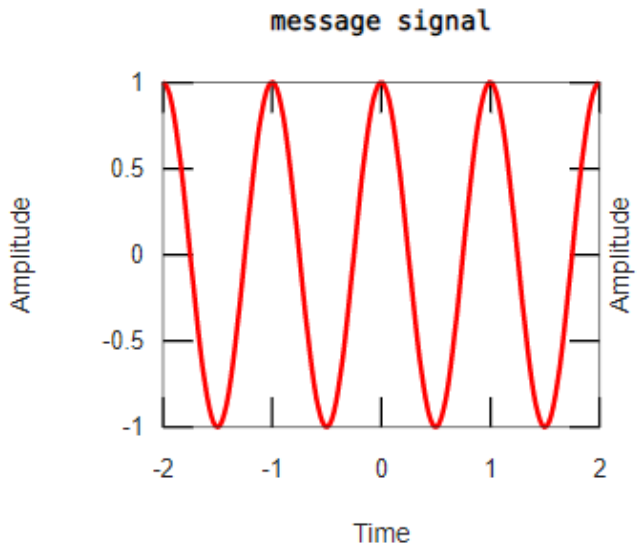
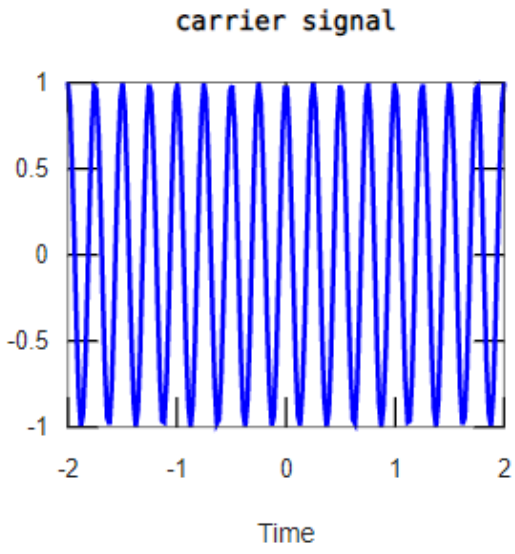
```
clear variables
  close all
fc = input('carrier frequency')
    fm = 4 %Hz
    Ac = 1;
    Am = 1;
    Ta = 1/fc; %period for carrier
    Tc = 1/fm;
    N = 200;
    t0 = -2;
    t1 = 2;
    t = t0:(t1-t0)/(N-1):t1;
    m = Am*cos(2*pi*fm*t);
    S = Ac*cos(2*pi*fc*t);
subplot(2,2,1),plot(t,S,'linewidth',2,'color','r')
title('message signal')
xlabel('Time')
ylabel('Amplitude')
subplot(2,2,2),plot(t,m,'linewidth',2,'color','b')
title('carrier signal')
 xlabel('Time')
 ylabel('Amplitude')
legend('S(t)','M(t)')
a= title('Carrier and Message Signals');
set(a,'fontsize',14);
a= xlabel('t [-2\pi 2\pi]');
set(a,'fontsize',20);
a = ylabel('y');
set(a,'fontsize',20);
a = zlabel('z');
set(a,'fontsize',20);
grid
grid minor
```


message signal
Amplitude
1
0.5
0
-0.5
-1
-2
-1
0
1
2
Time


carrier signal
1
0.5
0
-0.5
-1
-2
-1
0
1
2
Time

```
clc;
clear all;
close all;

fc = input('Frequency of carrier signal: ');
Tc = 1/fc;
Lc = 100*Tc;
Ec = input('Amplitude of carrier signal: ');
tc = 0:0.001*Lc:Lc;
c = Ec*cos(2*pi*fc*tc); %carrier signal
subplot(2,1,1); plot(tc,c,'m','linewidth',1.5)
xlabel('Time','color','r','fontweight','bold','fontsize',14); ylabel
    ('Amplitude','color','b','fontweight','bold','fontsize'
,14);
title('Carrier Signal','fontweight','bold','fontsize',14);

fm = input('Frequency of message signal: '); Tm = 1/fm;

Lm = 10*Tm;
Em = input('Amplitude of message signal: '); ts = 0.001*Lm;
fs = 1/ts;
tm = 0:0.001*Lm:Lm; %message signal
m = Em*cos(2*pi*fm*tm); subplot(2,1,2); plot(tm,m,'g','linewidth',2)
xlabel('Time','color','r','fontweight','bold','fontsize',14); ylabel
    ('Amplitude','color','b','fontweight','bold','fontsize'
,14);
title('Message Signal','fontweight','bold','fontsize',14);
```