```
clear all;

close all;

T=1;

b=[1 0 1 0 1]

NRZ_out=[];

Vp=1;

for index=1:size(b,2)

 if b(index)==1

 NRZ_out=[NRZ_out ones(1,200)*Vp];

 elseif b(index)==0

 NRZ_out=[NRZ_out ones(1,200)*(-Vp)];

 end

end

figure(1);

stem(b);

xlabel('Time (seconds)-->')

ylabel('Amplitude (volts)-->')

title('Impulses of bits to be transmitted');

figure(2);

plot(NRZ_out);

xlabel('Time (seconds)-->');

ylabel('Amplitude (volts)-->');

title('Generated NRZ signal');

t=0.005:0.005:5;

f=5;

Modulated=NRZ_out.*(sqrt(2/T)*cos(2*pi*f*t));

figure;

plot(Modulated);

xlabel('Time (seconds)-->');

ylabel('Amplitude (volts)-->');

title('BPSK Modulated signal');
```

```
y=[];

demodulated=Modulated.*(sqrt(2/T)*cos(2*pi*f*t));

for i=1:200:size(demodulated,2)

 y=[y trapz(t(i:i+199),demodulated(i:i+199))];

end

received=y>0;

figure;

stem(received)

title('Impulses of Received bits');

xlabel('Time (seconds)-->');

ylabel('Amplitude (volts)')
```