LAB#10

NAME : ABDULLAH ZUNORAIN

REG NO : 19JZELE0338

SUBJECT : DATA COMMUNICATION(LAB)

SUBMITTED TO : DR. UZAIR GILLANI

SECTION : A

DEPT : ELECTRICAL COMM

CAMPUS : JALOZAI

Simulation of Time Division Multiplexing (TDM)

TIME DIVISION MULTIPLEXING (TDM) AIM:

To write a Matlab program for time division multiplexing (TDM) and plot the characteristics curve.

APPARATUS REQUIRED:

1. Computer
2. Matlab software R2014a

THEORY:

Time division multiplexing (TDM) is the process of sending more than one source information over a same channel in different time slot which helps in efficient channel utilization and saves bandwidth.

PROCEDURE:

1. Open Matlab version R2014a.
2. Open new file and enter the program and save it.
3. Add the path to the location of the file in the system.
4. Compile the program and check for any error and debug it.
5. Note down the output.

MATLAB CODING:

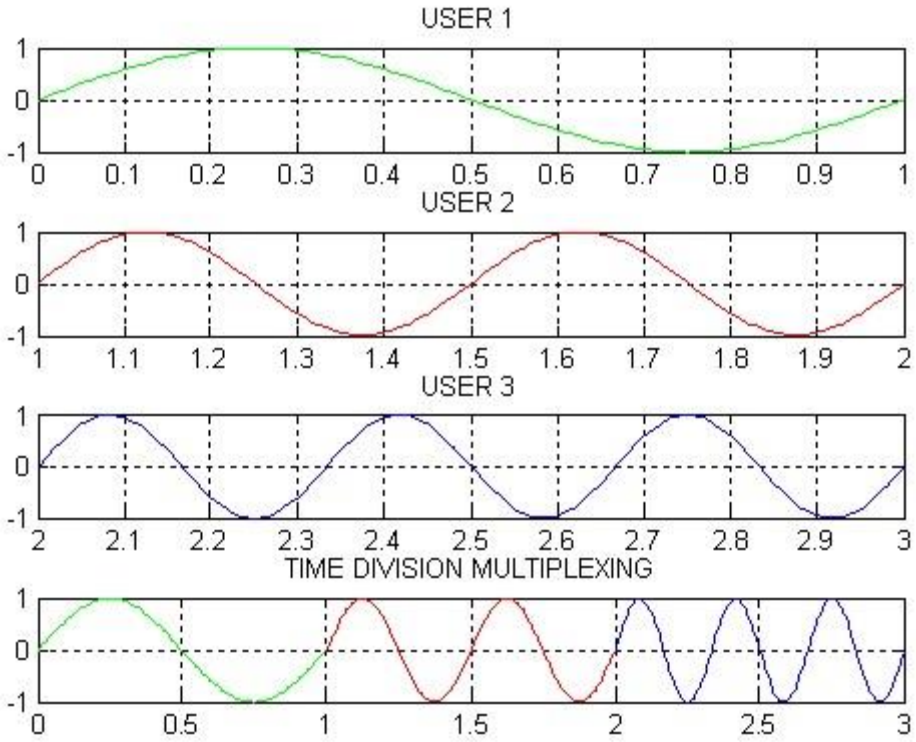
```
n1=input ('Enter the length=  ');
n2=input ('Enter the length=  ');
n3=input ('Enter the length=  ');
t=0:0.01:n1; t1=1:0.01:n2;
t2=2:0.01:n3; x=sin (2*pi*t); y=sin
(4*pi*t1); z=sin (6*pi*t2); subplot
(4,1,1); plot (t,x,'g'); title
('USER 1'); grid on;
Subplot (4, 1, 2);
```

```
Plot (t1, y,'r'); title
('USER 2'); gridon;
subplot(4,1,3);
plot(t2,z); title('USER
3'); gridon;
subplot(4,1,4);
plot(t,x,'g',t1,y,'r',t2,z); TITLE('TIME
DIVISION MULTIPLEXING'); grid on;
```

INPUT:

Enter the length 1
Enter the length 2
Enter the length 3

OUTPUT WAVEFORM:



RESULT:

Thus the TDM signal was sampled and reconstructed using MATALB program and verified.

----------TASK#01----------

write a Matlab program for time division multiplexing (TDM) and plot the characteristics curve.

ANS:

MATLAB CODING FOR TDM :

```
n1=input ('Enter the length=  ');
n2=input ('Enter the length=  ');
n3=input ('Enter the length=  ');
t=0:0.01:n1;
t1=3:0.01:n2;
t2=5:0.01:n3;
x=sin (2*pi*t);
y=sin (4*pi*t1);
z=sin (6*pi*t2);
subplot (4,1,1);
plot (t,x,'g');
title ('USER 1');
grid on;
subplot (4, 1, 2);
plot (t1, y,'r');
title ('USER 2');
grid on;
subplot(4,1,3);
plot(t2,z);
title('USER 3');
```

```
grid on;
subplot(4,1,4);
plot(t,x,'g',t1,y,'r',t2,z);
title('TIME DIVISION MULTIPLEXING');
grid on;
```

INPUT:

```
Enter the length =  3
Enter the length = 5
Enter the length =  9
```

OUTPUT WAVEFORM: