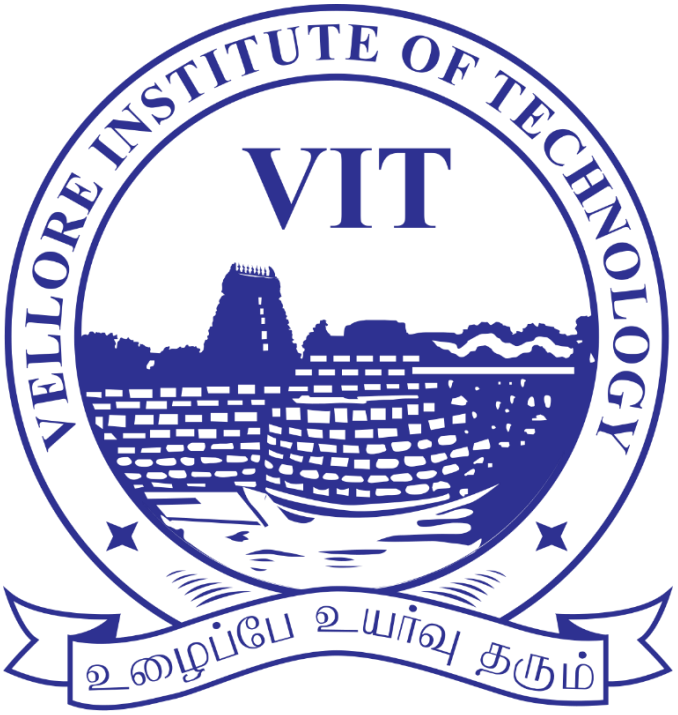
LAB TASK-5

DIGITAL SIGNAL PROCESSING



SPARSH ARYA
17BEC0656
L35+36

OBJECTIVE:

A causal LTI system is characterized by the following difference equation.

$$y(n)=y(n-1) + y(n-2) + x(n-1)$$

Using MATLAB, Compute and plot its poles & zeros and also check the stability of the given systems.

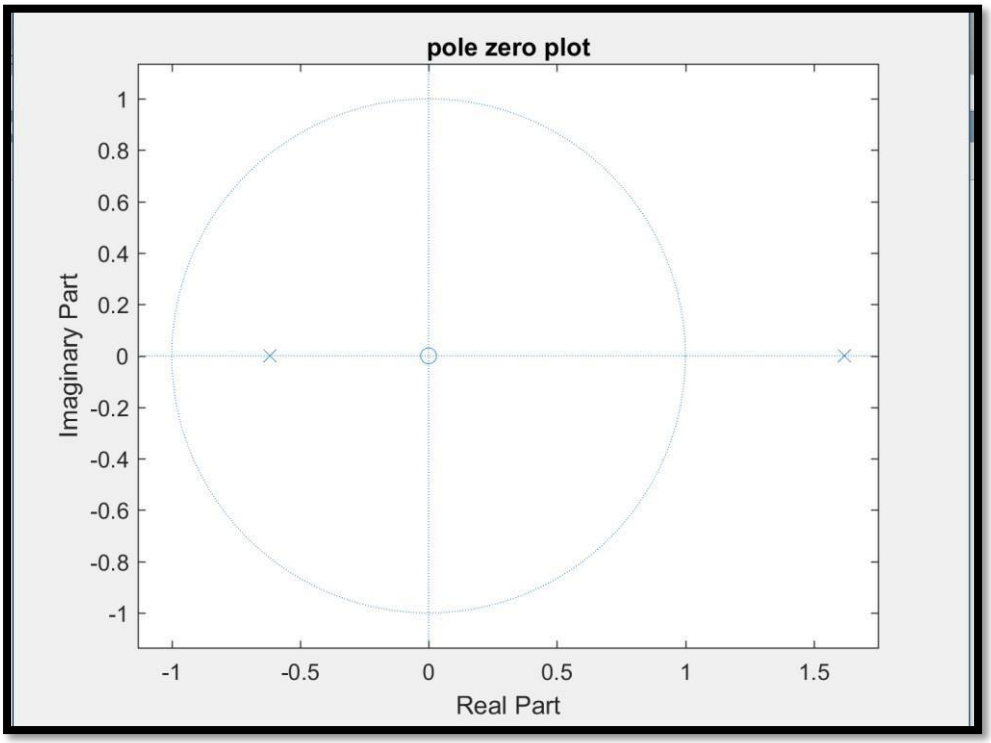
ALGORITHM:

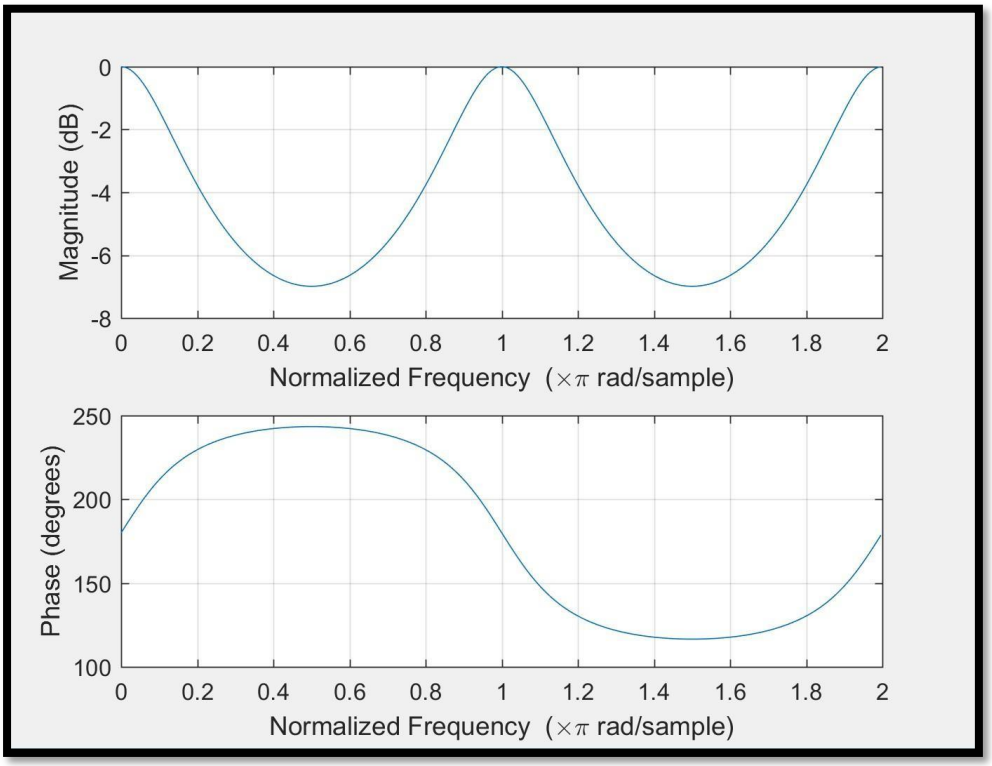
1. First determine the coefficients of y
2. Determine the coefficients of x .
4. Plot the graph

CODE:

```
Clc
clear  all
x = [0 1]
y= [1 -1 -1 ]
zplane(x,y)
title('pole zero plot')
freqz(x,y,'Whole')
```

RESULT:


pole zero plot
Imaginary Part
Real Part
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1
-0.5
0
0.5
1
1.5


Magnitude (dB)
0
-2
-4
-6
-8
0
0.2
0.4
0.6
0.8
1
1.2
1.4
1.6
1.8
2
Normalized Frequency (×π rad/sample)
Phase (degrees)
250
200
150
100
Normalized Frequency (×π rad/sample)