**CODE:**

clc;

clear all;

close all;

t=[0:0.001:4];

f1=2.5;

m=cos(2\*pi\*f1\*t);

subplot(4,2,[1,2]);

plot(t,m);

title('message');

f2=30;

c=sin(2\*pi\*f2\*t);

subplot(4,2,[3,4]);

plot(t,c);

title('carrier');

mf=10;

s=sin((2\*pi\*f2\*t)+(mf\*sin(2\*pi\*f1\*t)));

subplot(4,2,[5,6]);

plot(t,s);

title('fm');

syms t1;

x=diff(s);

y=abs(x);

[b,a]=butter(10,0.033);

s1=filter(b,a,y);

subplot(6,2,[11,12]);

plot(s1);

title('demodulation');