Department of Electronics and Communication Engineering

Sub Code/Name: **BEC6L1-COMPUTER COMMUNICATION AND NETWORKS LAB**

Name : ....

Reg No : ....

Branch : ....

Year & Semester : ....

LIST OF EXPERIMENTS

SI No	Experiments	Page No
1	PC to PC Communication Parallel Communication using 8 bit parallel cable Serial communication using RS 232C	
2	Ethernet LAN protocol: To create scenario and study the performance of CSMA/CD protocol through simulation	
3	Token bus and token ring protocols: To create scenario and study the performance of token bus and token ring protocols through simulation	
4	Wireless LAN protocols: To create scenario and study the performance of network with CSMA / CA protocol and compare with CSMA/CD protocols	
5	Implementation and study of stop and wait protocol	
6	Implementation and study of Goback-N and selective repeat protocols	
7	Implementation of distance vector routing algorithm	
8	Implementation of Link state routing algorithm	
9	Implementation of Data encryption and decryption	
10	Transfer of files from PC to PC using Windows / Unix socket processing	

INDEX

Expt.	Date	Name of the Experiment	Marks	Staff SIGN

Ex No:1

Date:

Pc To Pc Communication Parallel Communication Using 8 Bit Parallel Cable Serial Communication Using Rs 232

Aim:

To study Serial communication using RS 232C and Parallel Communication using 8 bit parallel cable.

EQUIPMENTS:

- DCT-03.
- 9 Pin D connector Cables – 2 Nos.
- 25 Pin D connector Cables – 2 Nos.
- Computers – PC - 2 nos.
- Connecting Chords.
- Power Supply.

PROCEDURE:

SERIAL COMMUNICATION:

1. Connect the power supply with proper polarity to the kit DCT-03 and while connecting, ensure that it is off.
2. Keep all switch fault switches in off position.
3. Refer to the fig. and carry out the following connections and settings.
4. Connect 9 pin D connector cable between one computer com port and CN3 connector on DCT-03 kit and second 9 pin D connector cable between another computer com port and CN4 connector on DCT-03 kit.
5. Connect the **TD1** post to **RD2** post.
6. Connect the **RD1** post to **TD2** post.
7. Keep the switch setting of **SW4** towards **ON** position as shown in figure.
8. Switch ON the power supply and both the computers.
9. Run DCT-03 software and select Serial Communication Software link on both PC's.
10. Select your computer operating system, this will provide link to hyper terminal software. Refer Hyperlink settings**.**
11. Once the connection to hyperlink is established you can type in one of the computers window and can see typed text on another computers window.
12. To do file transfer select a file transfer protocol using hyper link on both PC's.
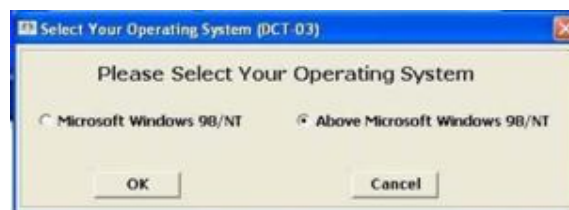
Ex No:1(a)

Date:

PC TO PC COMMUNICATION FOR FILE TRANSFER

AIM

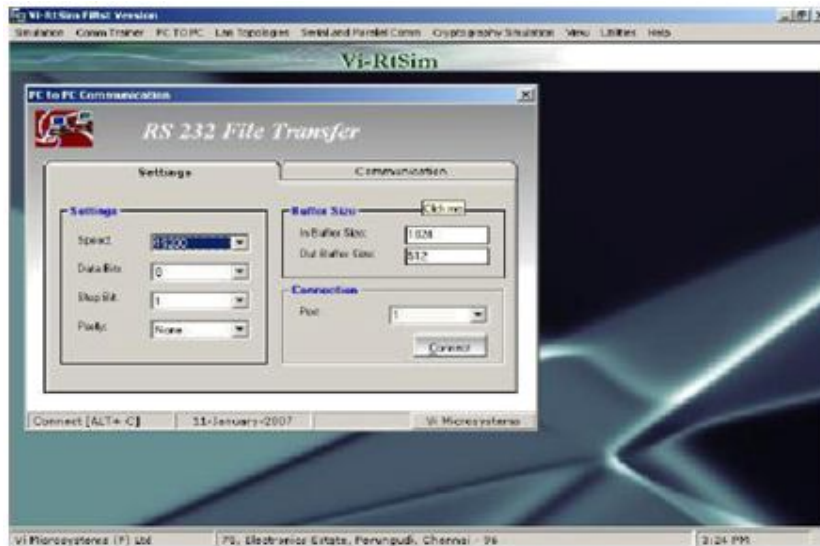To study the file transfer through serial communication using RS 232 between two PCs.

APPARATUS REQUIRED

- ➢ Two PC with Vi-Rt sim
- ➢ RS 232
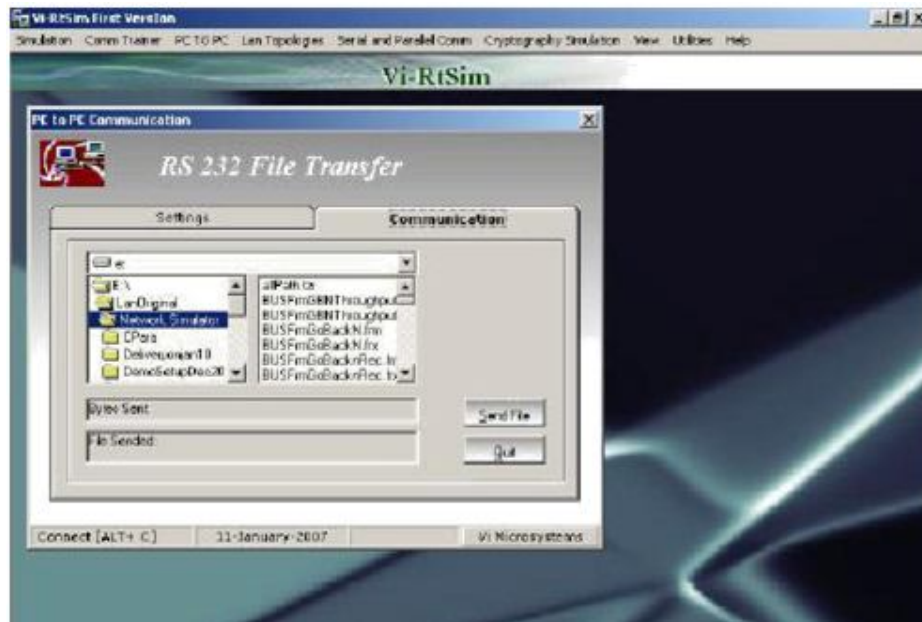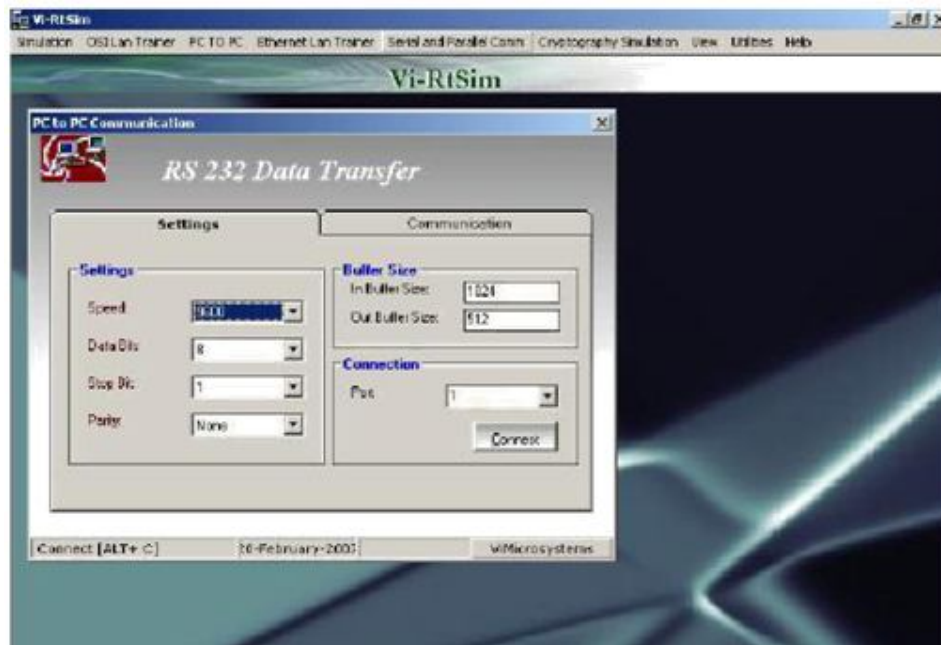- ➢ Serial parallel communication kit
- ➢ Patch chords

PROCEDURE

From the menu bar, select Serial and Parallel Comm -> RS 232 File Transfer. Open Transmitter in Client side and Receiver in Server side.

Transmitter

Click on Connect to establish connection. Then click on Communication Tab,
you have another page like as follows.

In this page, select file and then click on Send File Button.

Receiver

From the menu bar, select Serial and Parallel Comm -> RS 232 File
Transfer -> Receiver.

Receiver window is displayed as follows

Click on Connect to establish connection. Then click on Communication Tab, you have another page like as follows.
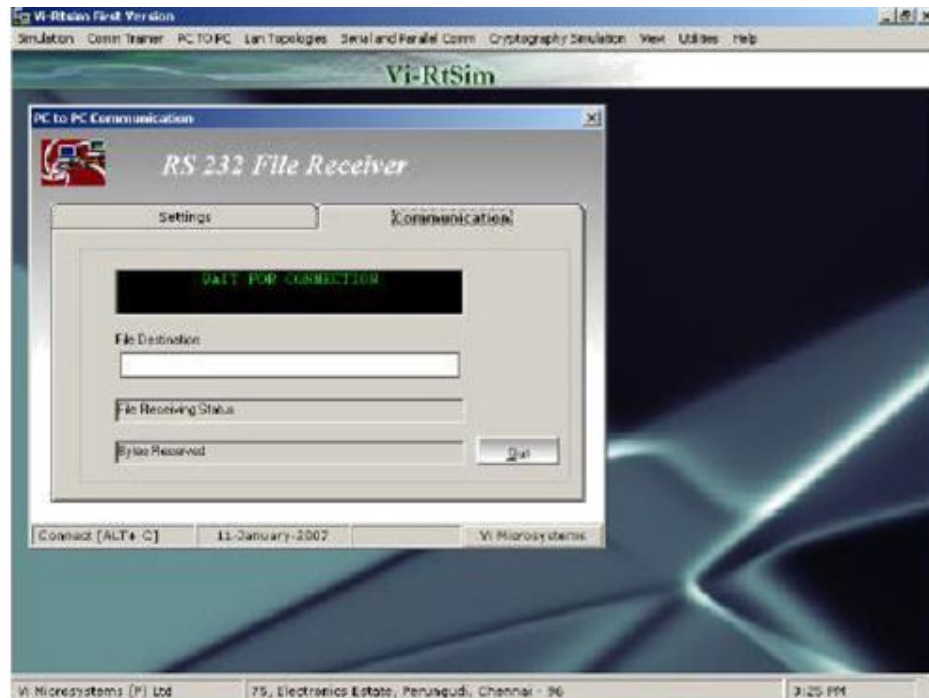
RESULT:

Thus the file transfer through serial communication using RS 232 between two PCs was studied

Ex No: 1(b)
Date:

PC TO PC COMMUNICATION FOR DATA TRANSFER

AIM:

To study the Data Transfer through serial communication using RS 232 between two PCs.

APPARATUS REQUIRED:

Two PC with Vi-Rtsim
RS 232
Serial parallel communication kit
Patch chords

PROCEDURE:

From the menu bar, select Serial and Parallel Comm -> RS 232 Data Transfer.
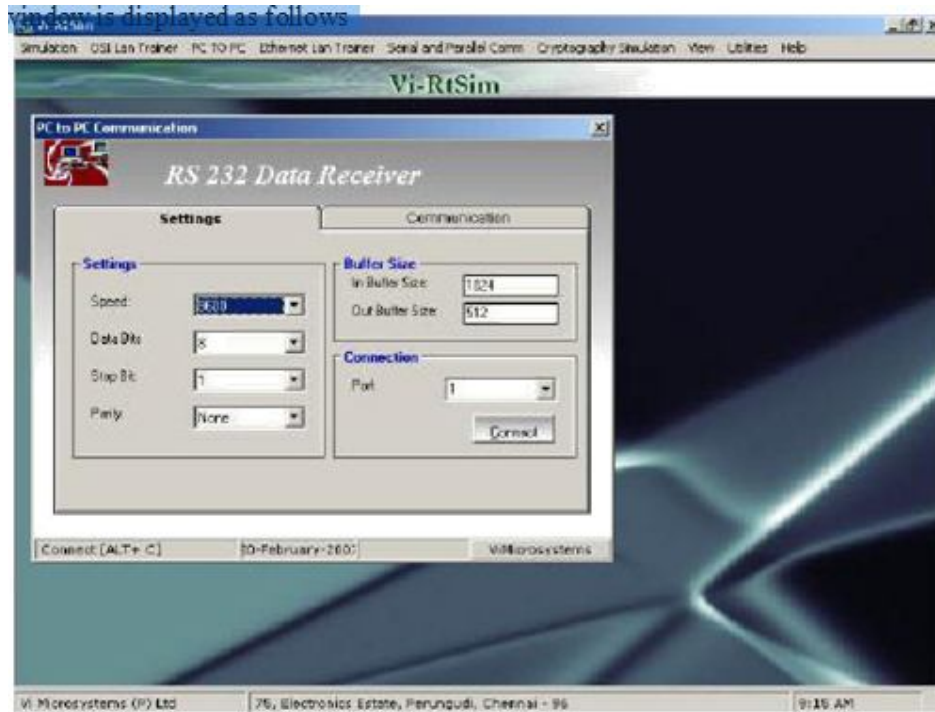Open Data Transfer in Client side and Data Receiverd in Server side. Data Transfer

Click on Connect to establish connection. Then click on Communication Tab, you have another page. In that page, enter data and click on Send Button.

Data Receiver
From the menu bar, select Serial and Parallel Comm->RS 232 Data Transfer->Receiver.
Receiver window is displayed as follows

RESULT:

Thus the data transfer through serial communication using RS 232 between two PCs was studied.

Ex No:1(c)
Date:

PC TO PC COMMUNICATION FOR DATA ENCRYPTION AND DATA DECRYPTION

AIM:
To study the Data Security through serial communication using RS 232 between
two PCs.

APPARATUS REQUIRED

> Two PC with Vi-Rtsim
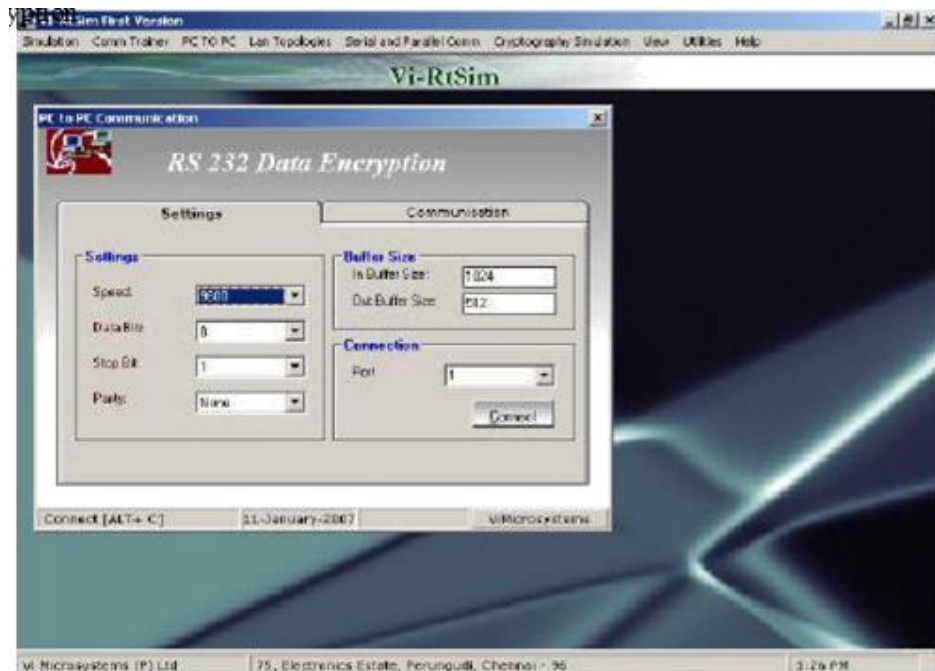> RS 232
> Serial parallel communication kit
> Patch chords

PROCEDURE
RS 232 Data Security
From the menu bar, select Serial and Parallel Comm -> RS 232 Data Security.
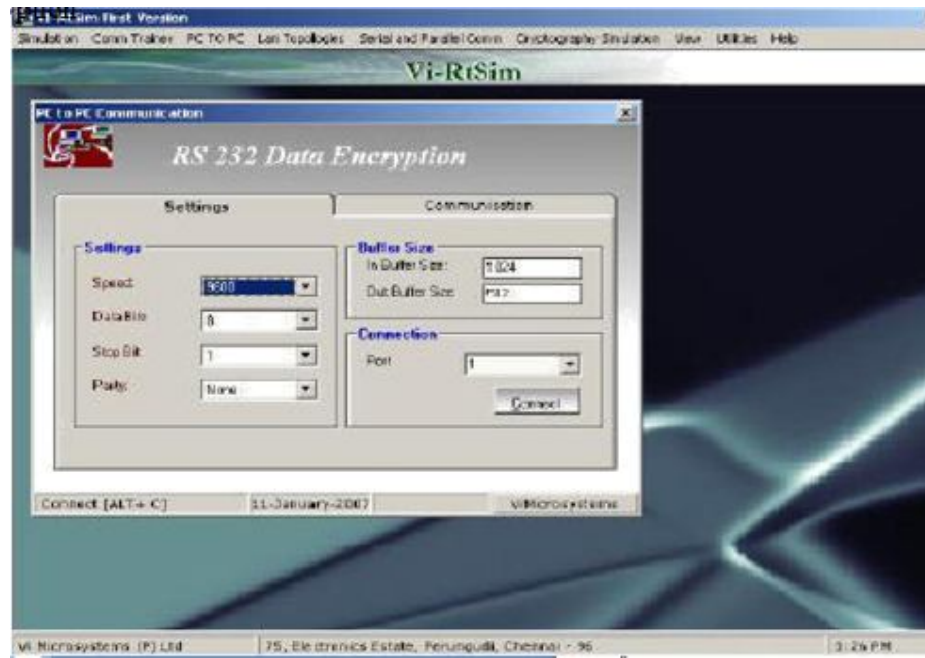Open Data Encryption in Client side and Data Decryption in   Server side.
Data Encryption

Click on Connect to establish connection. Then click on Communication Tab, you have another
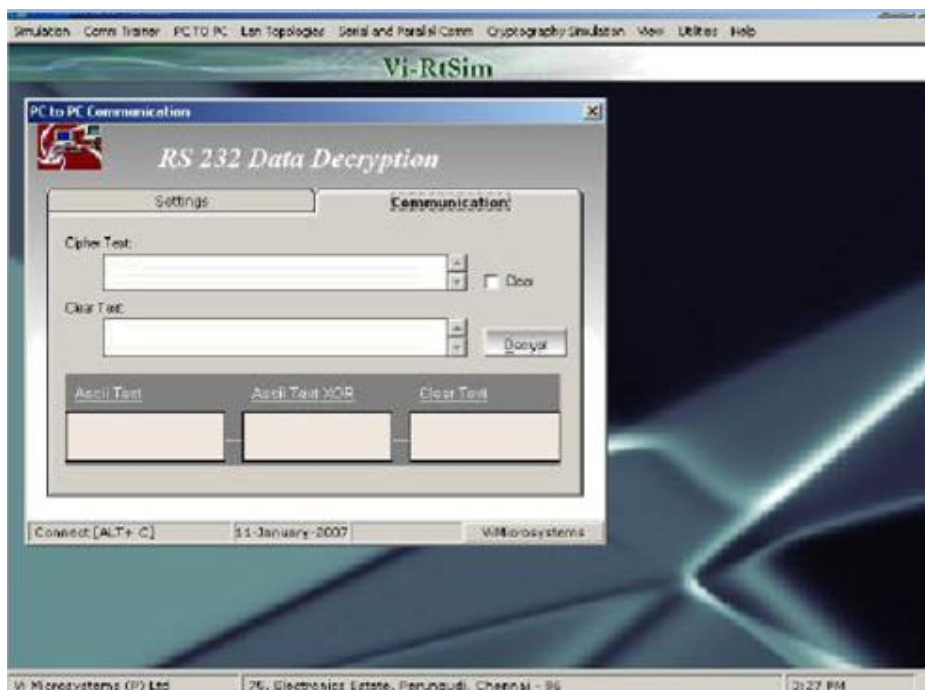page. In that page, enter data and click on Send Button.
Data Decryption
From the menu bar, select Serial and Parallel Comm->RS 232 Data Security-
>Data Decryption
The Data decryption window is displayed as follows

Click on Connect to establish connection. Then click on Communication Tab, you have another page like as follows.

If you want to decrypt Cipher Text, click on Decrypt Button.

RESULT:

Thus the Data Security through serial communication using RS 232 between two PCs was studie

Ex No:1(d)
Date:
PC TO PC COMMUNICATION FOR FILE ENCRYPTION AND DATA DECRYPTION

AIM:

To study the file Security through serial communication using RS 232 between two PCs.

APPARATUS REQUIRED:

> ➢ Two PC with Vi-Rtsim
> ➢ RS 232
> ➢ Serial parallel communication kit
> ➢ Patch chords

PROCEDURE:

RS 232 File Security
From the menu bar, select Serial and Parallel Comm -> RS 232 File Security.
Open File Encryption in Client side and File Decryption in Server side.
File Encryption

Click on Connect to establish connection. Then click on Communication Tab, you have another page. In that page, select File and click on Send File Button.

File Decryption
From the menu bar, select Serial and Parallel Comm -> RS 232 File Security -> File Decryption
The File Decryption window is displayed as follows

Click on Connect to establish connection. Then click on Communication Tab, you have another page like as follows.

If you want to decrypt file, click on Decrypt Button.

RESULT:

Thus the file Security through serial communication using RS 232 between two PCs was studied.

PC TO PC COMMUNICATION FOR DATA TRANSFER THROUGH PARALLEL COMMUNICATION

Aim:

To study the Data Transfer through parallel communication using parallel port(LPT) between two PCs.
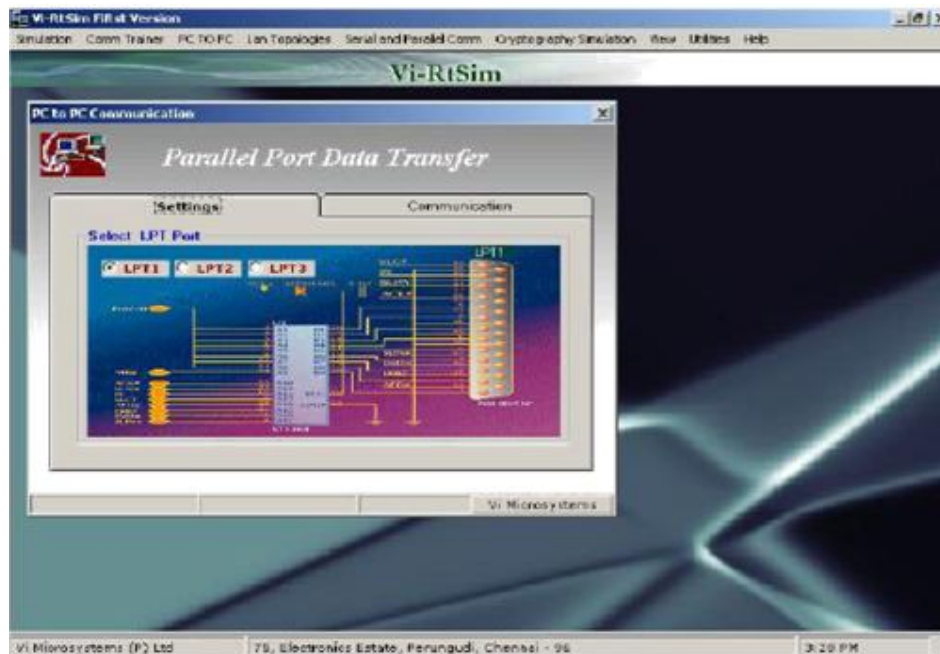
APPARATUS REQUIRED

Two PC with Vi-Rtsim
Parallel port (LPT)
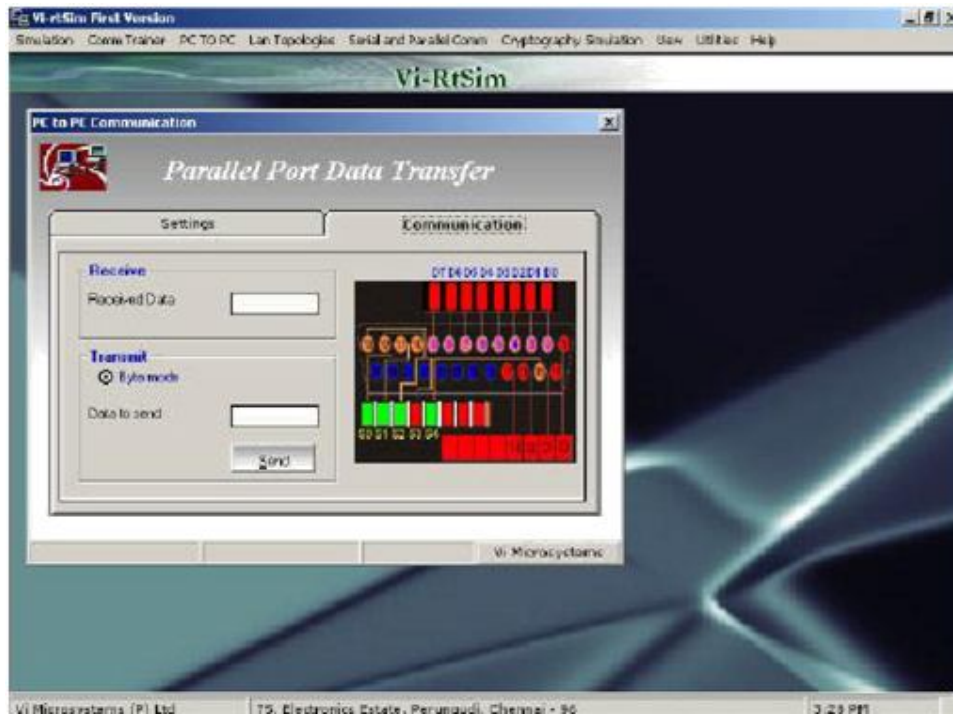Serial parallel communication kit
Patch chords

PROCEDURE

PARALLEL PORT DATA TRANSFER

From the menu bar,select Serial and Parallel Comm -> Parallel Cable.

Choose any one of the LPT Port like LPT1,LPT2 and LPT3.Then click on Communication Tab, you have another page as follows.

In this page, enter data in Data to be send field and click on Send Button.

RESULT:

Thus the Data Transfer through parallel communication using parallel port(LPT) between two PCs was studied.

Ex No:2
Date:
ETHERNET LAN PROTOCOL - TO CREATE SCENARIO AND STUDY THE PERFORMANCE OF CSMA/C D PROTOCOL THROUGH SIMULATION

Aim:
Implementation and study of CSMA-CD protocol.

EQUIPMENTS:
• LTS-01 trainer kit
• 3 Computers with win-2K / XP and Ethernet port available on them
• RJ-45 to RJ-45 LAN connecting cables
• L-SIM LAN protocol analyzer and simulator software

PROCEDURE:

1.   Connect 3 or more computer LAN ports using RJ-45 to RJ-45 LAN connecting cables provided with the system to LTS-01 star topology ports.

2.   Switch on the LTS-01 & Computers.

3.   Run L-SIM software on all the computers, one should be server and others should be clients.

4.   On the server computer select type of network as LAN.

5.   On the server computer select the topology as STAR, select protocol as CSMA-CD click on create network button.

6.   Remote computer details will appear on the computers connected in network, server will be able to see all clients and all clients will be able to see only server.

7.   Select the server computer to whom data file is to be transferred from one of the client computer; from the load button, previously stored/selected file information can be loaded or you can select any file, which is to be transmitted.

8.   File size will appear in the software window, select the packet size, inter packet delay and click OK.

9.   Total packets formed for that file will be indicated on computers, same details of file will appear on remote computer to which file is to be transmitted.
10.   Click on file transfer button to transfer file.

11.   During file transfer process try to send file to server from another client computer, file transfer from second transmitter will also gets initiated.

12.When packet from second sender collides with first sender it will be indicated as collision packet on server & Client-1.
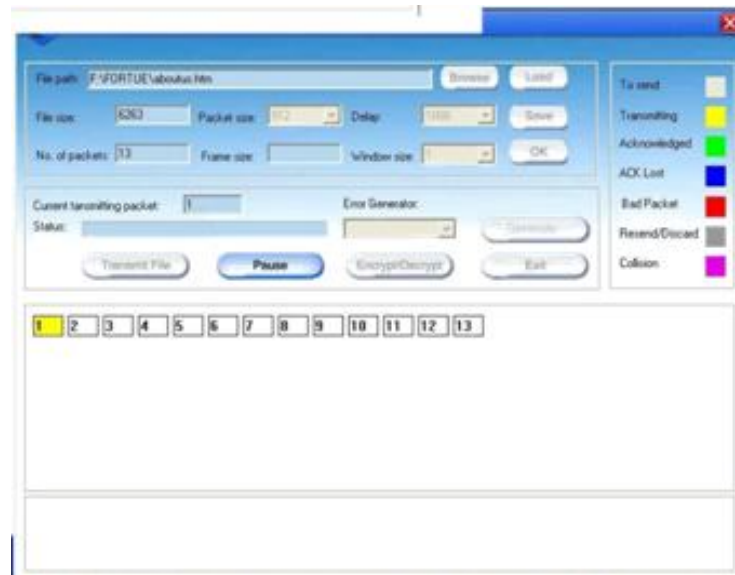
14.   Once the first sender file reached to server its display is refreshed and server will show packet status for second sender.

15.   Second sender file transfer will also get completed and thus collision of two packets transmitted simultaneously from two senders is detected and cleared.

16.   Multiple file transfer between various server-client combinations should be performed to observe throughput v/s packet size graph on transmitter computer.

17.   Close file transfer window and click on protocol analyzer and Network analyzer buttons on transmitter computer to view details of the log created.

18.   Under Network analyzer window click on Graph analyzer button.

19.   Calculate throughput and click on Plot graph button.
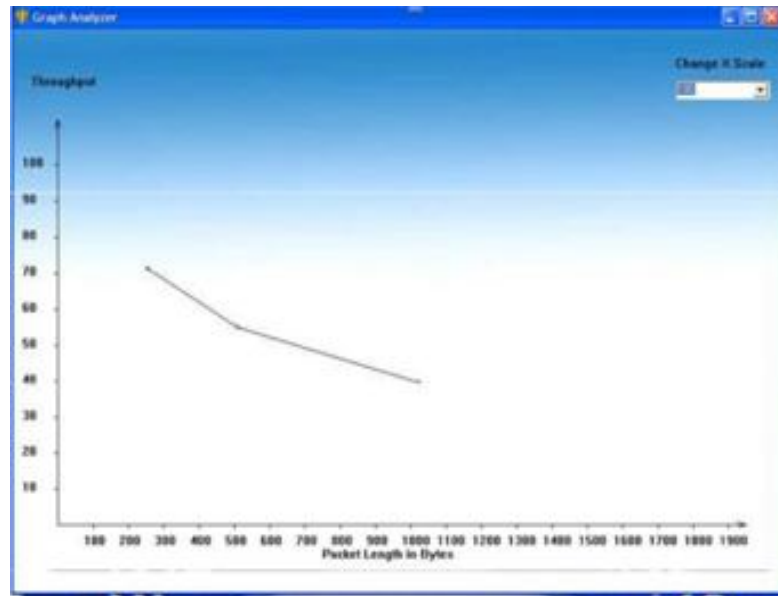
Graph for CSMA-CD protocol

20.   Detailed graph of throughput v/s packet size for the total file transfer activity will appear on graph window.

21.   This plot can be printed by clicking on print button.

RESULT:
The performance of CSMA/CD protocol through simulation was implemented and studied.

Ex No:3(a)
Date:

TOKEN BUS AND TOKEN RING PROTOCOLS - TO CREATE SCENARIO AND STUDY THE PERFORMANCE OF TOKEN BUS AND TOKEN RING PROTOCOLS THROUGH SIMULATION IMPLEMENTATION OF TOKEN RING PROTOCOL

Aim

To study the Token Ring protocol and analyse the performance of Token Ring

protocol. **APPARATUS REQUIRED**

 ➢ PC with Vi-Rtsim

 ➢ OSI LAN TRAINER
 ➢ RS 232 ETHERNET CABLE

PROCEDURE

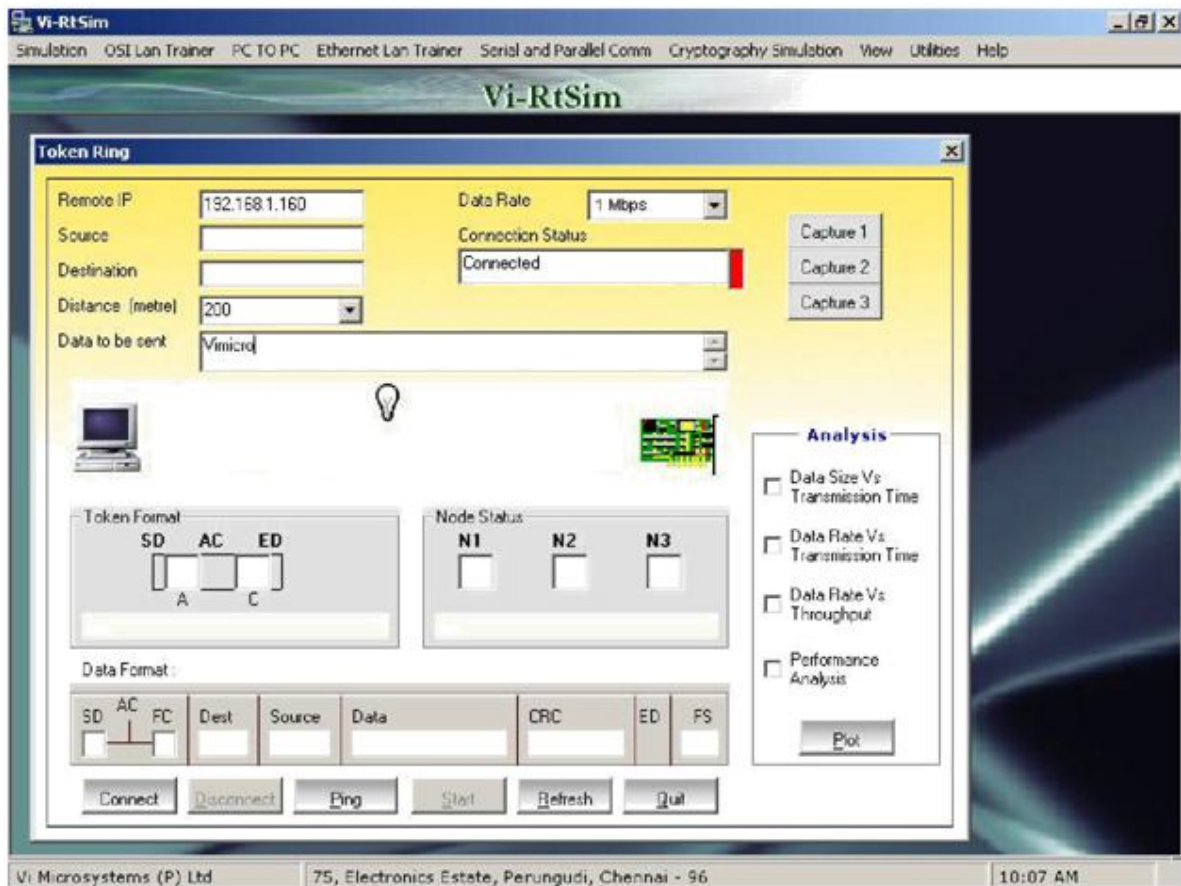From the menu bar, select OSI LAN Trainer ->Token Ring.

Change the Remote IP field, if you want to communicate with other than given IP. Then click on Connect Button to establish connection with remote host. You can edit Data Rate to change data flow speed. When you click on Start Button, token is circulated. If you want to send data click on any one of the capture buttons like Capture 1, Capture 2 and Capture 3 then enter Destination and Data in floating window. Disconnect Button is used to terminate connection from remote host.

To refresh the connection click on Refresh Button. Ping Button is used to check whether the connection is established or not. To close Dialog window click on Quit Button.

 To capture token in node1, press Capture 1 Button.
 To capture token in node2, press Capture 2 Button.
 To capture token in node3, press Capture 3 Button.

RESULT
Thus the Token Ring protocol analysed and the performance was studied.

Ex No:3(b)
Date:
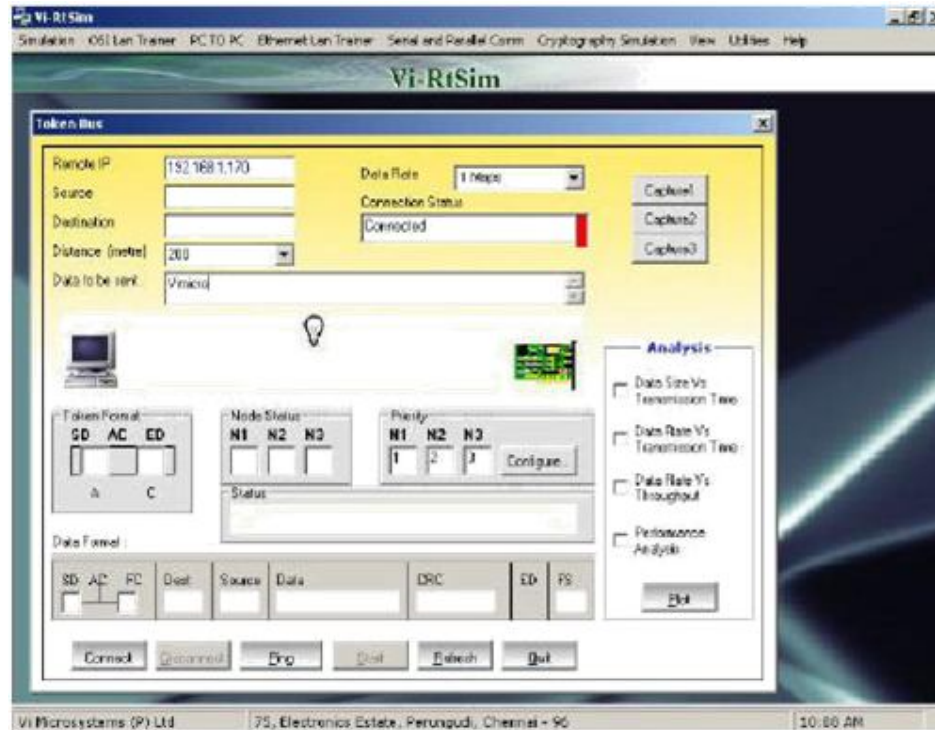
IMPLEMENTATION OF TOKEN BUS PROTOCOL

AIM
To study the Token Bus protocol and analyse the performance of Token Ring protocol.

APPARATUS REQUIRED

> PC with Vi-Rtsim
> OSI LAN TRAINER
> RS 232 ETHERNET CABLE

PROCEDURE
From the menu bar, select OSI LAN Trainer ->Token Bus.

Change the Remote IP field, if you want to communicate with other than given IP. Then click on Connect Button to establish connection with remote host. You can edit Data Rate to change data flow speed. Then click on Configure Button, to set priority. When you click on Start Button, token is circulated. If you want to send data click on any one of the capture buttons like Capture 1, Capture 2 and Capture 3 then enter Destination and Data in floating window. Disconnect Button is used to terminate connection from remote host.

To refresh the connection click on Refresh Button. Ping Button is used to check whether the connection is established or not. To close Dialog window click on Quit Button.

To capture token in node1, press Capture 1 Button.

To capture token in node2, press Capture 2 Button.
To capture token in node3, press Capture 3 Button.

RESULT
Thus the Token Bus protocol analysed and the performance was studied.

Ex No:4
Date:

<u>**WIRELESS LAN PROTOCOLS: TO CREATE SCENARIO AND STUDY THE PERFORMANCE OF NETWORK WITH CSMA / CA PROTOCOL AND COMPARE WITH CSMA/CD PROTOCOLS**</u>

<u>**WIRELESSLANPROTOCOLS(CSMA/CA)**</u>

Aim:To   study   about   the   wireless   LAN   protocol   (CSMA/CA).
Theory:

Wireless networks cannot use CSMA/CD in the MAC sub-layer, since this requires the ability to receive and transmit at the same time – hence the use of CSMA/CA. In a wireless network, much of the sent energy is lost in transmission. The received signal has a very little energy. Therefore, a collision may add only 5 to 10% additional energy. This is not useful for effective collision detection. We need to avoid collision on wireless networks because they cannot be detected. So CSMA/CA was invented for this network.

Requirements:
System installed with ViRtSim software and Xilinx for IMPACT application.
• ViLAN 03 Trainer kit
• Power cable – 1
• Parallel cable – 1
• Serial cable – 1
• LAN cable – 1 (long), 4 – (short)
• Patch cords – 4

Collisions are avoided using 3 methods:
1. Inter-frame space:
o When an idle channel is found, the station does not send immediately. It waits for a period of time called Inter-frame space.
o In CSMA/CA, the IFS can also be used to define the priority of a station of a frame. A station that has shorter IFS has a higher priority.
2. Contention window:
o Amount of time divided into slots. A station that is ready to send chooses a random number of slots as its wait time.
o Station set one time slot for the first time and then double each time the station cannot detect an idle channel after the IFS time.
o This method gives the priority to the station with the longest waiting time.
3. Acknowledgments:
o The data may be corrupted during the transmission. The positive acknowledgment and the time out can help guarantee that the receiver has received the frame.

Exposed node problem:
o If C is transmitting a message to D and B wants to transmit to A, B will find the network to be

busy as B hears C transmitting.

o Even if B would have transmitted to A, it would not have been a problem at A or D.

o CSMA/CA would not allow it to transmit message to A, while the two transmissions could have gone in parallel.
Hidden node problem:
o In case of wireless network it is possible that A is sending a message to B, but C is out of its range and hence while "listening" on the network it will find the network to be free and might try to send packets to B at the same time as A. So there will be collision at B.
o The problem can be looked upon as if A and C are hidden from each other. Hence it is called the "hidden node problem".

Result:

Thus the wireless LAN protocol (CSMA/CA) was studied.

SIMULATION OF CSMA/CA

Aim: To simulate the CSMA/CA protocol using ViRtSim software.

Procedure:

1. Select program ?ViRtSim?Simulation ?CSMA ?CSMA/CA
2. Enter the program in the Algorithm column, save and run it.

Algorithm:

Step 1: Declare a frame variable and assign them the data frame to be transmitted.
Step 2: Initialize the CSMA/CA function
Step3: Nodes keep listening to the channel
Step 4: Send request to send frame from node A to node B
Step 5: Send clear to send frame from node B to node A
Step 6: Send data from node A to node B and sense multiple access.
Step 7: Send acknowledge frame from node B to node A
Step 8: Stop the execution.

Program:

```
include
void main()
{
Frame X;
X="A.R.Engg";

CSMACA_INIT();

CSMACA_START();

NODE_LISTEN();

REQUESTTO_SEND(A,B);

CLEARTO_SEND(B,A);

DATATO_SEND(A,B,X);

ACKNOWLEDGE(B,A);
```

}
Output:
1. Node A sends RTS frame to node B:
2. Node B sends CTS frame to node A:
3. Node A sends data frame to node B:
4. Node B sends ACK frame to node A:

Result:

Thus the wireless LAN (CSMA/CA) protocol was simulated using Vi Rt Sim software.

Ex No:5

Date:

## IMPLEMENTATION AND STUDY OF STOP AND WAIT PROTOCOL

Aim:

To study the Stop and Wait protocol and analyze the performance of Stop and Wait protocol using various parameters like Data Rate, Packet Size etc.

 APPARATUS REQUIRED

> - PC with Vi-Rtsim
> - OSI LAN TRAINER
> - RS 232
> - ETHERNET CABLE

PROCEDURE

From the menu bar, select OSI LAN Trainer ->Protocols ->Stop and Wait. Stop and Wait Dialog Window is opened as follows.
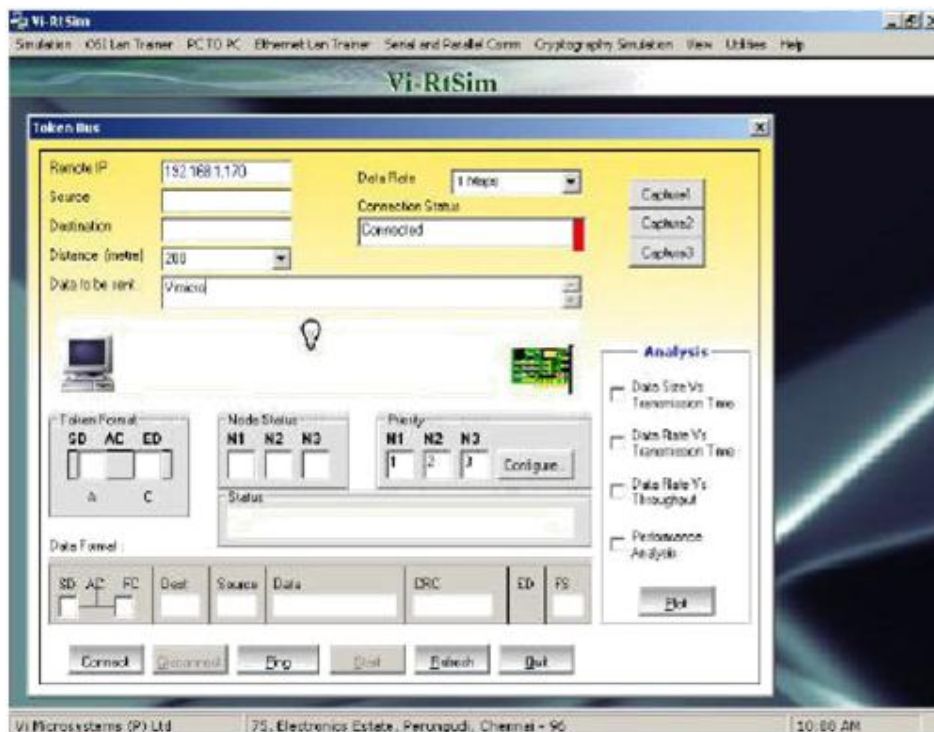
Change the Remote IP field, if you want to communicate with other than given IP. Then click on Connect Button to establish connection with remote host. You can edit Data Rate to change data flow speed. You can change Inter Packet Delay and Packet Size also. If you want to send data, enter data in Data to be sent field, then click on Send Button. Disconnect Button is used to terminate connection from remote host.

Ping Button is used to check whether the connection is established or not. To close Dialog window click on Quit Button.

Note: You can plot various graphs by pressing Plot Button

i)Data Size Vs Transmission Time iii) Data Rate Vs Throughput

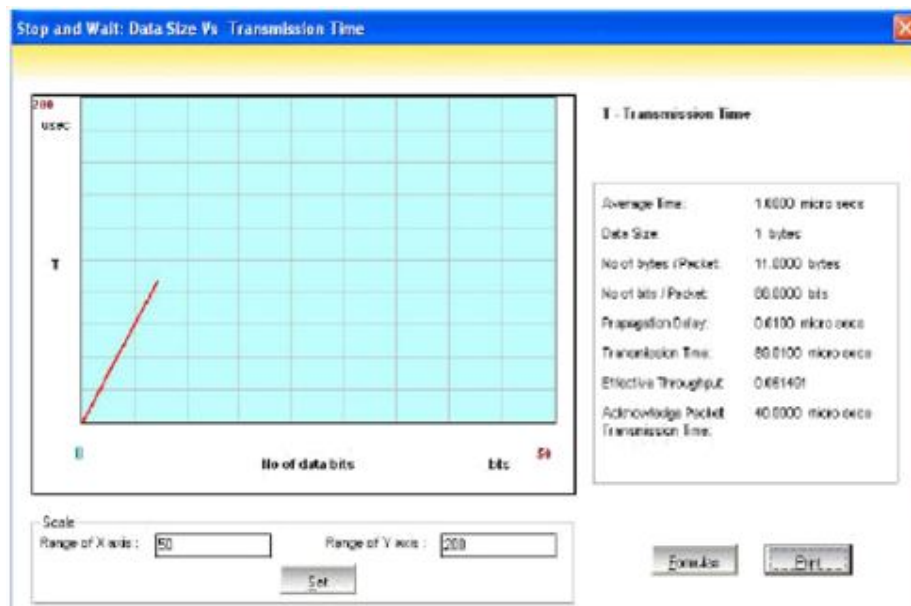Ii) Data Rate Vs Transmission Time iv) Performance Analysis

DATA SIZE Vs TRANSMISSION TIME

We will keep the following parameters constant

        Data Rate : 1 Mbps

        Packet Size : 1 Byte

We will vary the no. of packets from 1 to 7 in step 1 and corresponding time taken for the data transfer will be noted and a plot of Data Size Vs Transmission Time can be viewed and printout can be taken.
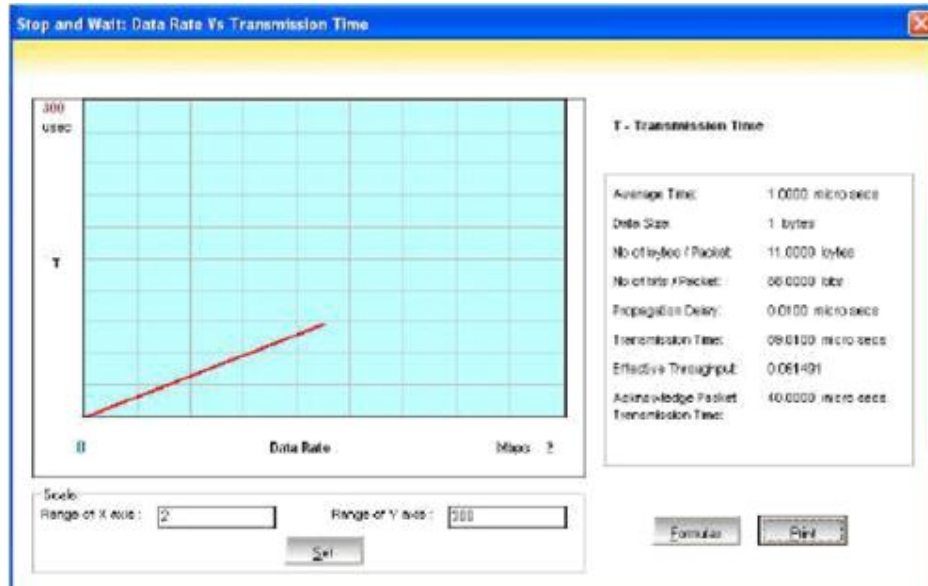

DATA RATE Vs TRANSMISSION TIME

We will keep the following parameters constant

        Data Rate : 1 Mbps

        Packet Size : 1 Byte

We will vary the no. of packets from 1 to 7 in step 1 and corresponding time taken for the data transfer will be noted and a plot of Data Rate Vs Transmission Time can be viewed and printout can be taken.
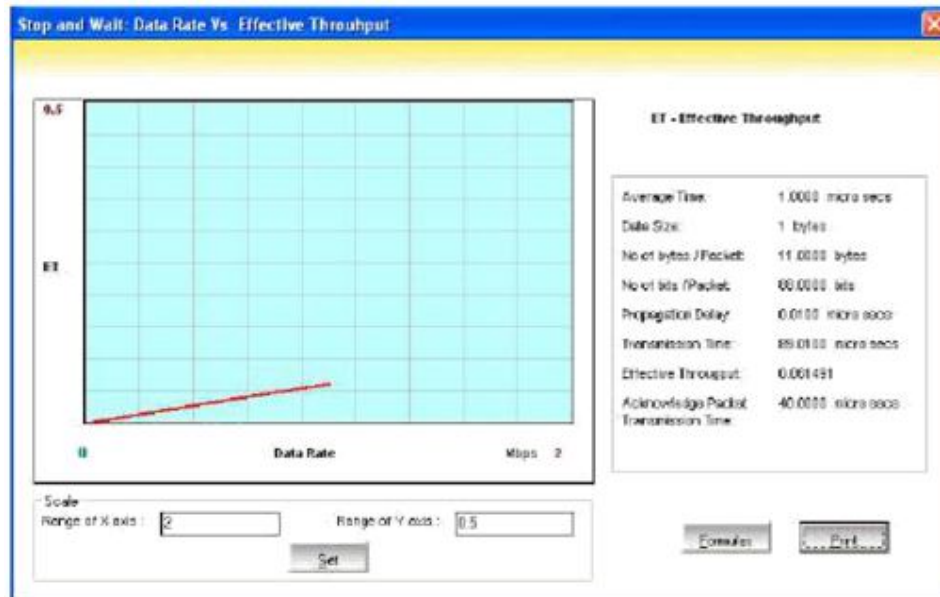

DATA RATE Vs THROUGHPUT

We will keep the following parameters constant

Data Rate : 1 Mbps

Packet Size : 1 Byte

We will vary the no. of packets from 1 to 7 in step 1 and corresponding effective throughput for the data transfer will be noted and a plot of Data Rate Vs Throughput can be viewed and printout can be taken.
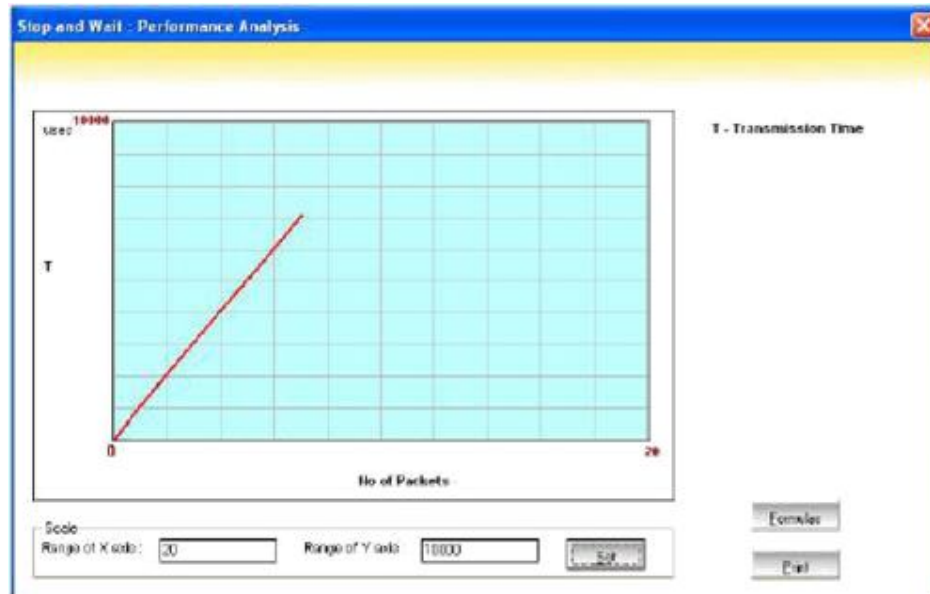
Stop and Wait: Data Rate Vs Effective Throughput

ET - Effective Throughput

Average Time:	1.0000 micro secs
Data Size:	1 bytes
No of bytes / Packet:	11.0000 bytes
No of bits / Packet:	88.0000 bits
Propagation Delay:	0.0100 micro secs
Transmission Time:	89.0100 micro secs
Effective Throughput:	0.001491
Acknowledge Packet Transmission Time:	40.0000 micro secs

Scale
Range of X axis : 2   Range of Y axis : 0.5

PERFORMANCE ANALYSIS

i. We will keep the following parameters constant

Data Rate : 8 Kbps

Packet Size : 1 Byte

We will vary the no. of packets from 1 to 7 in step 1 and corresponding time taken for the data transfer will be noted and a plot of No. of Packets Vs Time can be viewed and printout can be taken.

Stop and Wait : Performance Analysis

T - Transmission Time

No of Packets

Scale
Range of X scale: 20   Range of Y scale: 10000   Set

Formulas

Print

RESULT:

Thus the Stop and Wait protocol and analyze the performance of Stop and Wait protocol using various parameters like Data Rate, Packet Size etc was studied.

Ex No:6
Date:

IMPLEMENTATION AND STUDY OF GOBACK-N AND SELECTIVE REPEAT PROTOCOLS
AIM:

To study the Go Back n protocol and analyze the performance of Go Back n protocol using various parameters like Data Rate, Packet Size etc.

APPARATUS REQUIRED
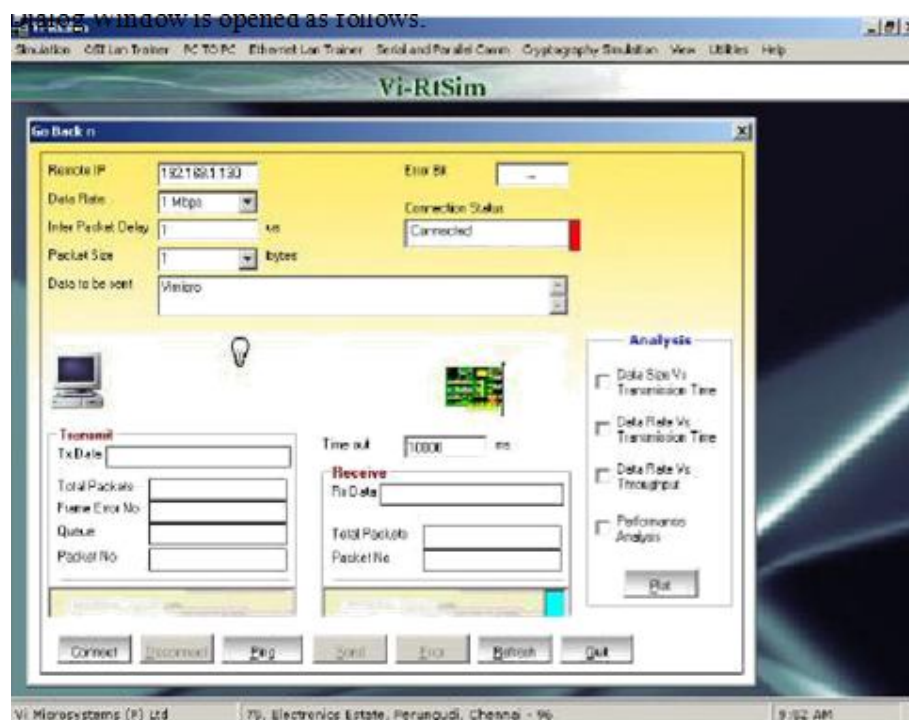
PC with Vi-Rtsim

OSI LAN TRAINER

RS 232

ETHERNET CABLE

PROCEDURE

GO BACK N

From the menu bar, select OSI LAN Trainer ->Protocols ->Go Back N.

Go Back n Dialog Window is opened as follows.

Change the Remote IP field, if you want to communicate with other than given IP. Then click on Connect Button to establish connection with remote host. You can edit Data Rate to change data flow speed. You can change Inter Packet Delay and Packet Size also. If you want to send data, enter data in Data to be sent field, then click on Error to generate manual error and click Send Button. Disconnect Button is used to terminate connection from remote host.

To generate error remove Error Bit. To refresh the connection click on Refresh Button. Ping Button is used to check whether the connection is established or not. To close Dialog window click on Quit Button.

Note:

You can plot various graphs by pressing Plot Button

               i) Data Size Vs Transmission Time iii) Data Rate Vs Throughput

               ii) Data Rate Vs Transmission Time iv) Performance Analysis

RESULT:

Thus the Go Back n protocol and analyze the performance of Go Back n protocol using various parameters like Data Rate, Packet Size etc was studied.

Ex No:7

Date:

IMPLEMENTATION OF DISTANCE VECTOR ROUTING ALGORITHM
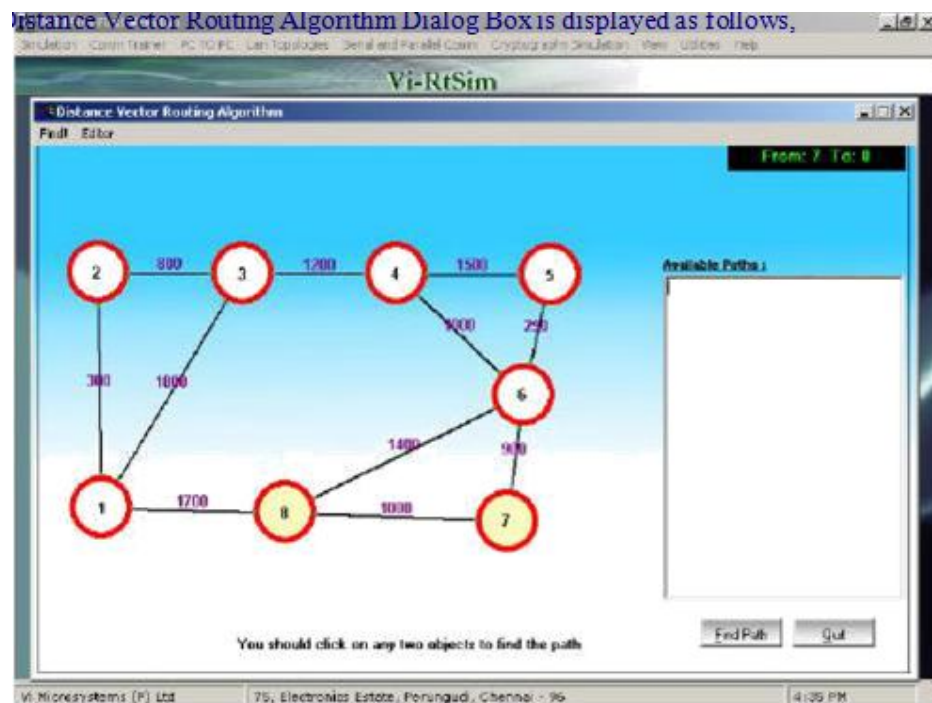
AIM:
To study and simulate Distance Vector Routing Algorithm.
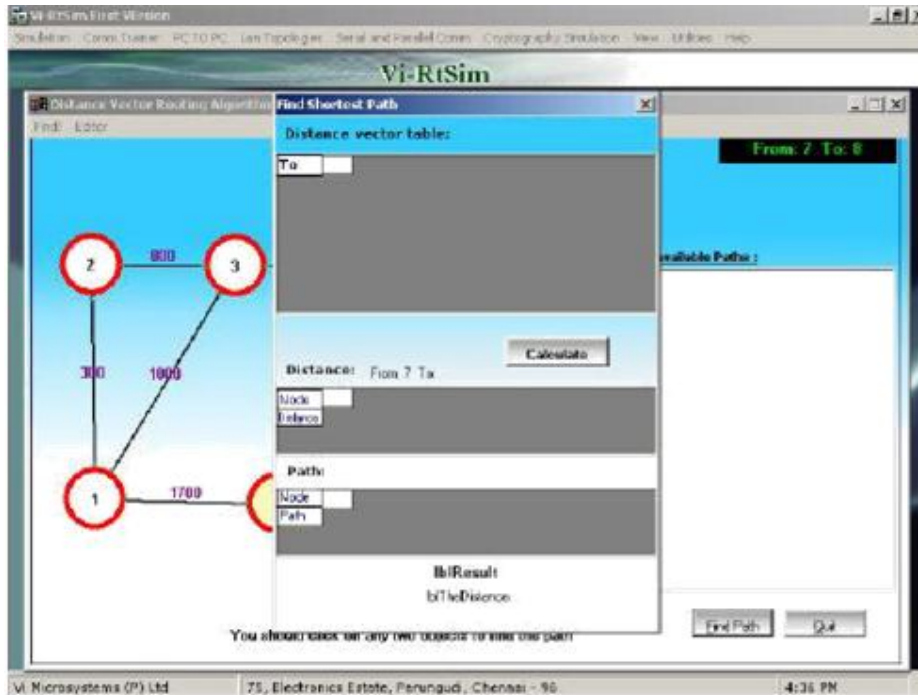
APPARATUS REQUIRED

      PC with Vi-Rtsim

PROCEDURE:
From the menu bar, select Simulation ->Routing Algorithm->Distance Vector Routing. Distance

Vector Routing Algorithm Dialog Box is displayed as follows,

To find shortest path between two nodes, you should click on two nodes, then

click on Find Path Button. Find Shortest Path Dialog Box is opened.

Note:
* You can add or delete a router and line during run time using Editor menu.

RESULT:
Thus the Distance Vector Routing Algorithm was studied and also simulated.

Ex No: 8
Date:

IMPLEMENTATION OF LINK STATE ROUTING ALGORITHM

AIM

To study and simulate Link State Routing Algorithm.
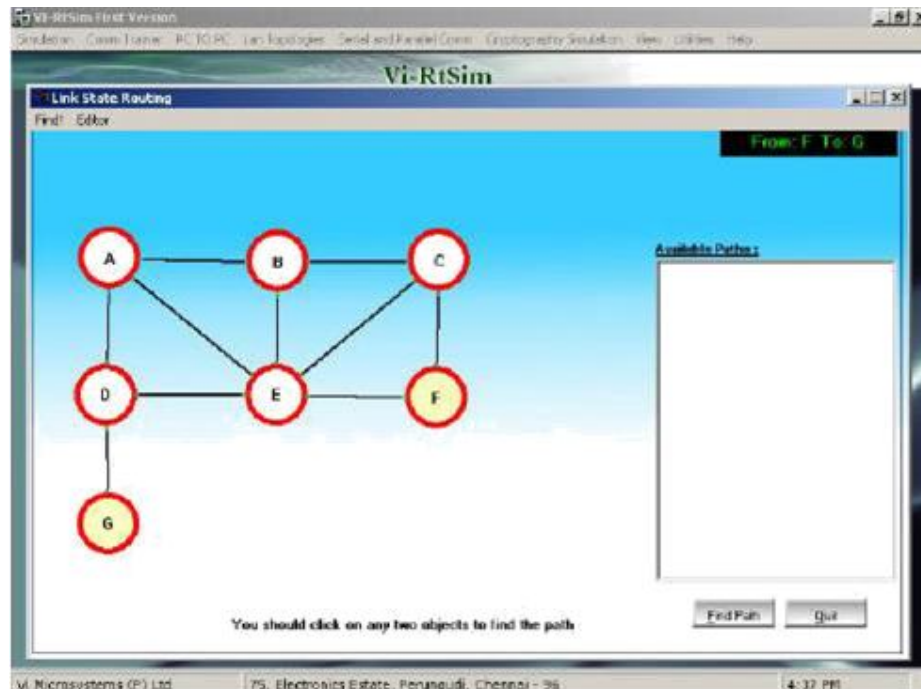
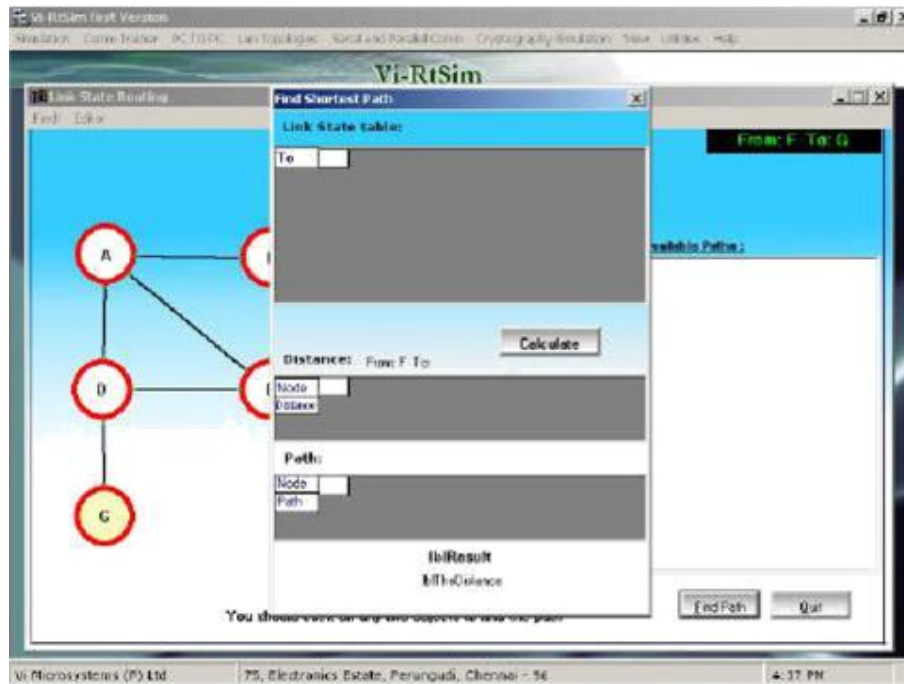## APPARATUS REQUIRED

PC with Vi-Rtsim

PROCEDURE

From the menu bar, select Simulation ->Routing Algorithm->Link State Routing.

Link State Routing Dialog Box is displayed as follows,

To find shortest path between two nodes, you should click on two nodes, then click on Find Path Button.Find Shortest Path Dialog Box is opened.

In Find Shortest Path Dialog Box, click on Calculate Button. Then Shortest path is calculated.
Note:
You can add or delete a router and line during run time using Editor menu.

RESULT
Thus the Link State Routing Algorithm was studied and also simulated.

Ex No: 9
Date:

IMPLEMENTATION OF DATA ENCRYPTION AND DECRYPTION

Aim: To send the data from the source to destination securely using encryption and decryption.

APPARATUS REQUIRED

- ➢ Two PC with Vi-Rtsim
- ➢ RS 232
- ➢ Serial parallel communication kit
- ➢ Patch chords

Theory:

Network security involves four aspects: privacy, message authentication, message integrity and non-repudiation. Privacy means that the sender and the receiver expect confidentiality. The transmitted message should make sense only to the intended receiver. Authentication means that the receiver is sure of the sender's identity and that an imposter has not sent the message. Integrity means that the data must arrive at the receiver exactly as it was sent. Non-repudiation means that a receiver must be able to prove that a received message came from a specific sender. Privacy is achieved by encrypting the message at the sender and decrypting the received message at the receiver.

• The data to be encrypted at the sender site is called plaintext/clear text.
• The encrypted data is called cipher text.

Requirements:
• 2 Systems installed with ViRtSim software.
• Serial-Parallel communication kit
• Patch cords - 2
• Serial cable – 2
• LAN cable – 1
Connection:
Procedure:
Transmitter:
1. Choose start ?all programs ?ViRtSim
2. Choose serial and parallel communication ?RS232 data security ?data encryption
3. Connect the transmitter by pressing "connect"in the "Settings" tab and enter the data to be sent by pressing the "communication" tab.
4. If "send" button is pressed, another window will open to enter the password. Enter the Password, so that the ASCII values and the Cipher text will be created.Press "send" button again.

Receiver:

1. Choose start ?all programs ?ViRtSim
2. Choose serial and parallel communication ?RS232 data security ?data decryption
3. Connect the receiver by pressing "connect"in the "Settings" tab and enter the data to be sent by pressing the "communication" tab.
4. Press the Decrypt button. It asks to enter the password. If correct password is entered, the data sent by the sender can be viewed correctly. If not, the plain text will not be clear.
5. Check the original message.

Output:

Transmitter side:

1. Select "Settings"tab, click "connect" button. If connected (see left corner of the PC to PC Communication window), go to step 2.
2. Enter data to be encrypted and click "send" button. A separate window will open for the password. Enter the password, click "OK".
3. The ASCII values and the cipher text will be displayed and press "send".

Receiver side:

1. Connect the receiver:
2. Received Data:
3. Decrypt the data:
4. Original data received:
5. Wrong password entered:
6. Wrong clear text decrypted

RESULT:

Thus the encrypted data was transmitted from the sender side and decrypted at the receiver side.

Ex No: 10

Date:

TRANSFER OF FILE FROM PC TO PC USING WINDOWS/UNIX SOCKET PROGRAMMING

Aim: To communicate between two systems using PC to PC menu from ViRtSim software.

APPARATUS REQUIRED

- ➤ Two PC with Vi-Rtsim
- ➤ RS 232
- ➤ Serial parallel communication kit
- ➤ Patch chords

PROCEDURE:

Transmitter side:

1. Open ViRtSim ? PC to PC ? File Transfer ? Transmitter
2. Give the receiver's IP address and click "Connect"
3. After it is connected, select a file to transmit and click "Send File"

Receiver side:

1. Open ViRtSim ? PC to PC ? File Transfer ? Receiver
2. Connection is established with the receiver after the transmitter clicks Connect.
3. When the transmitter sends a file, the receiver gets the file. The received file can be saved in the receiver side.

Output:

Transmitter Side:

1. Select PC to PC ? File transfer ? transmitter
2. Enter the Remote IP address
3. Click Connect. It shows as "I'm Connected"
4. Select the file and send

Receiver Side

1. Select PC to PC ? File transfer ? receiver
2. Transmitter is listening to get connected to the client
3. Receiver is connected
4. File is received and it can be saved

RESULT:

Thus the file is transferred from one PC to another.