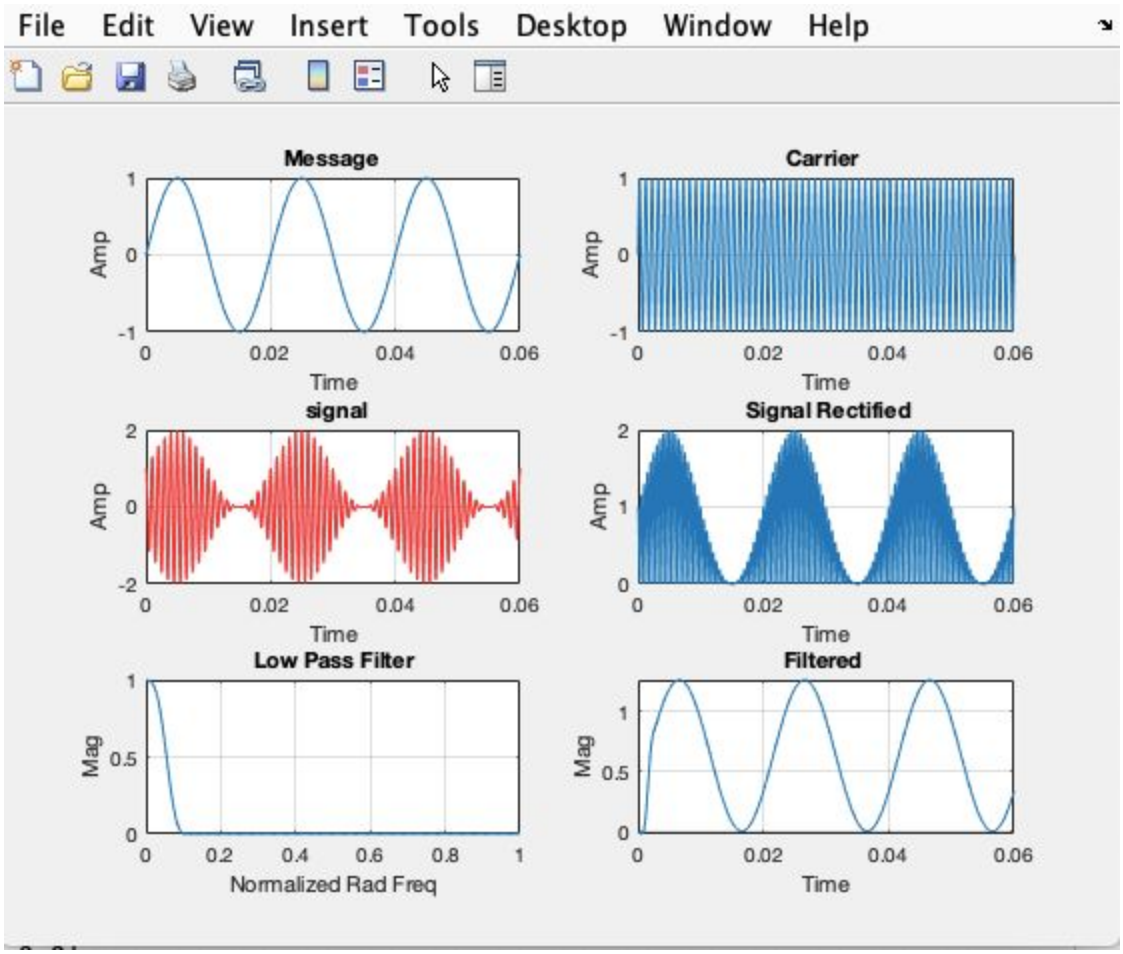
lab5.m

```
Fs = 20000;
T = 1/Fs;
fc= 1000;
f_m=50;
m=1;
Amp = 1;
t_1= (0:1200)*T;
y_1=sin(2*pi*f_m*t_1);
y_2=sin(2*pi*fc*t_1);
x= (Amp+m.*sin(2*pi*f_m*t_1)).*cos(2*pi*fc*t_1);

subplot(321)
plot(t_1,y_1);xlabel('Time');ylabel('Amp');
title('Message ');grid on;
subplot(322);plot(t_1,y_2);xlabel('Time');
ylabel('Amp');title('Carrier ');
grid on;

subplot(323)
plot(t_1,x,'r');xlabel('Time');
ylabel('Amp');title(' signal');
grid on;


 X = abs (x);
 subplot(324);
 plot (t_1,X);
 xlabel('Time');
 ylabel('Amp');
 title(' Signal Rectified');grid on;


 fp = 150;
 fs = 2000;
 f1 = [0 fp/Fs fs/Fs 1];
 M = [1 1 0 0];
 h = firpm(63,f1,M);
 [H,w] = freqz(h,1,512);
 subplot(325)
 plot(w/pi,abs(H));
 title ('Low Pass Filter');
 xlabel ('Normalized Rad Freq');
 ylabel ('Mag');grid on;


 subplot(326);Y = filter(h,1,X);
 plot (t_1,Y);title ('Filtered ');
 xlabel ('Time');ylabel ('Mag');
 grid on;
```


File Edit View Insert Tools Desktop Window Help
Message
Amp
Time
Carrier
Amp
Time
signal
Amp
Time
Signal Rectified
Amp
Time
Low Pass Filter
Mag
Normalized Rad Freq
Filtered
Mag
Time