# Displaying Continuous-Time and Discrete-Time Signals in Matlab

**>>Start Matlab on your workstation and type the following sequence of commands**

n = 0:2:60;

y = sin(n/6);

subplot(3,1,1)

stem(n,y)

This plot shows the discrete-time signal formed by computing the values of the function sin(t/6) at points which are uniformly spaced at intervals of size 2.

**>>Use the following sequence of commands to generate two continuous-time plots of the signal sin(t/6).**

n1 = 0:2:60;

z = sin(n1/6);

subplot(3,1,2)

plot(n1,z)

n2 = 0:10:60;

w = sin(n2/6);

subplot(3,1,3)

plot(n2,w)

Generation of basic signals using MATLAB

Objective: To generate basic signals like unit impulse, unit step, unit ramp signal and Exponential signals using MATlab.

**(a). Program for the generation of UNIT impulse signal**

clc;

close all;

clear all;

t=-2:1:2;

y=[zeros(1,2),ones(1,1),zeros(1,2)]

figure(1)

subplot(2,2,1);

stem(t,y);

title('unit impulse');

**(b). Program for the generation of UNIT step signal**

clc;  close all;  clear all;

n=input('enter the n value');

t=0:1:n-1;

y=ones(1,n);

figure(2)

subplot(2,2,2);

stem(t,y);

title('unit step');

**(c).Program for the generation of unit RAMP   signal**

clc;  close all;  clear all;

n=input('enter the n value');

t=0:n;

y=ones(1,n);

figure(3)

subplot(2,2,3);

stem(t,t);

title('unit ramp');

**(d).Program for the generation of Exponential  signal**

clc;  close all;  clear all;

n=input('the length of i/p sequency');

t=0:n

a=input('enter the a value');

y=exp(a\*t); figure(4)

subplot(2,2,4);

stem(t,y);

xlabel('x-axis');   ylabel('y-axis'); title('unit exponential');

**(e).  Program for Continuous time signal**

clc;

close all;

clear all;

t=0:0.01:pi;

y= sin(2\*pi\*t);

%subplot(4,1,1);

plot(t,y);

ylabel('amp...');xlabel('(a)n...');title('sin signal')

**(f). Program for Discrete time cosine signal :**

t=0:.03:pi/3;

y= cos(2\*pi\*t);

subplot(4,1,2);

stem(t,y);

xlabel('a(n)');ylabel('amplitude');title('cosinusoidal');

**//////////////////**

**Lab Questions:**

1. Define impulse signal

2. Define ramp signal

3. Define unit step signal

4. Define exponential signal

5. Define sinusoidal signal

6. Define C.T.S

7. Define D.T.S.