Construction of pulse Modulation

```
%Pulse Amplitude Modulation
                                              ylabel('Amplitude');
clc;
                                              legend('Message Signal');
close all;
                                              grid on;
clear all;
                                              subplot (3,1,2);
a=5;
                                              plot (t,x2,'BLUE');
fc=100;
                                              xlabel('Time');
fm=10;
                                              ylabel('Amplitude');
fs=100*fc;
                                              title ('Carrier / Ashwin / 020');
t=0:1/fs:4/fm;
                                              grid on;
x1=a*sin(2*pi*fm*t);
                                              subplot (3,1,3);
x2=0.5*square(2*pi*fc*t)+0.5;
                                              plot (t,y,'RED');
y=x1.*x2;
                                              xlabel('Time');
subplot (3,1,1);
                                              ylabel('Amplitude');
plot (t,x1,'RED');
                                              title ('PAM Signal / Ashwin / 020');
title ('Sine Wave / Ashwin / 020');
                                              grid on;
xlabel('Time');
```

Pulse Wave Modulation

```
clc
                                              ylabel('Amplitude');
close all;
                                              title ('Message Signal / Ashwin /
clear all;
                                              020');
f1=10;
                                              grid on;
f2=4;
                                              n=length(C);
A=5;
                                              for i=1:n
t=0:0.001:1;
                                                if(m(i)>=C(i))
C=A*sawtooth(2*pi*f1*t);
                                                   pwm(i)=1;
subplot (3,1,1);
                                                else
plot (t,C);
                                                   pwm(i)=0;
xlabel('Time');
                                                end
ylabel('Amplitude');
                                              end
title ('Carrier Sawtooth / Ashwin /
                                              subplot (3,1,3);
020');
                                              plot (t,pwm);
grid on;
                                              xlabel('Time');
m=0.75*A.*sin(2*pi*f2*t);
                                              ylabel('Amplitude');
subplot (3,1,2);
                                              title ('PWM / Ashwin / 020');
plot (t,m);
                                              axis ([0 1 0 2]);
xlabel('Time');
                                              grid on;
```

Pulse Wave Modulation

```
clc
                                              ylabel('Amplitude');
close all;
                                              title ('Message Signal / Ashwin /
clear all;
                                              020');
f1=10;
                                              grid on;
f2=4;
                                              n=length(C);
A=5;
                                              for i=1:n
t=0:0.001:1;
                                                if(m(i)>=C(i))
C=A*sawtooth(2*pi*f1*t);
                                                   pwm(i)=1;
subplot (3,1,1);
                                                else
plot (t,C);
                                                   pwm(i)=0;
xlabel('Time');
                                                end
ylabel('Amplitude');
                                              end
title ('Carrier Sawtooth / Ashwin /
                                              subplot (3,1,3);
020');
                                              plot (t,pwm);
grid on;
                                              xlabel('Time');
m=0.75*A.*sin(2*pi*f2*t);
                                              ylabel('Amplitude');
subplot (3,1,2);
                                              title ('PWM / Ashwin / 020');
plot (t,m);
                                              axis ([0 1 0 2]);
xlabel('Time');
                                              grid on;
```

Polar Lie Coding else x((i-1)*n+1:(i-1)*n+n/2) = 1; x((i-1)*n+n/2) = 1; x((i-1)*n+n/2)Polar line encoding 1)*n+n/2:i*n) = 1;clc; end; close all; end; clear all; plot (t, x, 'Linewidth', 3); bits = [1 1 0 1 1 0 0 1];counter = 0; bitrate = 1; for i = 1:length(t) n = 1000;if t(i)>counter T = length(bits)/bitrate; counter = counter + 1; N = n*length(bits); if x(i)>0dt = T/N;result(counter) = x(i); t = 0:dt:T;else result(counter) = 0; x = zeros(1, length(t));end; end; end; for i=1:length(bits) title ('Polar(NRZ-L)linecoding if bits(i)==1(11011001)/ Ashwin / 020'); x((i-1)*n+1:(i-1)*n+n/2) = -1; x((i-1)*n+n/2) = disp(result);

1)*n+n/2:i*n) = -1;

Bipolar Encoding

```
clc;
                                                counter = counter + 1;
clear all;
                                                if x(i) == -lastbit
close all;
                                                result (counter) = 1;
bits = [101101100101];
                                                lastbit = -lastbit;
                                                else result(counter) = 0;
Bitrate = 1;
n = 1000;
                                                end;
T = length (bits)/bitrate;
                                                end;
N = n*length (bits);
                                                end;
dt = T/N;
                                               title ('Bipolar Encoding
                                               (101101100101)/ Ashwin / 020');
t = 0:dt:T;
                                               disp(result);
x = zeros(1, length(t));
lastbit = 1;
for i=1:length(bits)
if bits(i)==1
x((i-1)*n+1:i*n) = -lastbit;
lastbit = -lastbit;
end;
end;
plot (t, x, 'Linewidth', 3);
counter = 0;
last bit = 1;
for i = 1:length(t)
if t(i)>counter
```