EXPONENTIAL SIGNAL

clc;

clear all;

close all;

n=0:30;

for n=0:30

x(n+1)=(0.9)^n;

end

n=0:30;

subplot(2,1,1);

stem(n,x(n+1));

xlabel('time');

ylabel('amplitude');

title('exponentially decresing signal');

for n=0:30

x(n+1)=(1.4)^n;

end

n=0:30;

subplot(2,1,2);

stem(n,x(n+1));

xlabel('time');

ylabel('amplitude');

title('exponentially increasing signal');

DAMP AND UNDAMP SIGNAL

clc;

clear all;

close all;

t=0:0.01:5;

f=5;

x=exp(-t).\*cos(2\*pi\*f\*t);

subplot(2,1,1);

plot(t,x);

xlabel('time');

ylabel('amplitude');

title('damp signal')

y=exp(t).\*cos(2\*pi\*f\*t);

subplot(2,1,2);

plot(t,y);

xlabel('time');

ylabel('amplitude');

title('undamp signal')

RAMP SIGNAL

clc

clear all;

t=40;

t=input('Enter time period');

for i=1:1:40

if(t>0)

y(i)=i

else

y(i)=0

end

end

t=1:1:20

plot(t,y(t));

xlabel('time');

ylabel('amplitude');

title('Unit ramp signal');

IMPULSE SIGNAL

clc;

clear all;

close all;

n=-10:20;

k=input('enter the number');

x=[zeros(1,10) 1 zeros(1,20)];

subplot(2,1,1);

stem(n,x);

xlabel('time');

ylabel('amplitude');

title('Impulse signal');

y=[zeros(1,10+k) 1 zeros(1,20-k)];

subplot(2,1,2);

stem(n,y);

xlabel('time');

ylabel('amplitude');

title('Shifted impulse signal');

CONTINUOUS UNIT STEP SIGNAL

clc;

clear all;

close all;

t=0:40;

for i=0:1:40

y(i+1)=1

end

i=0:1:40

plot(t,y(i+1));

xlabel('time');

ylabel('amplitude');

title('Unit step signal');

DISCRETE UNIT STEP SIGNAL

clc;

clear all;

close all;

n=-10:20;

k=input('enter the number');

x=[zeros(1,10) ones(1,21)];

subplot(2,1,1);

stem(n,x);

xlabel('time');

ylabel('amplitude');

title('unit step signal');

y=[zeros(1,10+k) ones(1,21-k)];

subplot(2,1,2);

stem(n,y);

xlabel('time');

ylabel('amplitude');

title('shifted unit step signal');

**SAMPLING THEOREM IN TIME DOMAIN**

clc;

clear all;

close all;

t=-10:.01:10;

n=-10:1:10;

fm=0.25;

T=0:20;

x=cos(2\*pi\*fm\*t)

subplot(2,2,1)

plot(t,x)

xlabel('time')

ylabel('amplitude')

title('cosine signal')

fs1=1.2\*fm;

fs2=2\*fm;

fs3=4\*fm;

xn1=cos(2\*pi\*n\*(fm/fs1));

subplot(2,2,2); stem(n,xn1);

hold on;

subplot(2,2,2);

plot(n,xn1)

xlabel('time')

ylabel('amplitude')

title('fs1=1.2\*fm')

n=-10:1:10;

xn2=cos(2\*pi\*n\*(fm/fs2));

subplot(2,2,3); stem(n,xn2);

hold on;

subplot(2,2,3);

plot(n,xn2)

xlabel('time')

ylabel('amplitude')

title('fs2=2\*fm')

n=-10:1:10;

xn3=cos(2\*pi\*n\*(fm/fs3));

subplot(2,2,4); stem(n,xn3);

hold on;

subplot(2,2,4);

plot(n,xn3)

xlabel('time')

ylabel('amplitude')

title('fs3=4\*fm')

SEPRATION OF REAL IMAGINARY AND COMPLEX

clc;

clear all;

close all;

n=0:1:20

theta=(pi/6)\*i;

x=exp(n\*theta);

subplot(3,1,1);

stem(n,x);

xlabel('time')

ylabel('amplitude')

title('complex')

y=real(x)

subplot(3,1,2);

stem(n,y);

xlabel('time')

ylabel('amplitude')

title('real')

z=imag(x)

subplot(3,1,3);

stem(n,z);

xlabel('time')

ylabel('amplitude')

title('imaginary')