Tribhuvan University

Institute of Engineering

Pulchowk Campus

Lab Report on :

Signals

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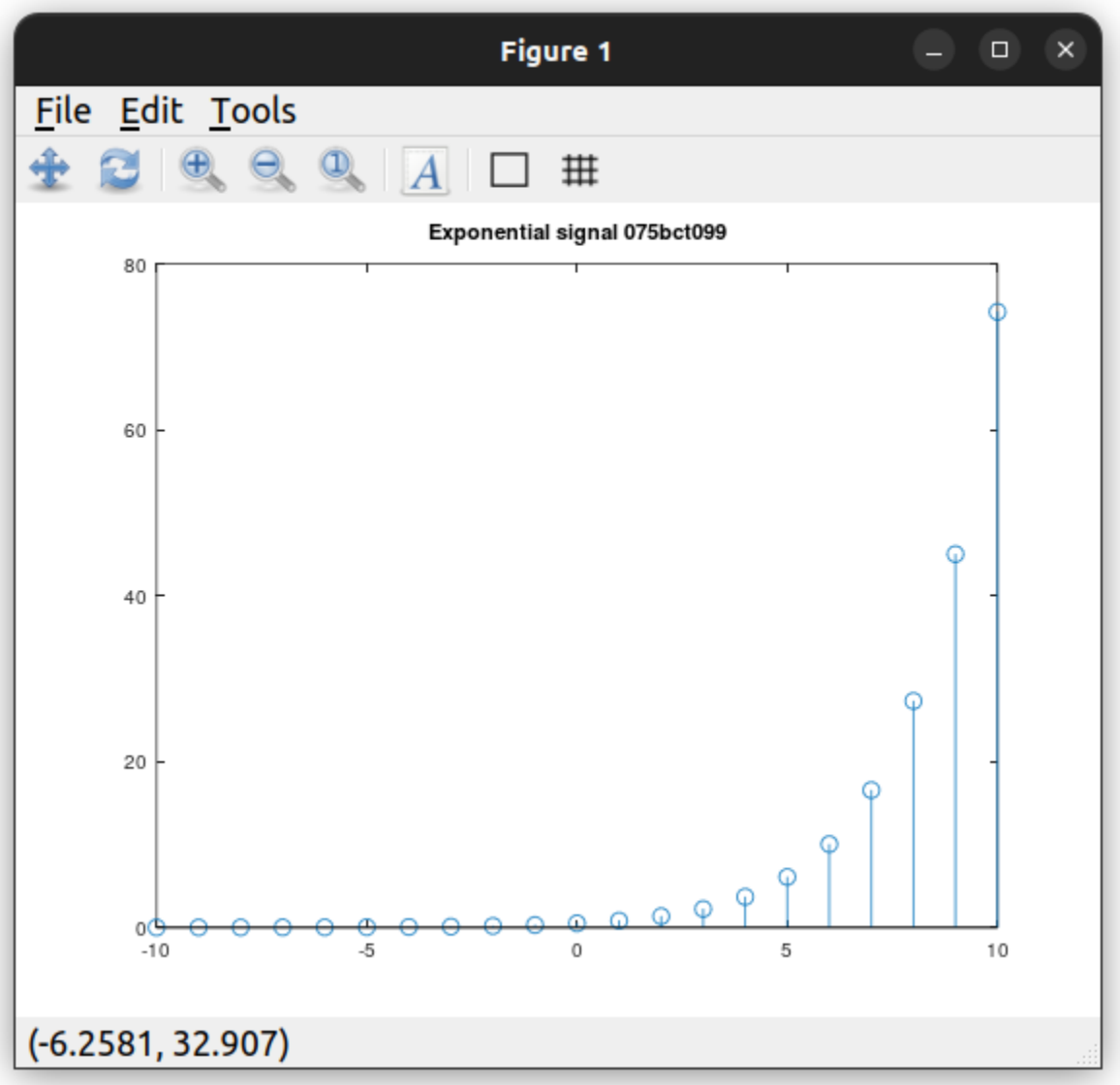
DSAP Lab1 Signals

a) Exponential signal

```
clc;

n= (-10:10);
c = input("c = ");
a = input("a =  ");
y = c*exp(a*n);
stem(n,y);
title('Exponential signal 075bct099')
```

Output:

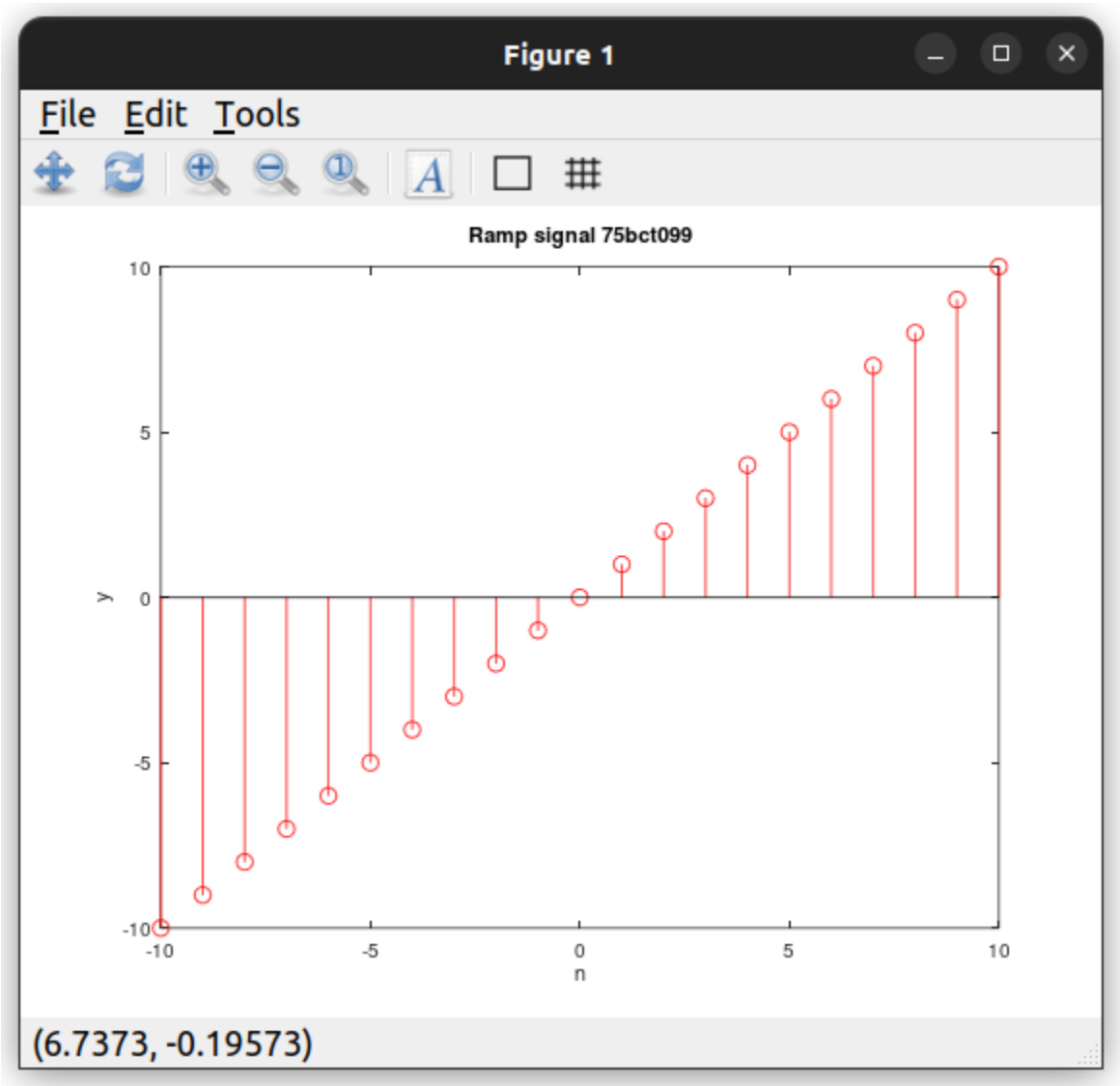


b) Ramp signal

Code:

```
clc;
n = -10:10;
y = n;
stem(n,y , 'r');
xlabel("n");
ylabel("y");
title("Ramp signal 75bct099");
```

Output:



c) Sinusoidal

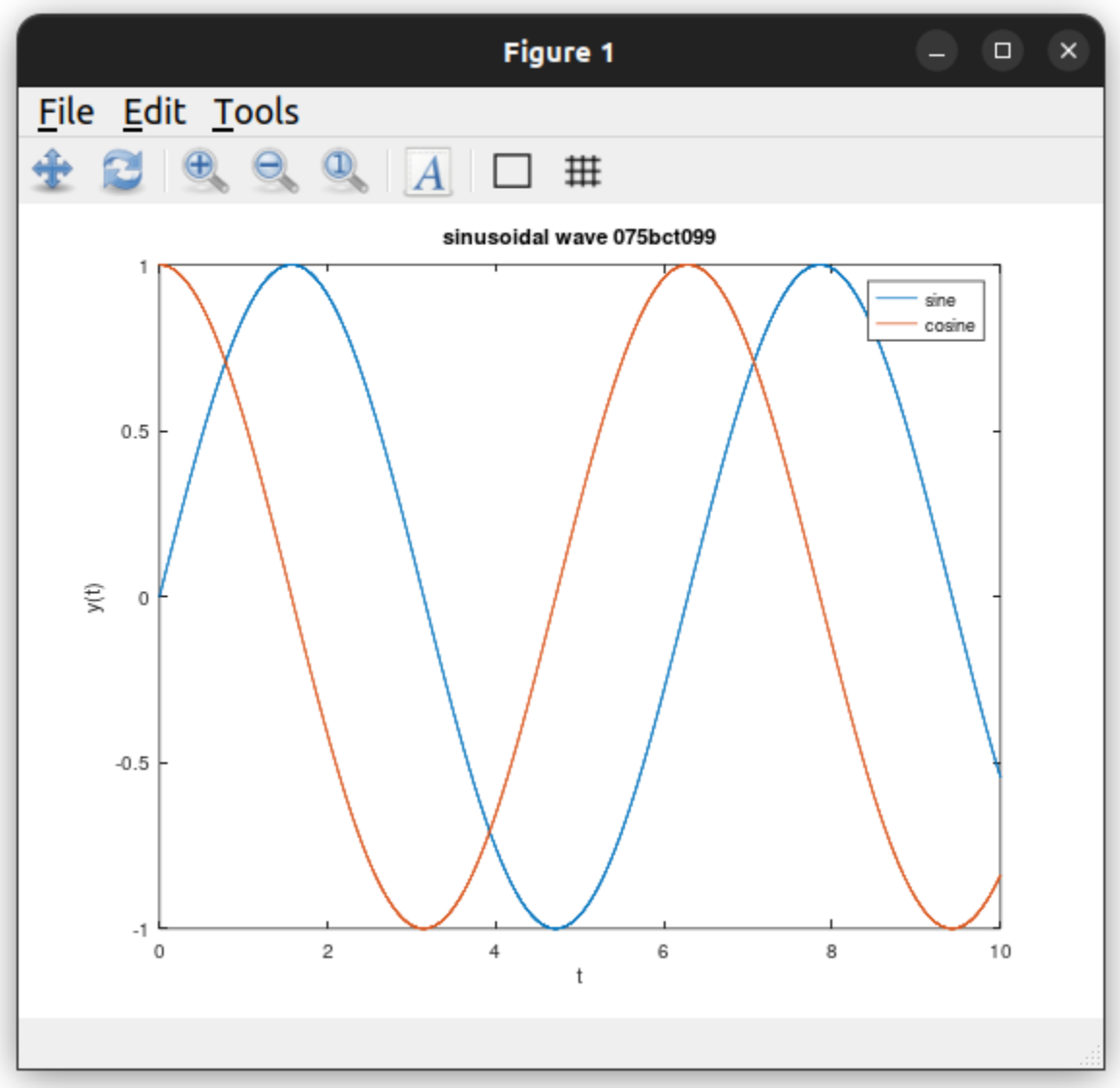
Code:

```
t = (0:0.001:10);
```

```
x = sin(t);
plot(t,x);
xlabel('t');
ylabel('x(t)');
title('sine wave');
hold on;

y =  cos(t);
plot(t,y);
xlabel("t");
ylabel("y(t)");
title("cosine wave");
legend("sine", "cosine");
hold off;
```

Output



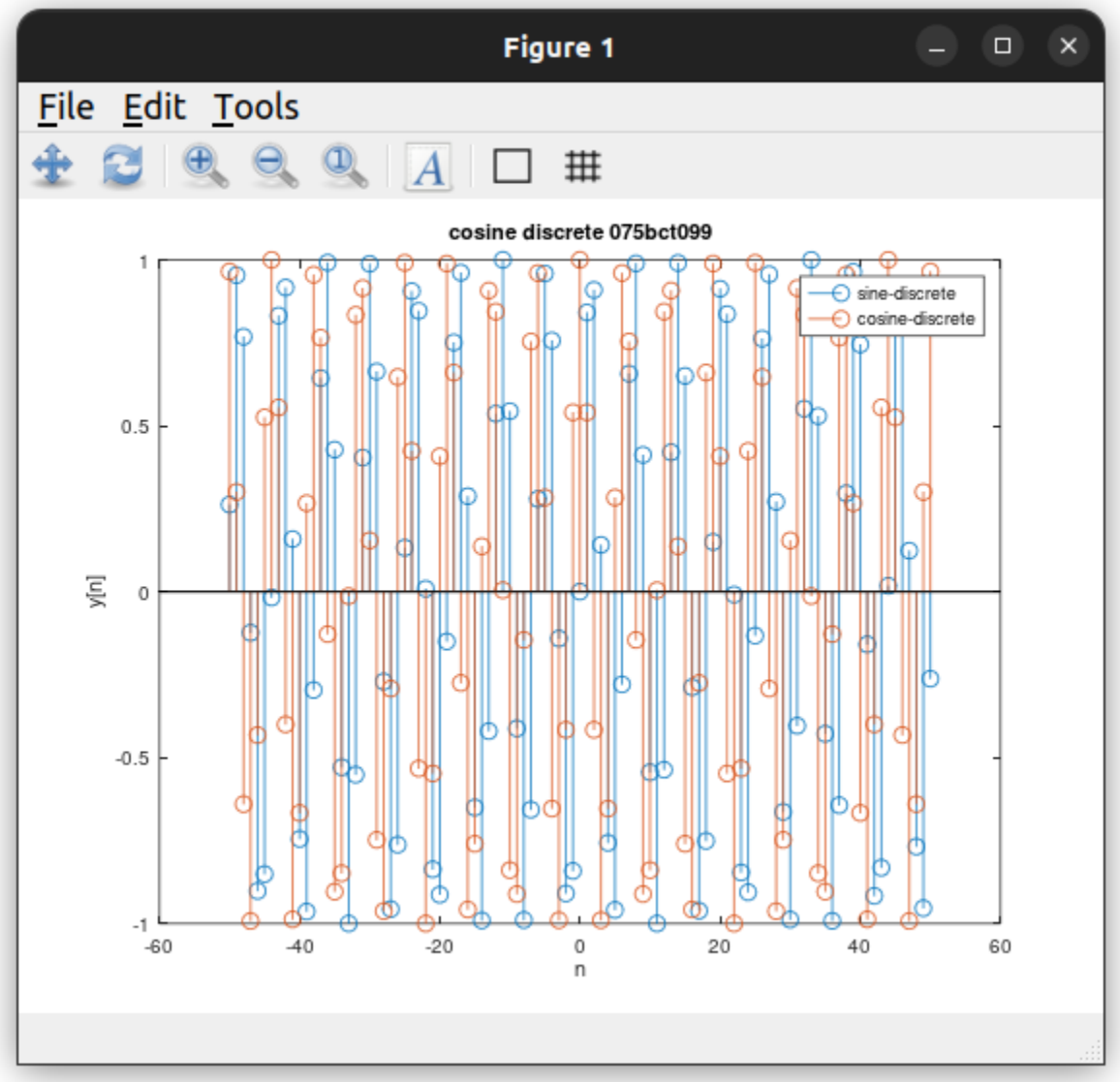
Discrete signals
Code:

```
clc;
t = (-50:50);
x = sin(t);
stem(t,x);
xlabel('n');
ylabel('x[n]');
title('sine discrete');
hold on;

y =  cos(t);
```

```
stem(t,y);
xlabel("n");
ylabel("y[n]");
title("cosine discrete");
legend("sine-discrete", "cosine-discrete");
hold off;
```

Output:



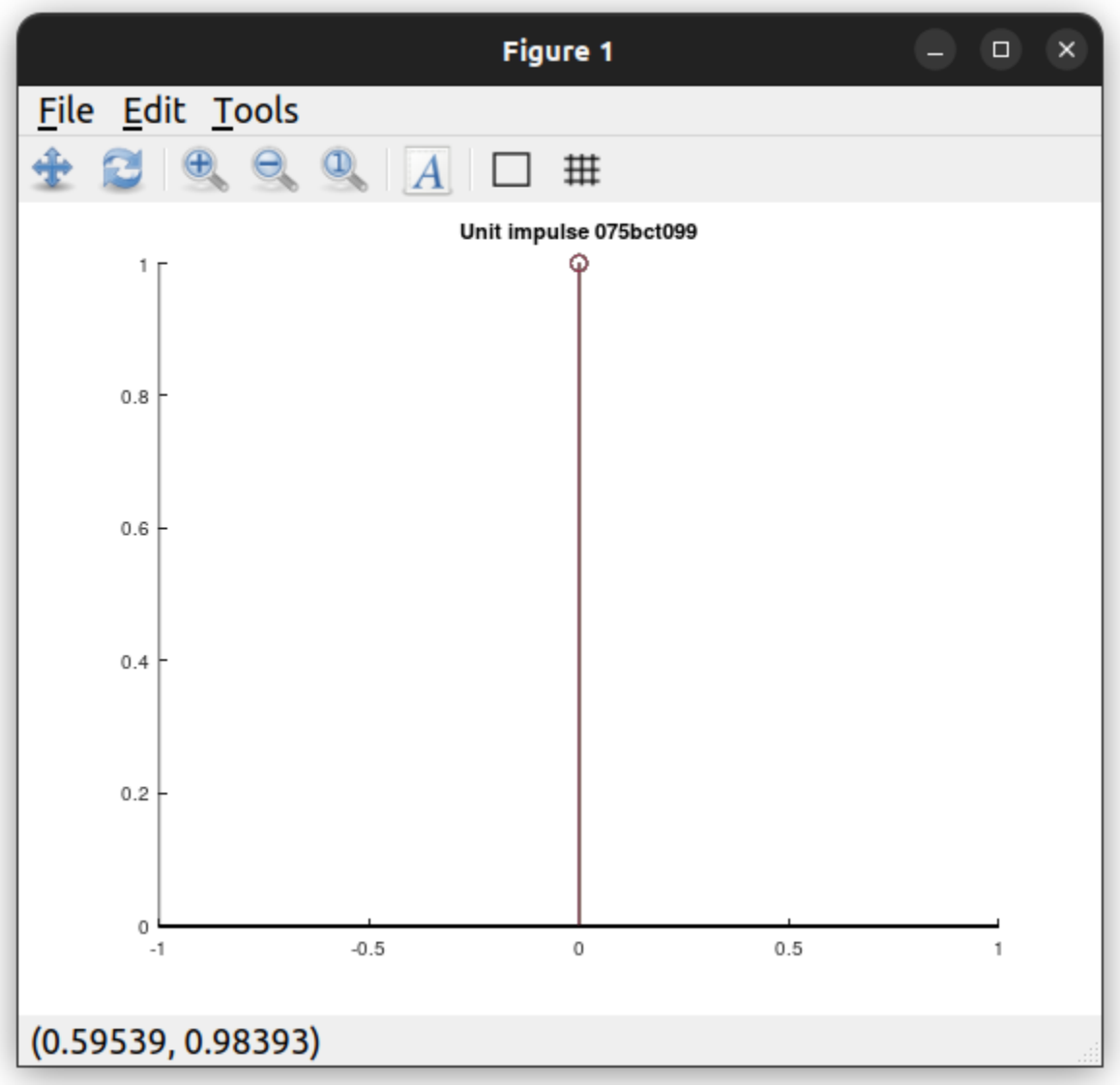
d) Unit Pulse

Code:

```
hold on ;
n = -10:10;
for(n = -10:1:10)
  if(n=0)
    stem(n,1);
```

```
  else
    stem(n,0);
  end
end
hold off;
```

Output:



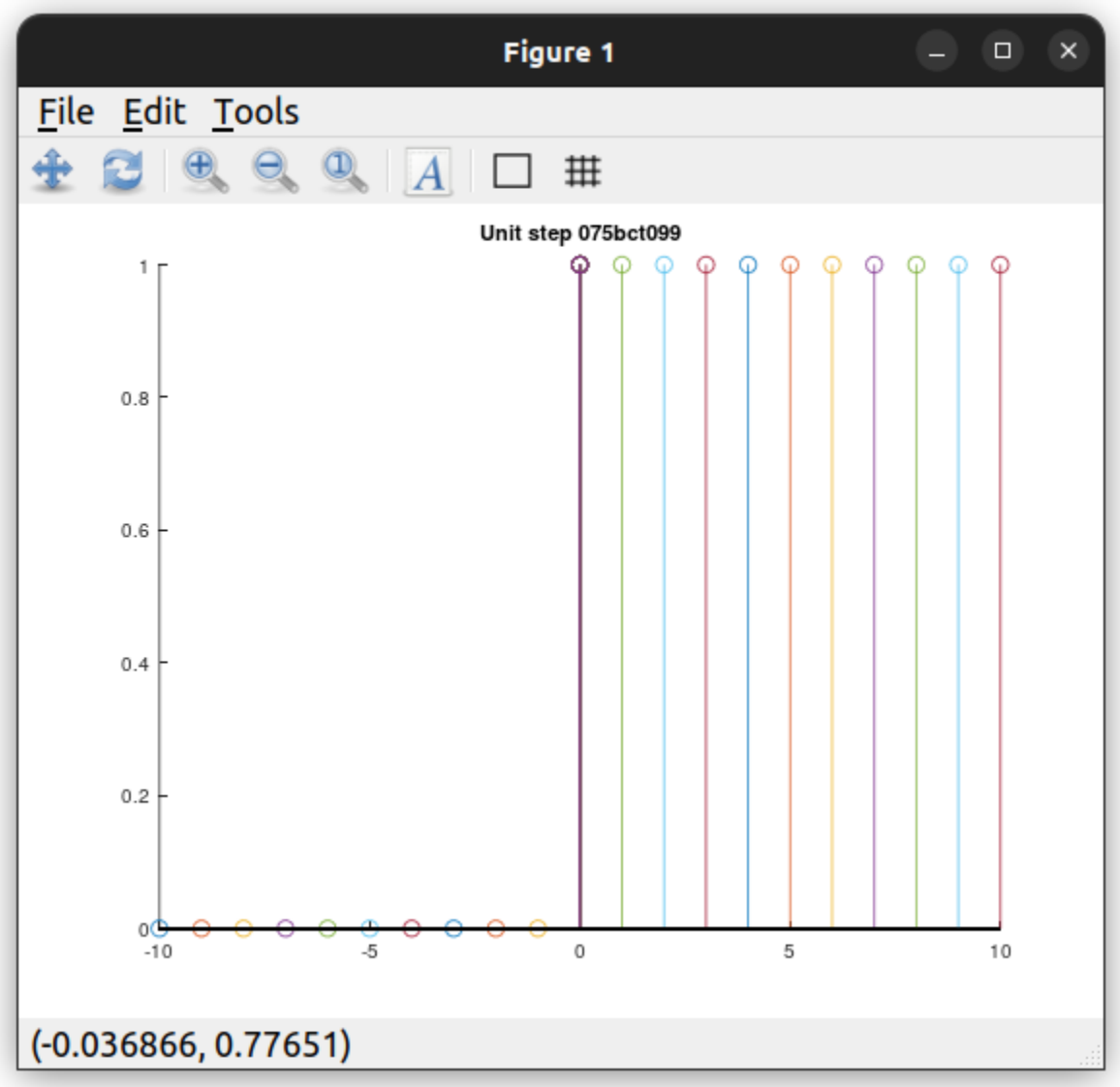
e) Unit Pulse

Code:

```
hold on ;
n = -10:10;
for(n = -10:1:10)
  if(n<0)
    stem(n,0);
  else
```

```
    stem(n,1);
  end
end
hold off;
```

Output:



Conclusion:

Therefore in this lab we observed various types of signals in Octave/Matlab which includes exponential , ramp, sine-cosine ,unit impulse(dirac-delta) and unit step function . The output of the respective functions were obtained and plotted in a graph .