FIXING FREQUENCY OF CARRIER AND MESSAGE SIGNAL

```
fm=2;
fc=25;
fs= 1000; %sampling frequency
t_bound=0.5;
```

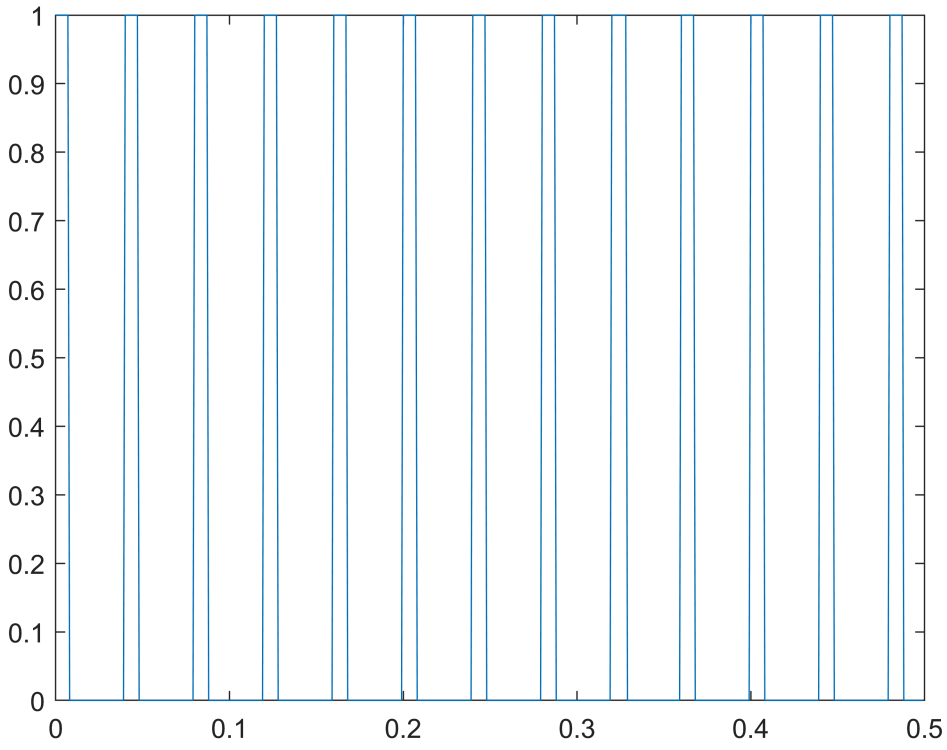
Creation of a Vector of Sampling Instants (Step Size of 1/fs)

```
samples=[0:1/fs:t_bound];
samples= samples(1:end-1); %To have exactly 500 samples
```

GENERATION OF SQUARE WAVE

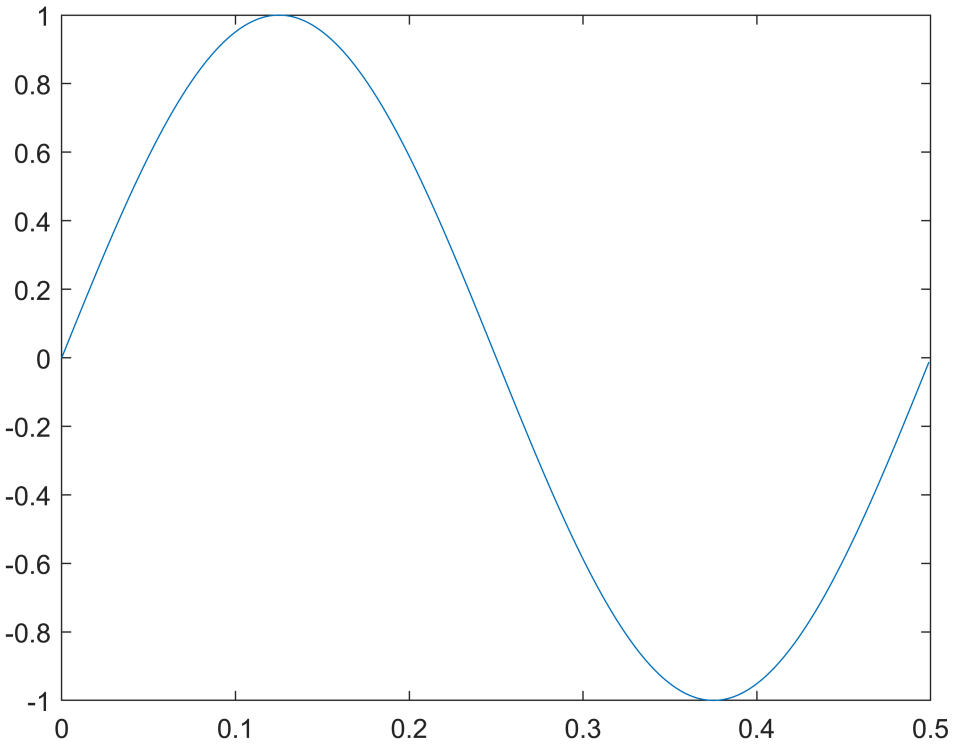
```
duty = 20;
pulse = square(2*pi*fc*samples,duty);
pulse(pulse<0) = 0;
```

```
plot(samples, pulse)
```



MESSAGE SIGNAL

```
m = sin(2*pi*fm*samples);
plot(samples, m)
```

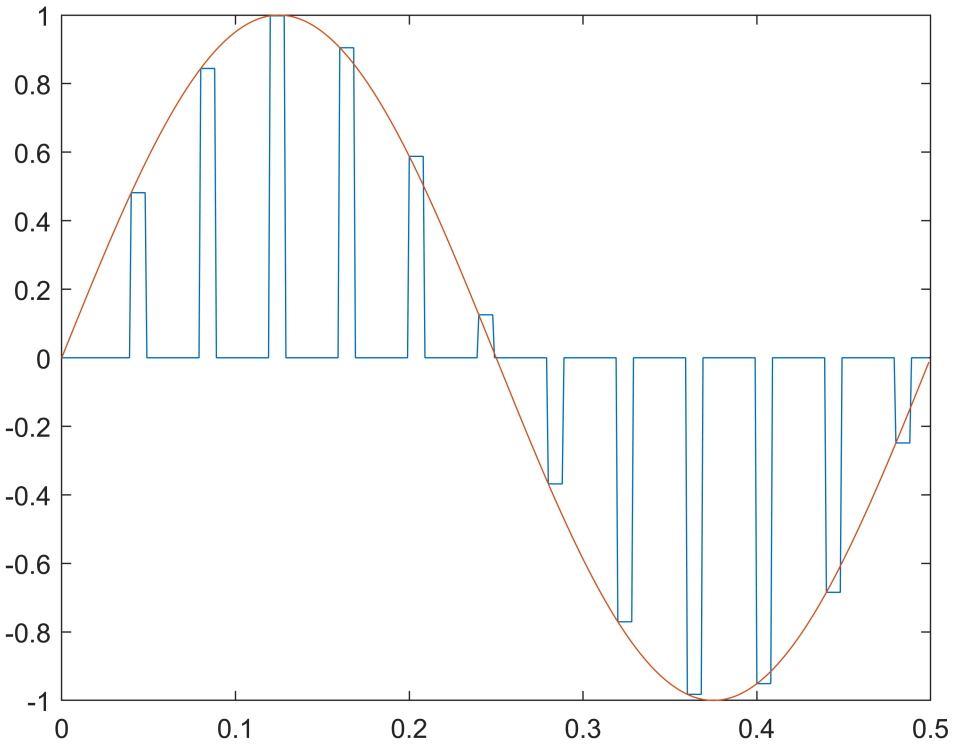


PAM WAVE

```
period_samp = 2*length(samples)/fc; %No. of samples in each pulse duration
indices = [1:period_samp:length(samples)]; %First sample in each pulse duration
on_samp = ceil(period_samp * duty/100); %No. of samples during positive cycle
pam = zeros(1,length(samples)); %Setting it to 0
for i=1:length(indices)
   pam(indices(i):indices(i) + on_samp) = m(indices(i));
end
plot(samples, pam)
hold
```

```
Current plot held
```

```
plot(samples, m)
```


1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
0
0.1
0.2
0.3
0.4
0.5