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**Subject: - Digital Communication**

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### **LAB REPORT 4**

**Aim:** Perform ASK modulation using MATLAB or GNU Octave

**Theory:**

Amplitude-shift keying (ASK) is a form of amplitude modulation that represents digital data as variations in the amplitude of a carrier wave. In an ASK system, a symbol, representing one or more bits, is sent by transmitting a fixed-amplitude carrier wave at a fixed frequency for a specific time duration. For example, if each symbol represents a single bit, then the carrier signal could be transmitted at nominal amplitude when the input value is 1, but transmitted at reduced amplitude or not at all when the input value is 0.

**Code:**

```
clear all
```

```
close all
```

```
clc
```

```
f1 = 25;
```

```
f2 = 5;
```

```
a = 3;
```

```
t = 0:0.001:1;
```

```
x = a*sin(2*pi*f1*t) + (a/2);
```

```
u = (a/2)*square(2*pi*f2*t) + (a/2);
```

```
v = x.*u;
```

```
subplot(3,1,1)
```

plot(t,x);

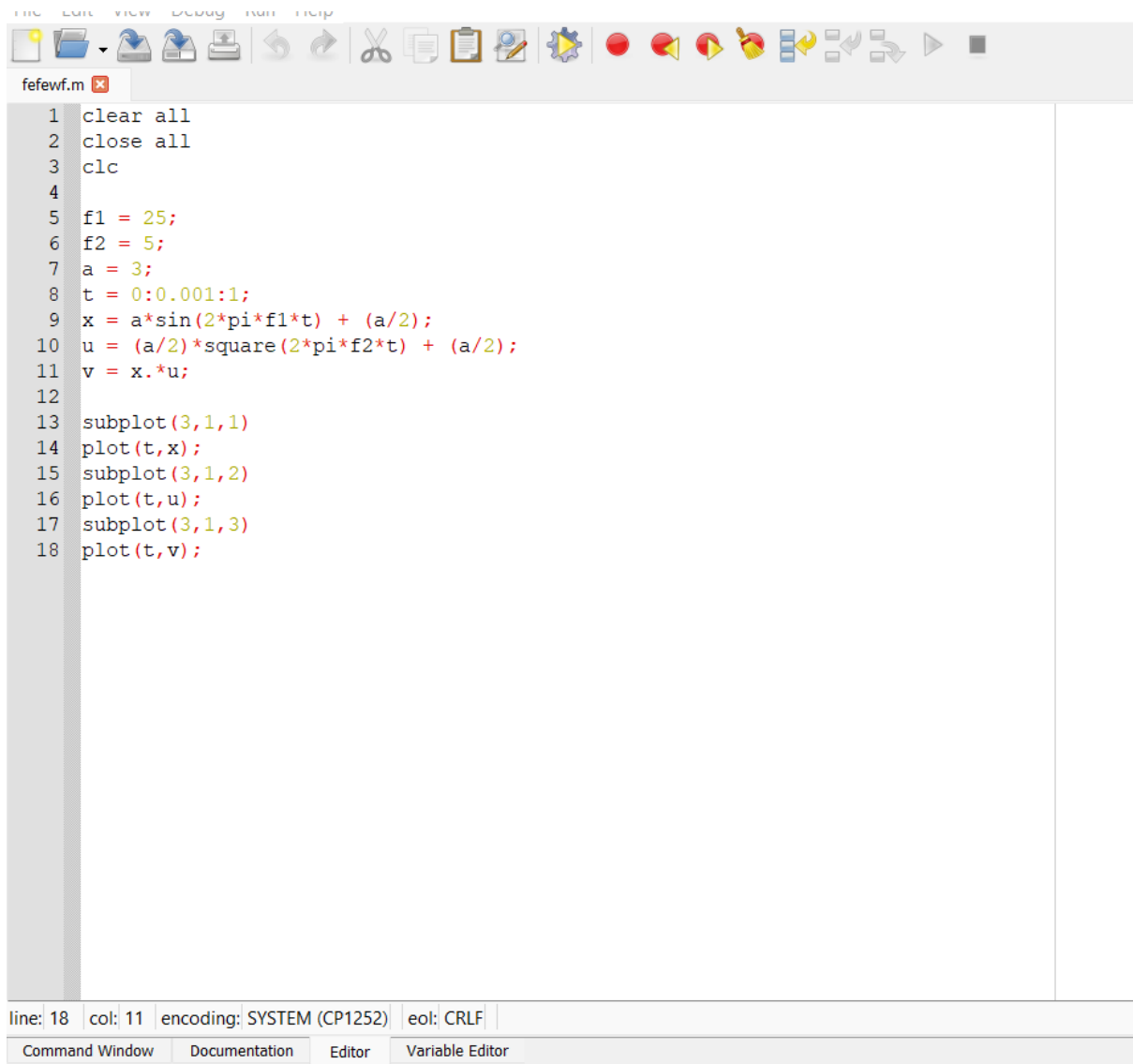
subplot(3,1,2)

plot(t,u);

subplot(3,1,3)

plot(t,v);

Screenshot:

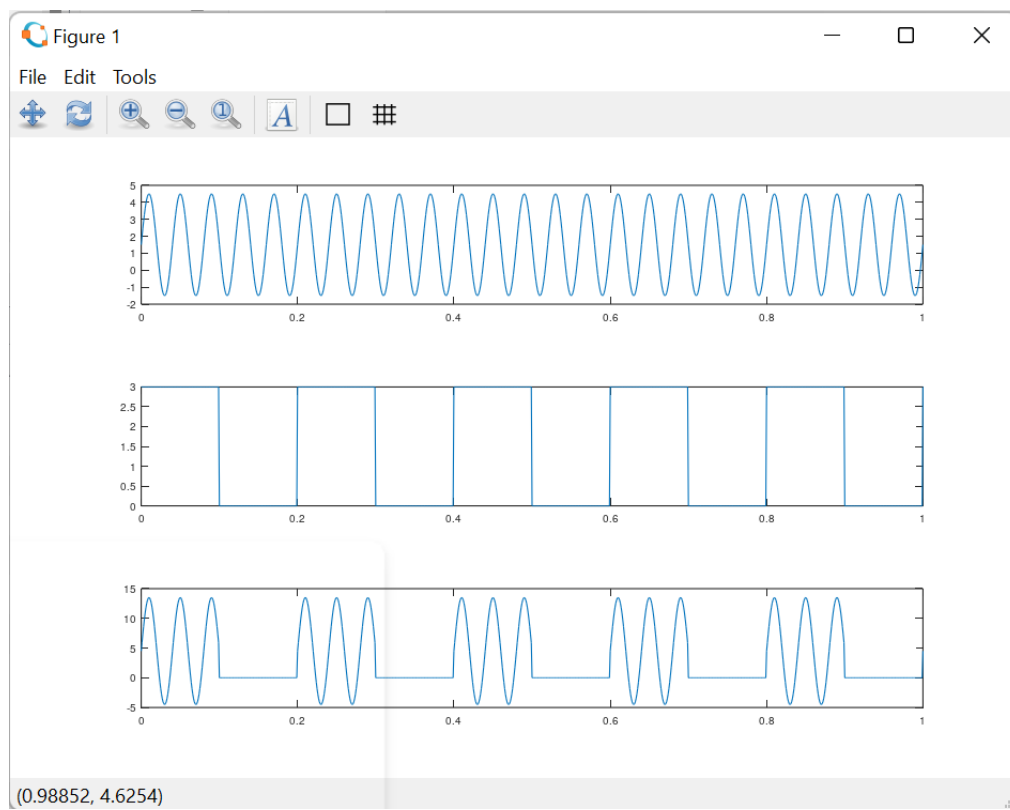


```
1 clear all
2 close all
3 clc
4
5 f1 = 25;
6 f2 = 5;
7 a = 3;
8 t = 0:0.001:1;
9 x = a*sin(2*pi*f1*t) + (a/2);
10 u = (a/2)*square(2*pi*f2*t) + (a/2);
11 v = x.*u;
12
13 subplot(3,1,1)
14 plot(t,x);
15 subplot(3,1,2)
16 plot(t,u);
17 subplot(3,1,3)
18 plot(t,v);
```

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Command Window Documentation Editor Variable Editor

Output:



**Conclusion:** We successfully Perform ASK modulation using matlab.