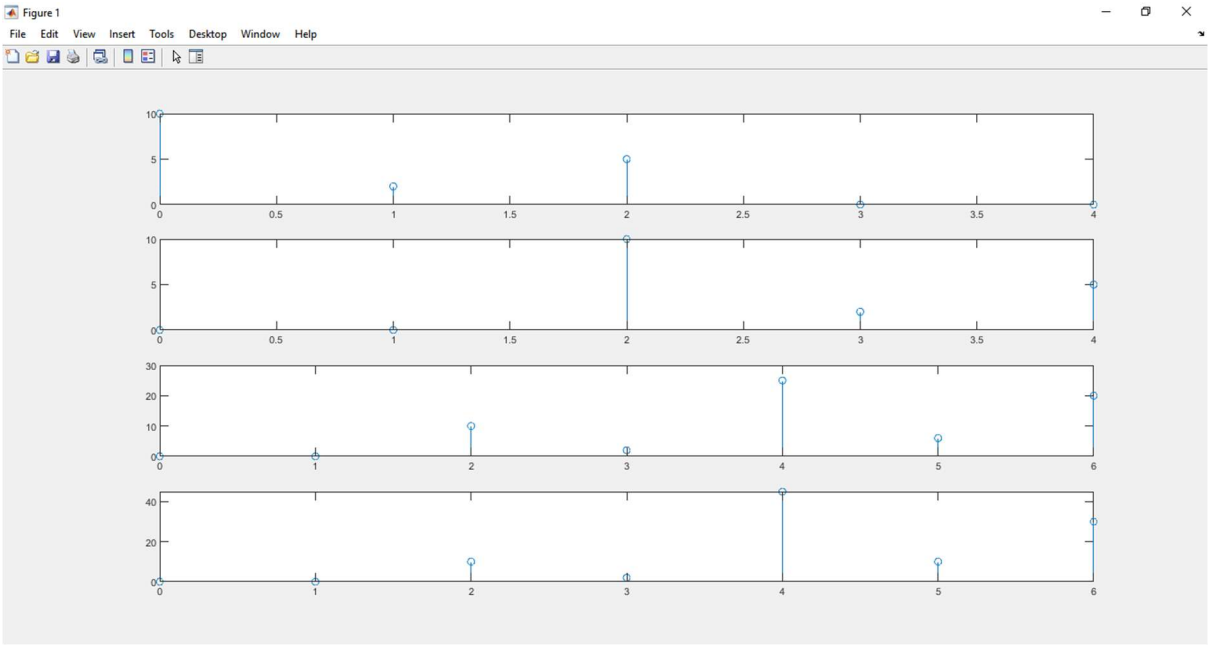
```
_clc;

close all;
clear all ;
while true

    a=input('Enter "C" for causal and "E" for energy power and "Q"
for quit','s');

    if a=='C'

                k =2;
                n= 0:2+k;
                x=[10 2 5 zeros(1,k)];
                subplot(4,1,1)
                stem(n,x);
                xdelay=[zeros(1,k) x(1:3)];
                subplot(4,1,2);
                stem(n,xdelay);
                y=x+n.*xdelay;
                nk=(0:length(n)-1+k)-k;
                ydelayed=[xdelay zeros(1,k)]+nk.*[zeros(1,k) xdelay]
                subplot(4,1,3);
                stem(0:length(ydelayed)-1,ydelayed)
                n1=(0:length(n)-1+k);
                ydin=[xdelay zeros(1,k)]+n1.*[zeros(1,k) xdelay]
                subplot(4,1,4)
                stem(0:length(ydin)-1,ydin)

    elseif a == 'E'
                        syms m;
                         A = input('Enter Amplitude =');
                         f=input('Enter frequency =');
                         fs=input('Enter sampling frequency =');
                         fo=f/fs;
                         T=1/f;
                         C=input('Enter INITIAL TIME =');
                         D=input('Enter TIME GAP =');
                         E=input('Enter FINAL TIME =');
                         t=linspace(C,D,E);
                         w=2*pi*fo;
                         theta = input('Enter phase in radian = ');

                                 v = A* sin(w*t + theta);
                                  k = A* sin(w*m + theta);
                                  v2=k.^2;
                                 energy=int(v2,m,-inf,inf);
```

```
                                    disp(energy);
                                    if energy == inf
                                    disp(' The signal is not energy
signal');
                                    end
                                    power = limit((int(v2,m,-
m/2,m/2))/m,m,inf);
                                    disp(power);
                                    if power == inf
                                    disp(' The signal is not power
signal');
                                    end

    elseif a== 'Q'
        break
    else
        disp('Wrong choice');
        break

    end
end
```

Input For Causal & Non Causal:

```
Enter "C" for causal and "E" for energy power and "Q" for quitC

ydelayed =

     0     0    10     2    25     6    20


ydin =

     0     0    10     2    45    10    30

Enter "C" for causal and "E" for energy power and "Q" for quit
```

Output For Causal & Non Causal:



Input/Output For Energy Signal For Continuous Time:

```
Enter "C" for causal and "E" for energy power and "Q" for quitC

ydelayed =

     0     0    10     2    25     6    20


ydin =

     0     0    10     2    45    10    30

Enter "C" for causal and "E" for energy power and "Q" for quitE
Enter Amplitude =10
Enter frequency =50
Enter sampling frequency =1000
Enter INITIAL TIME =0
Enter TIME GAP =pi
Enter FINAL TIME =10
Enter phase in radian = 0
Inf

 The signal is not energy signal
50

fx Enter "C" for causal and "E" for energy power and "Q" for quit
```