Name: - Yashkumar Ingrodiya

Enrolment number: - BT19ECE010

Date: - March 15th, 2022

Subject: - Digital Communication

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);
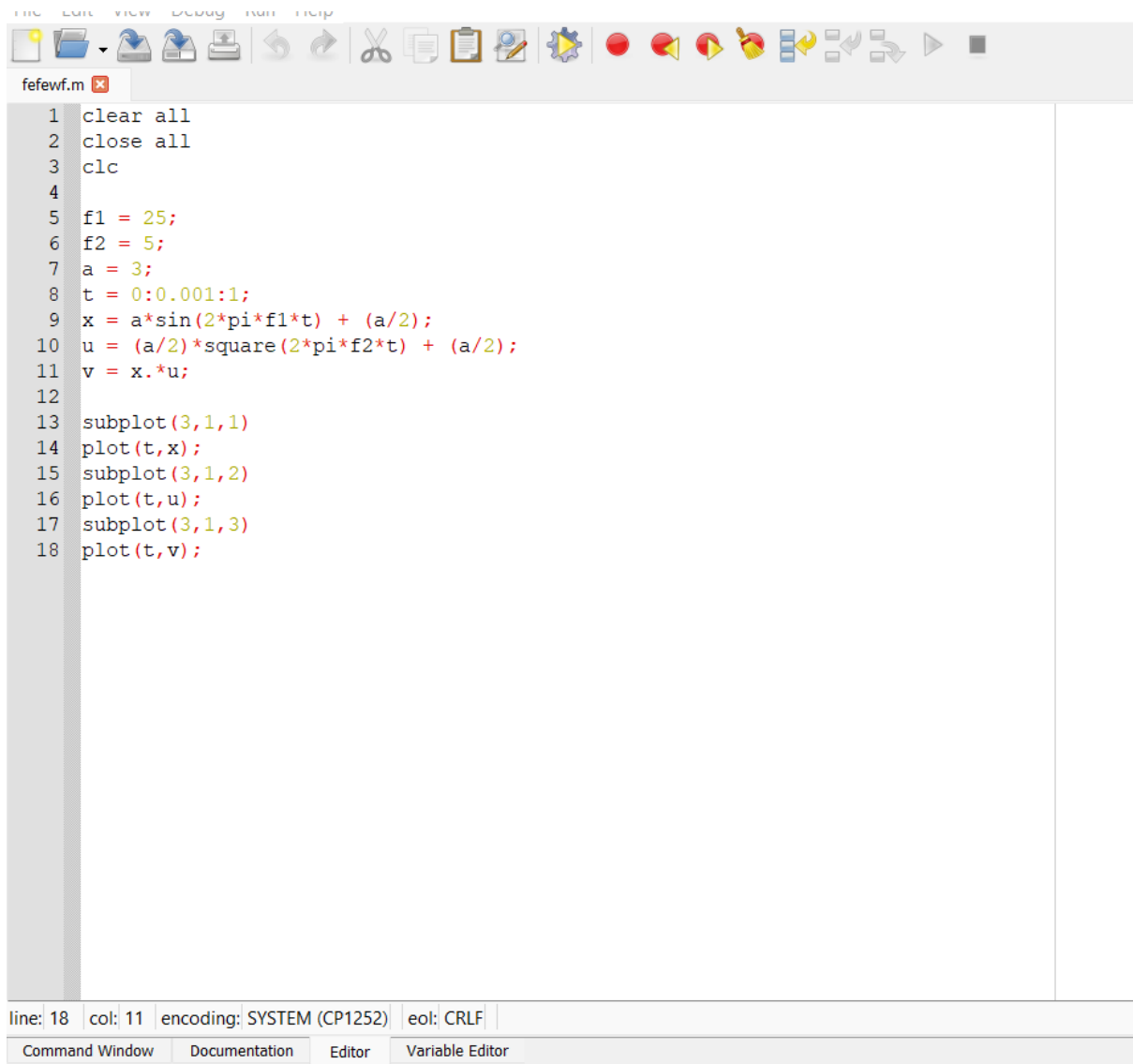
subplot(3,1,2)
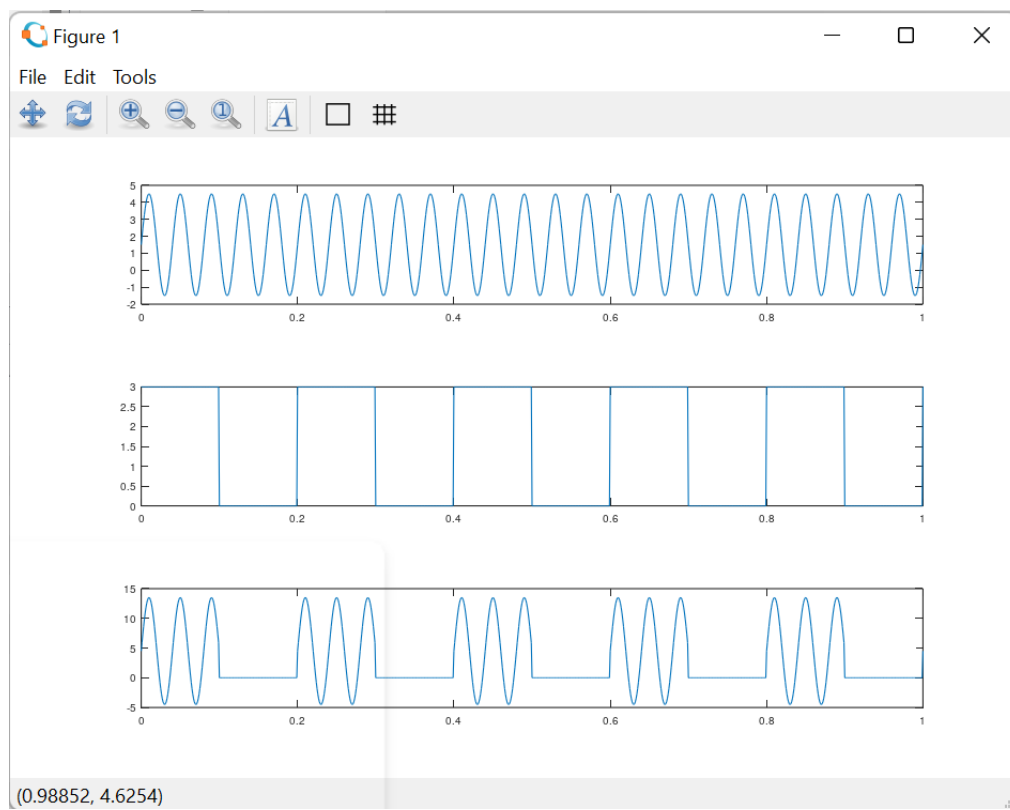
plot(t,u);

subplot(3,1,3)

plot(t,v);

Screenshot:

```matlab
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);
```

Output:

Conclusion: We successfully Perform ASK modulation using matlab.