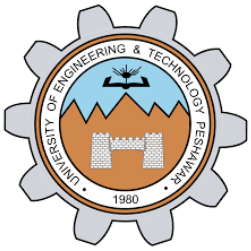
Digital Signal Processing Lab

Lab Report # 03



Submitted By: AWAIS SADDIQUI

Registration No: 21PWCSE1993

Section: "A"

"On my honor, as student at University of Engineering and Technology, I have neither given nor received unauthorized. assistance on this academic work"

Student Signature: _____

Submitted to:

Sir Yasir Saleem Afridi

Department of Computer Systems Engineering

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CSE 309L: Communication Systems

Demonstration of Concepts	**Poor (Does not meet expectation (1))** The student failed to demonstrate a clear understanding of the assignment concepts	**Fair (Meet Expectation (2-3))** The student demonstrated a clear understanding of some of the assignment concepts	**Good (Exceeds Expectation (4-5)** The student demonstrated a clear understanding of the assignment concepts	**Score** **30%**
Accuracy	The student mis-configured enough signal processing settings that the computer couldn't function properly.	The student configured enough signal processing settings that the computer partially functioned	The student configured the signal processing settings that the computer fully functioned	**30%**
Following Directions	The student clearly failed to follow the verbal and written instructions to successfully complete the lab	The student failed to follow the some of the verbal and written instructions to successfully complete all requirements of the lab	The student followed the verbal and written instructions to successfully complete requirements of the lab	**20%**
Time Utilization	The student failed to complete even part of the lab in the allotted amount of time	The student failed to complete the entire lab in the allotted amount of time	The student completed the lab in its entirety in the allotted amount of time	**20%**

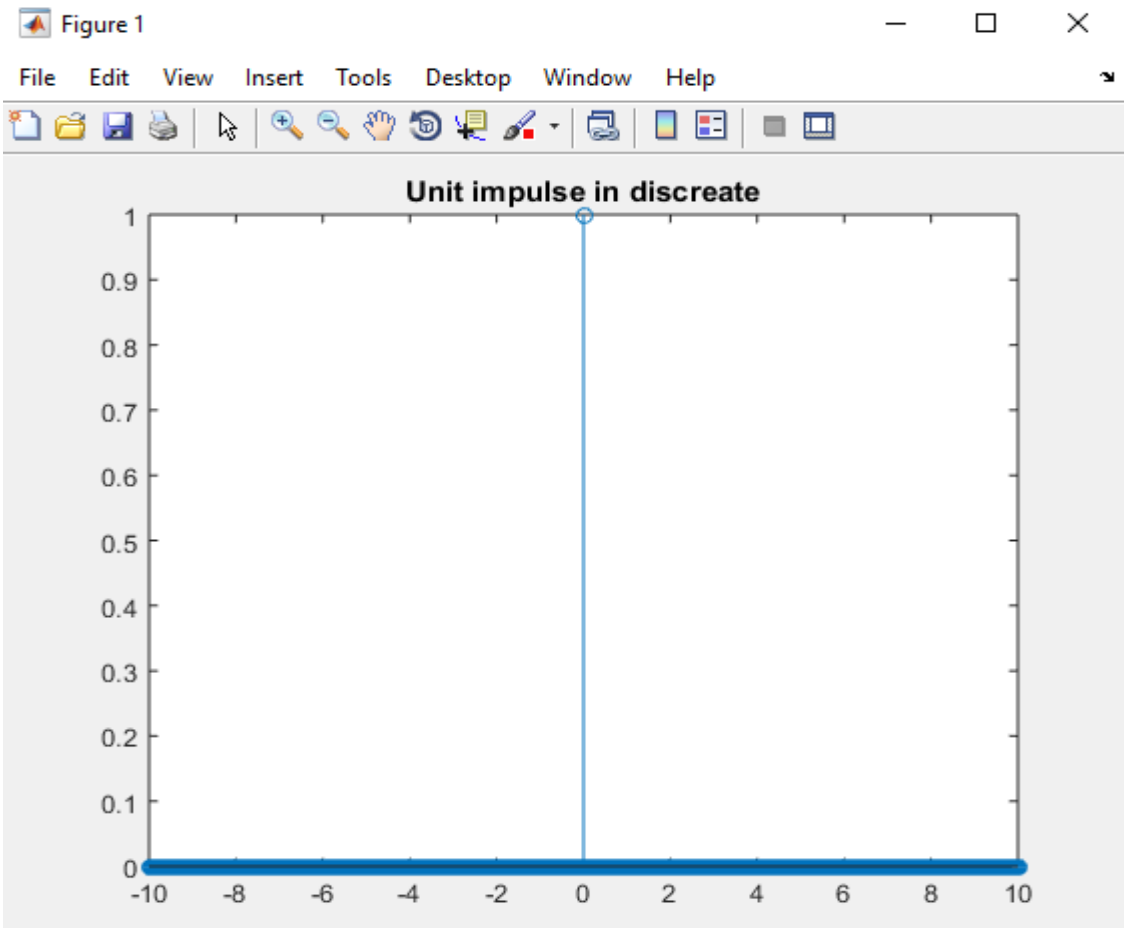
Study of Continuous-Time Signal using MATLAB

Unit Sample sequence:

```
clc
clear all

% Unit impulse signal
n = -10:0.01:10;
xx = (n==0);
plot(n,xx);
title('Unit Sample sequence in Conti...');
stem(n, xx)
title('Unit impulse in discreate');
```

Output:



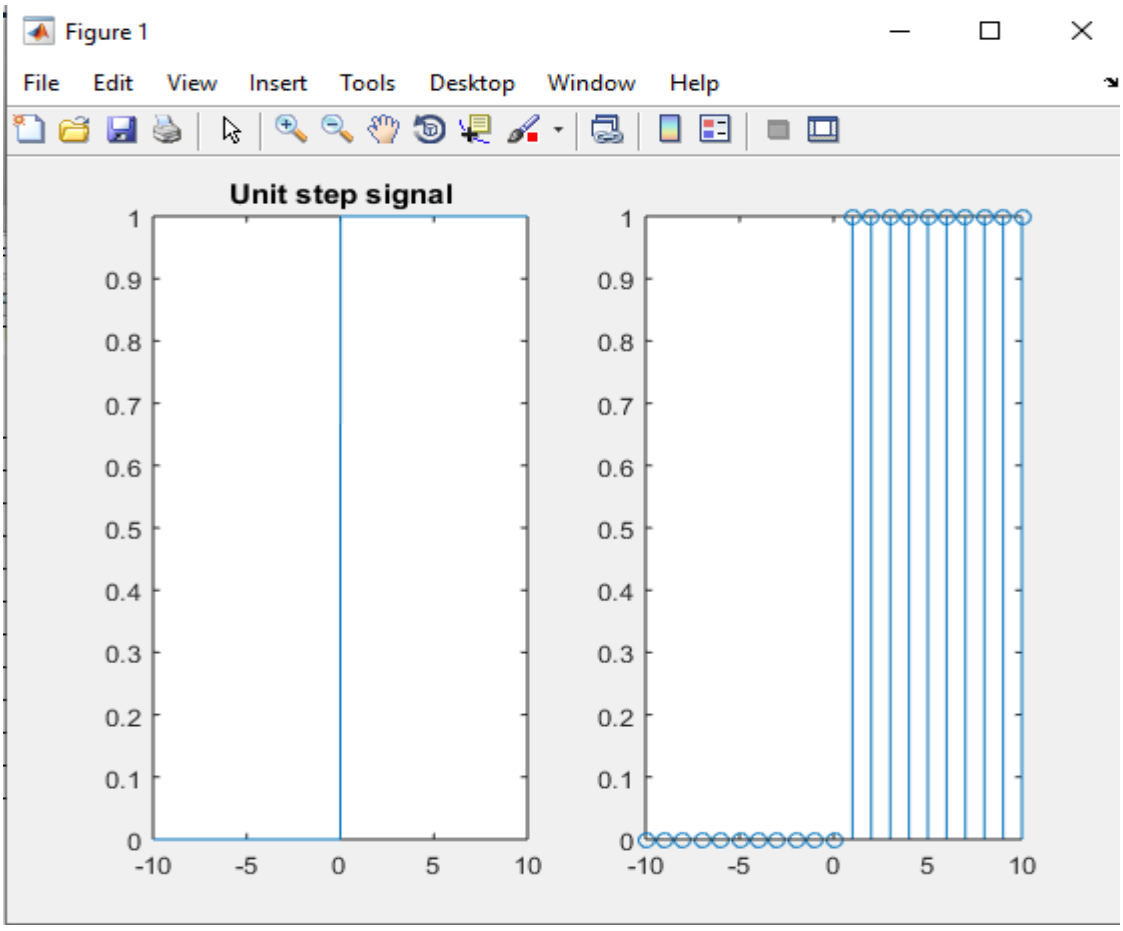
Unit Step Signal:

Editor - E:\Computer_System-Engineering\Fifth Semester\digital_signal_processing_Lab\Lab_03\Task2.m

Task2.m | Task3.m | Task4.m | Task5.m | Task6.m | Task7.m

```
1     %Task 02
2     %unit step signal
3 -   clc
4 -   clear all
5 -   t = -10:0.01:10;
6 -   xx = (t>0);
7 -   subplot(1,2,1)
8 -   plot(t,xx);
9 -   title('Unit step signal');
10 -  hold on
11 -  subplot(1,2,2);
12 -  n = -10:10;
13 -  yy = (n>0);
14 -  stem(n,yy);
15
```

Output:



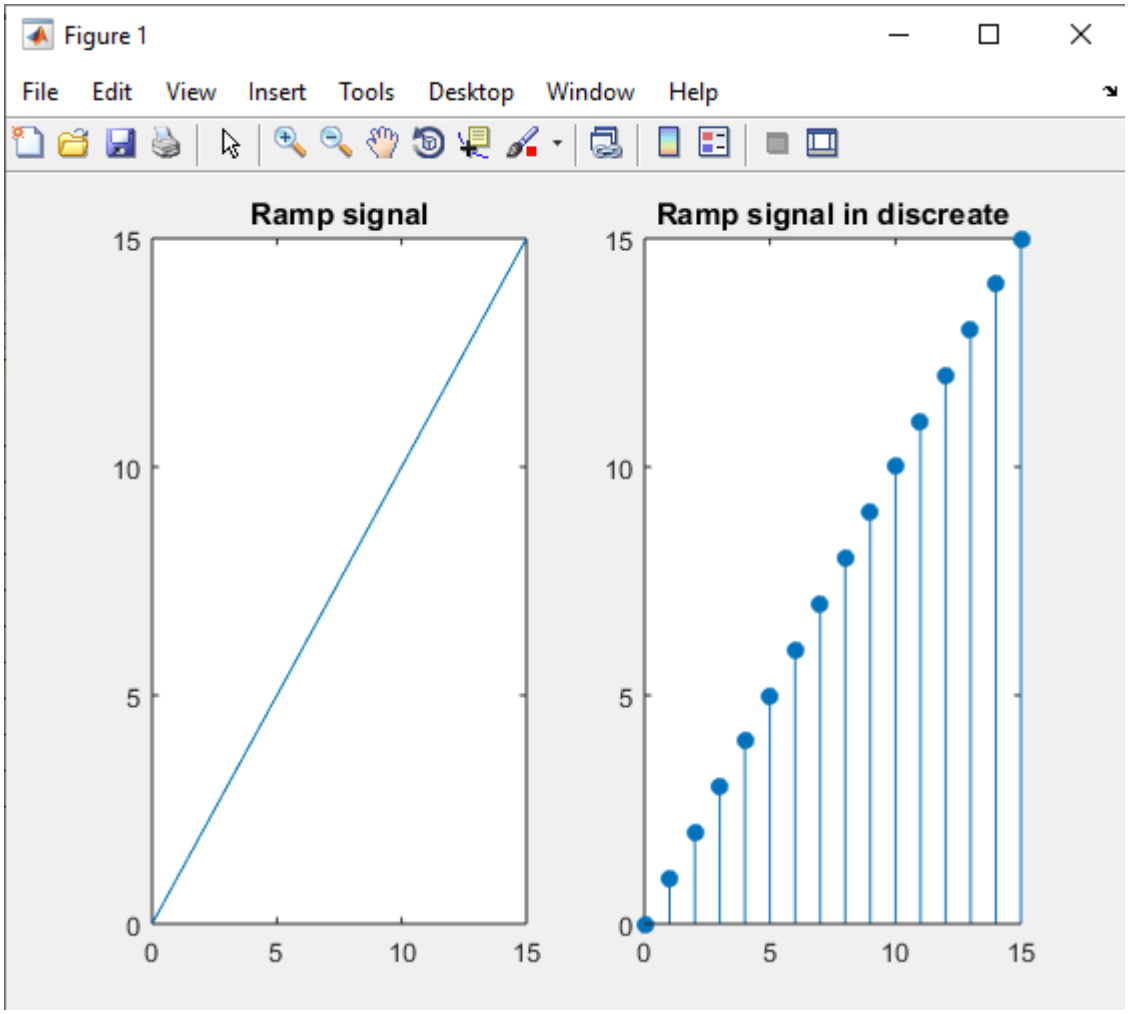
Ramp Signal:

Editor - E:\Computer_System-Engineering\Fifth Semester\digital_signal_processing_Lab\Lab_03\Task3.m

Task3.m | Task4.m | Task5.m | Task6.m | Task7.m

```
%Task 03
clc
clear all
n = 0:15;
xx = (n+abs(n))/2;
subplot(1,2,1)
plot(n, xx);
title('Ramp signal');
hold on
subplot(1,2,2)
stem(n,xx,'filled')
title('Ramp signal in discreate');
```

Output:

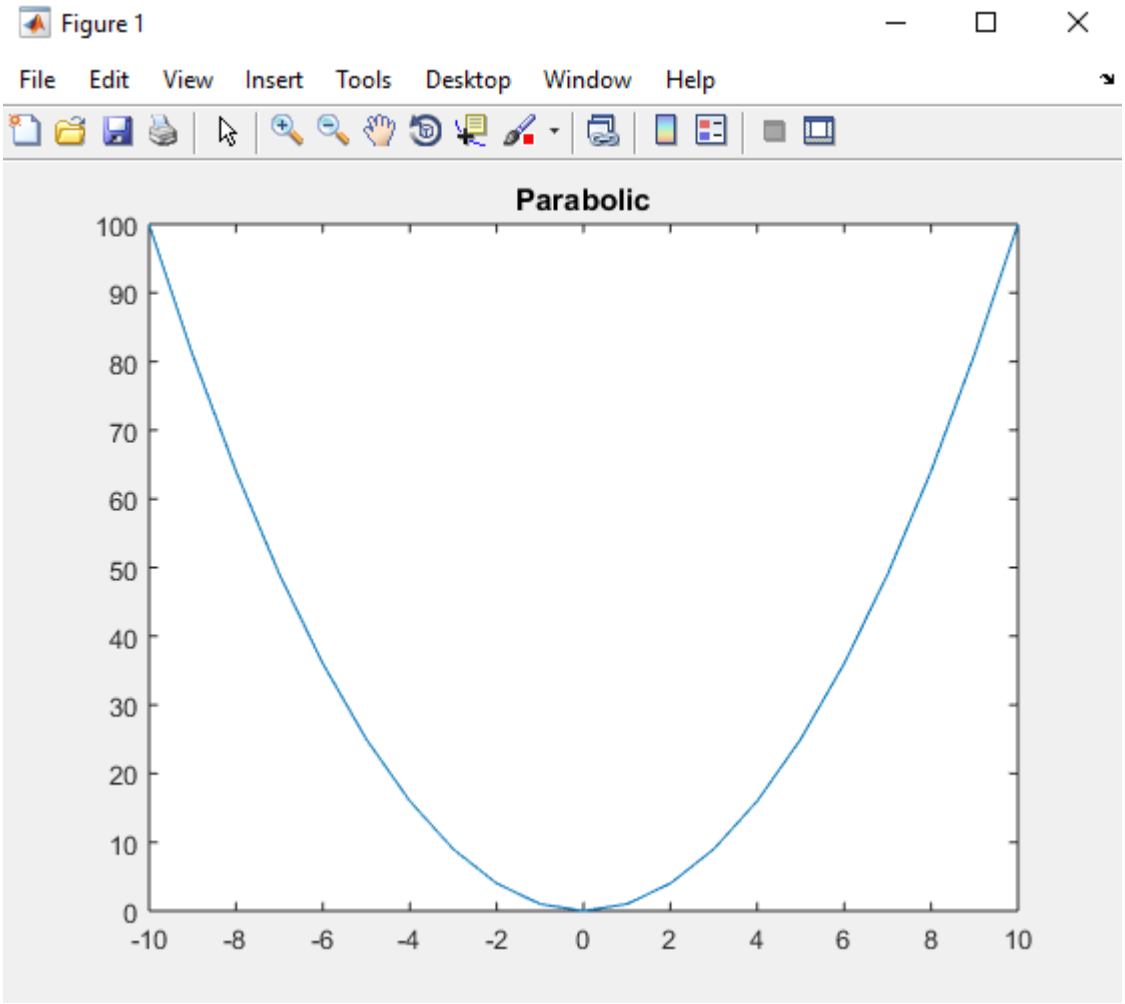


Parabolic Signal:

```
clc
clear all

t= -10:10;
Amp = 1;
parabolic = Amp.*t.^2;
plot(t, parabolic);
title('Parabolic')
```

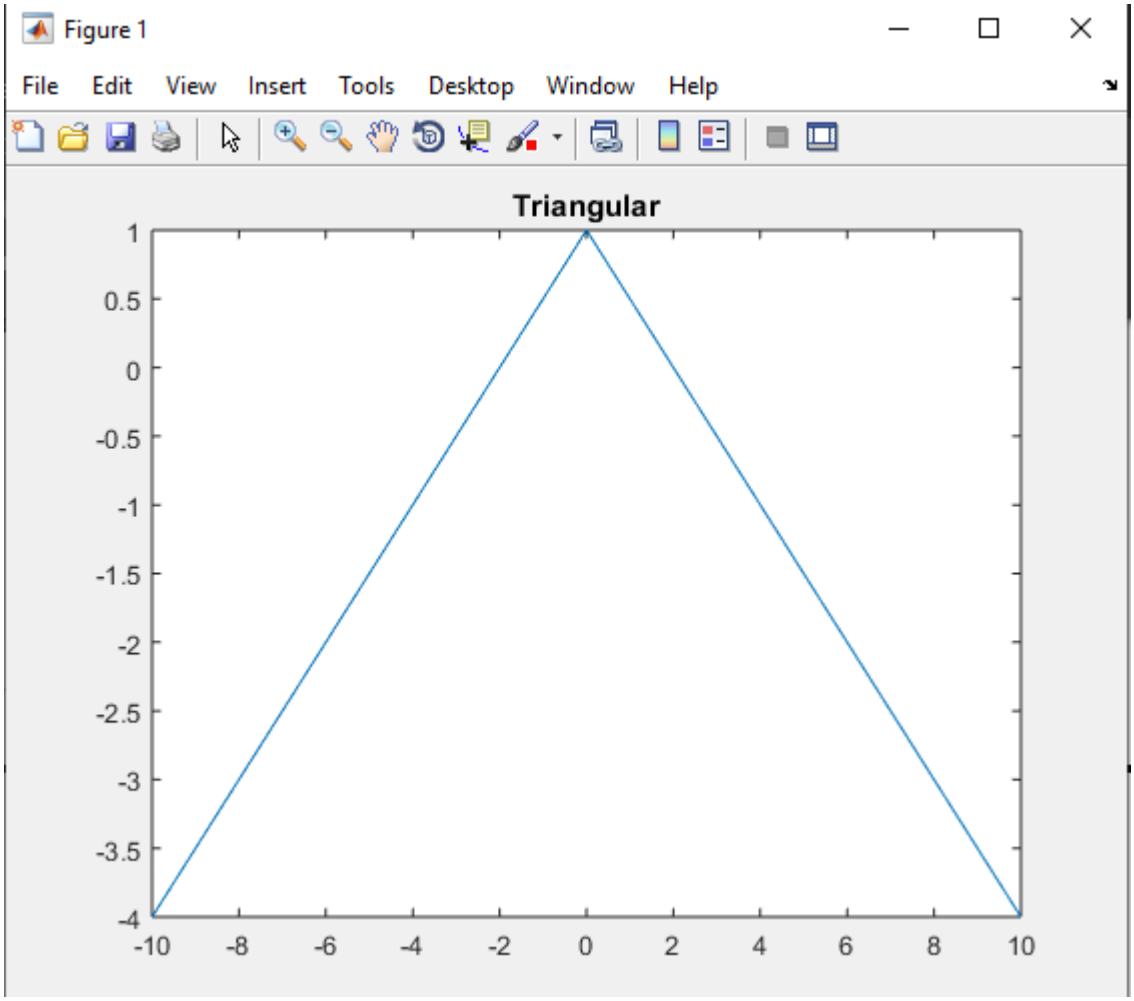
Output:



Triangular Signal:

```
clc
clear all
t = -10:10;
amp = 1
tt = amp-abs(t)/2;
plot(t,tt);
title('Triangular')
```

Output:

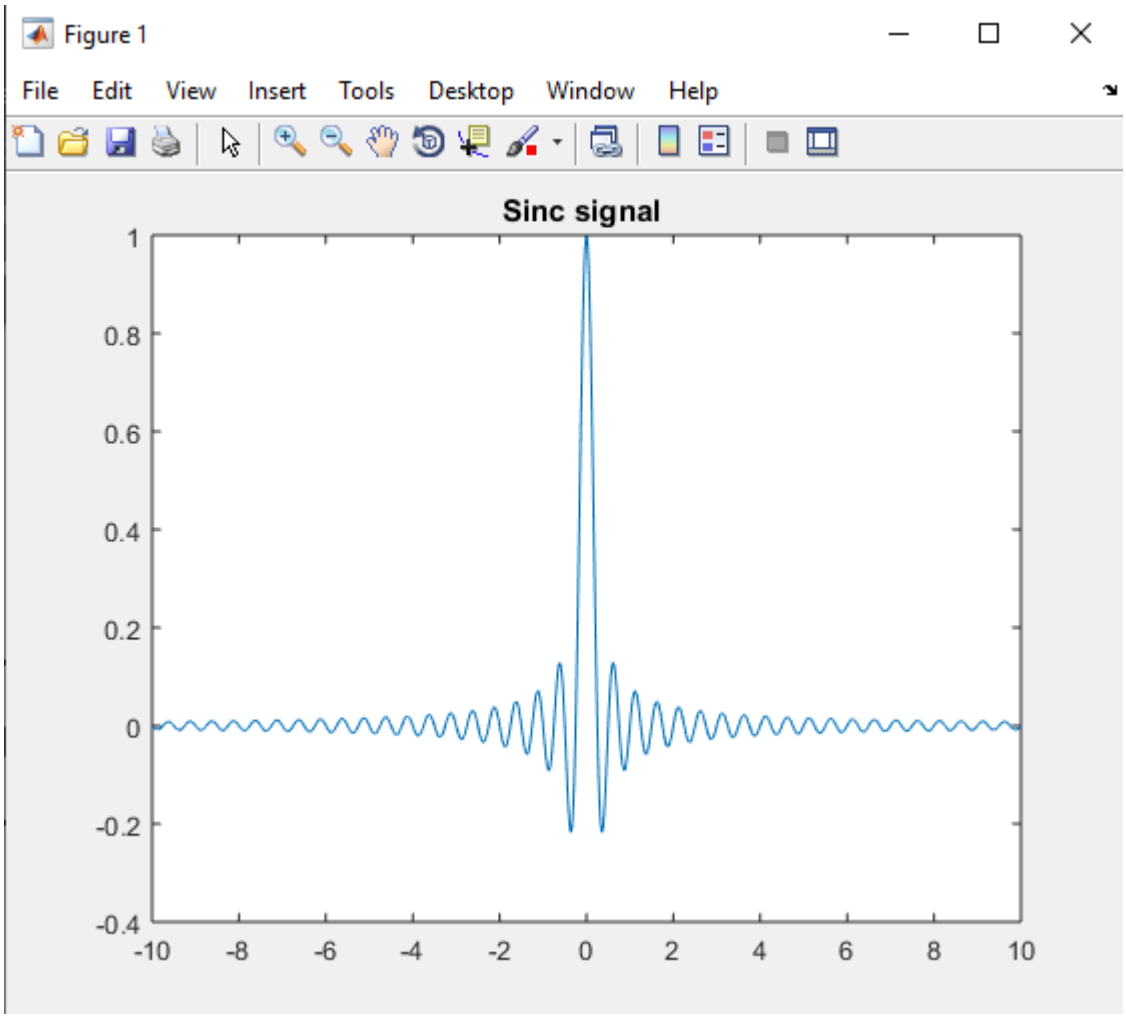


Sinc Signal:

```
clc
clear all

t= -10:0.01:10;
freq = 2;
sinc = sin(2*pi*freq*t)./(2*pi*freq*t);
plot(t,sinc)
title('Sinc signal ');
```

Output:



Sinusoidal Signal:

```
% Sinusoidal
clc
clear all
Amplitude = 4;
freq = 5;
t = -2:0.001:2;
signal = Amplitude * sin(2*pi*freq*t);
plot(t,signal);
title('Sinusoidal Signal');
```

Output: