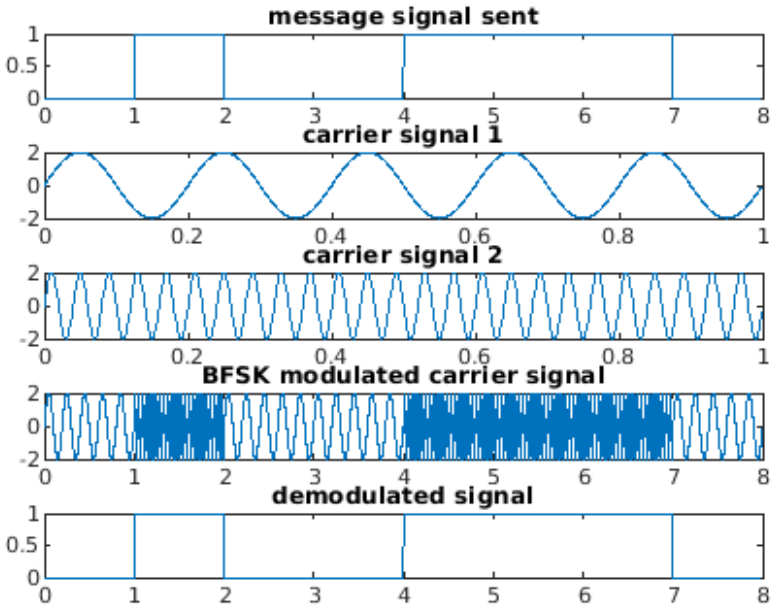
```
% Name:YOGESH
% Roll No:181EC155
% Binary Frequency Shift Keying (BFSK)

N=8; %message length
t=0:1/1000:1-0.001;
T=0:1/1000:8-0.001;
m=[0 1 0 0 1 1 1 0]
% Carrier signal
fc1=5;
fc2=25;
c1=2*sin(2*pi*fc1*t);
c2=2*sin(2*pi*fc2*t);

message_signal=[];
bfsk_signal=[];
demod_signal=[];
% BFSK Modulation----------------------------------
t1=0;
t2=1;
for i=1:N
    if m(i)>0.5
        m_s1=zeros(1,length(t));
        m_s2=ones(1,length(t));
    else
        m_s2=zeros(1,length(t));
        m_s1=ones(1,length(t));
    end
    [message_signal]=[message_signal, m_s2];
    [bfsk_signal]=[bfsk_signal, (c1.*m_s1+c2.*m_s2)]; %multiplying
 message with carrier
end

%plotting
figure;
subplot(5,1,1);
plot(T,message_signal); %plotting message signal
title('message signal sent');

subplot(5,1,2);
plot(t,c1);
title('carrier signal 1');

subplot(5,1,3);
plot(t,c2);
title('carrier signal 2');

subplot(5,1,4);
plot(T, bfsk_signal); %plotting carrier modulated signal
title('BFSK modulated carrier signal');

% BFSK Demodulation----------------------------------
```

```
for i=1:N

    t1=(i-1)*length(t)+1;
    t2=i*length(t);
    x1=sum(c1.*bfsk_signal(:,t1:t2));
    x2=sum(c2.*bfsk_signal(:,t1:t2));
    x=x2-x1;

    if x>0
        [demod_signal]=[demod_signal, ones(1,length(t))];
    else
        [demod_signal]=[demod_signal, zeros(1,length(t))];
    end
end

%plotting demodulated signal
subplot(5,1,5);
plot(T,demod_signal);
title('demodulated signal');
```

```
m =

     0     1     0     0     1     1     1     0
```



Published with MATLAB® R2020b