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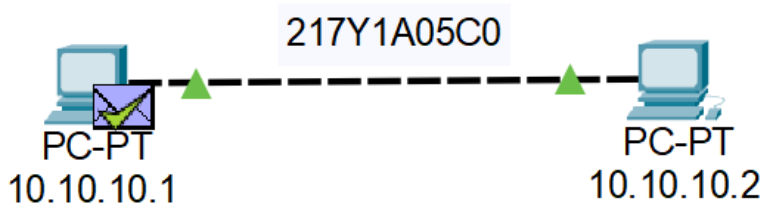
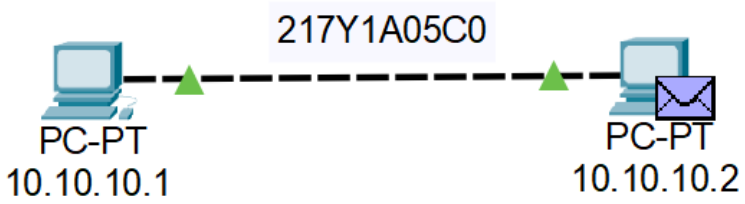
CISCO PACKET TRACER

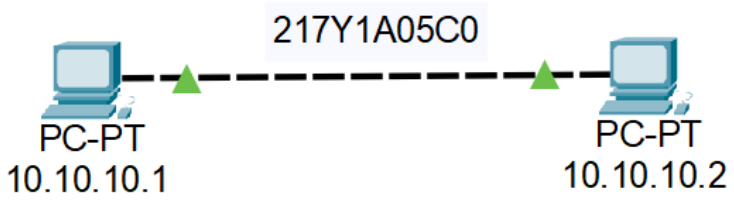
The Cisco Packet Tracer provides a network simulation to practice simple and complex networks. It Allows us to add or remove simulated network devices, with a Command line interface and a drag and drop user interface. It is preferable to test any protocols on Cisco Packet Tracer before implementing them.

Step 1: Setup two PC's and allocate unique IP address to each PC
Step 2: Connect two PCs with the help of medium (copper crossover connection)
Step 3: Send a message from PC1 to PC2 and check the simulation.
Step 4: The message sent by PCI is received by PC2 and acknowledgement is returned to PC1

Output:







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DATA COMMUNICATION THROUGH SWITCH

Consider a 5PC environment which is connected to a common switch and set IP addresses to all end devices.

The data can be transmitted from one PC to another with the help of a switch. For Instance, the data transmission between PCI (60.60.0.1) and PC3(60.60.0.3) can be visualized in the following manner with the involvement of PDU (Protocol Data Unit).

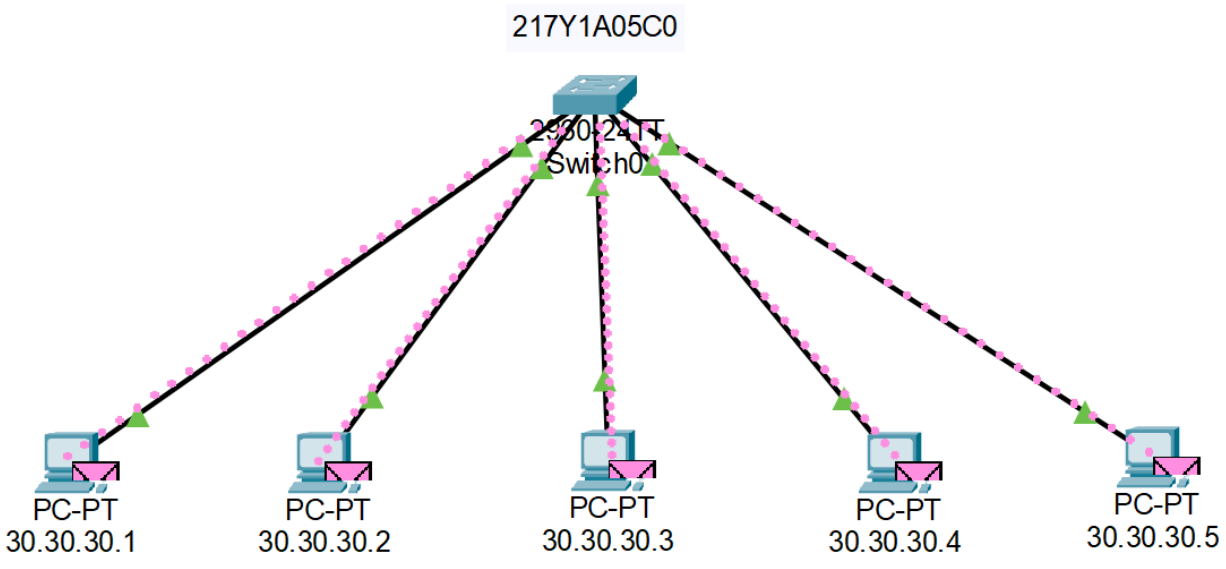
Steps:

1. Message Transmission from PC1 to Switch
2. Message transmission from Switch to PC5. Now, the data is completely received by PC5
3. PC5 sends acknowledgement to PCI through the Switch. Acknowledgement from PC5 to Switch. Acknowledgement is sent from Switch to PC1

We can Confirm the Data Transmission by pinging the IP addresses in one PC in another PC's Command Prompt. Pinging PC5 addresses in PC1's Command Prompt.

It shows that 4 packets of data were sent to PC5(Transmitted Data). Similarly, PC1 IP addresses are pinged in Command Prompt of PC5.

Output:



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DATA COMMUNICATION THROUGH HUB

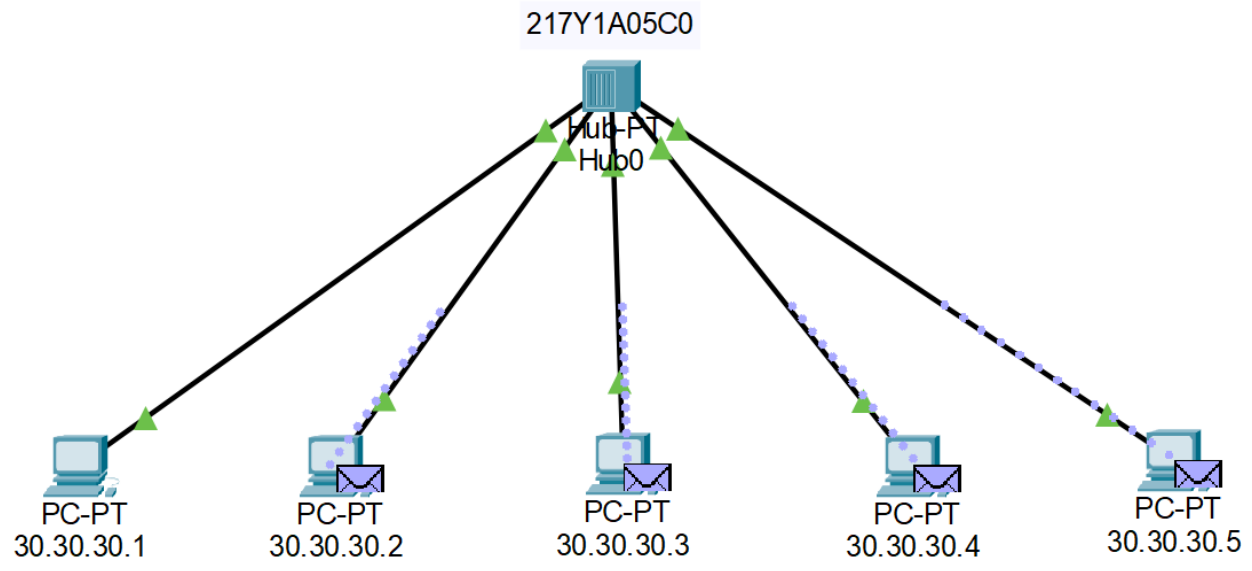
HUB is a networking device that operates on the physical layer i.e, 1st layer of OSI model.Hub connected to multiple devices to itself that sends and receives data through it.
Consider 4 PC environments which are connected to HUB and we will be setting up the IP addresses of all 4 PCs which are connected to it.

Steps:

1. Now message will be transmitted from source PC1(60.60.60.1) to the receiver PC which is PC3 consisting of IP address of (60.60.60.3) through the help of HUB is one who receives the message first.
2. From the HUB message which is transmitted to all the PCs connected to the HUB.
3. So, only PC3 will accept it and all others will reject the data.
4. PC3 will send acknowledgement to PC1 about accepting the data. Firstly it will go through the HUB then HUB will send that acknowledgement message to the PC1.
5. We are going to confirm the transmission of the data by pinging the IP address of PC3 to PC1 in its command prompt.

6. As well as, we are going to re verify through the PC3 whether the acknowledgement is sent to PC1 by pinging the PC1 address in PC3 command Prompt.

Output:



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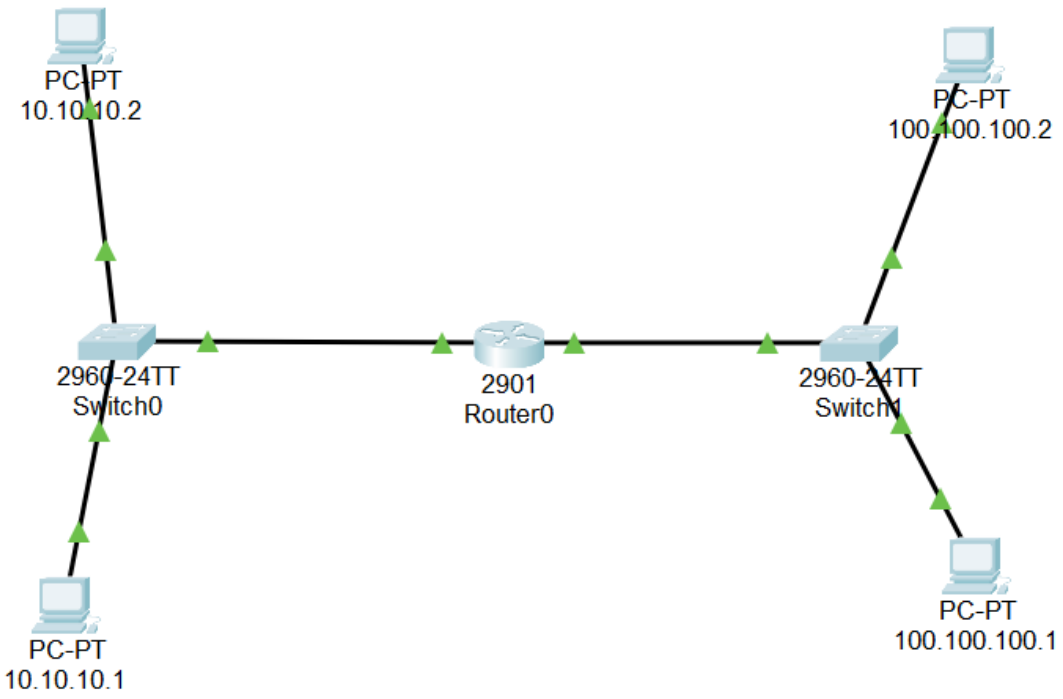
AIM: Write a C program to implement Data Communication through router.

Data Communication through router (Different IP network connectivity)

Consider a router which is connected to two switches which are again connected to two PCs each.Set the IP addresses of either sides PCs along with the default gateway being the IP address of the opposite switch.
For instance,the message can be sent from PC1(40.40.40.1)to PC4(108.108.108.2) in the following way:
Step 1: Data is transmitted from PC1 to Switch1 which is then passed to Switch2 through the router.
Step 2: It is transmitted to both PCs of switch2 but it is rejected by PC3(108.108.108.1) and accepted by PC4(108.108.108.2).
Step 3: Now,PC4 receives data and acknowledgement is sent to PC1 through switches and router.
Step 4: Finally,the acknowledgement is received by PC1.
Step 5: The data transmission can be confirmed by pinging the IP address of destination PC ON source PC command Prompt.

Output:



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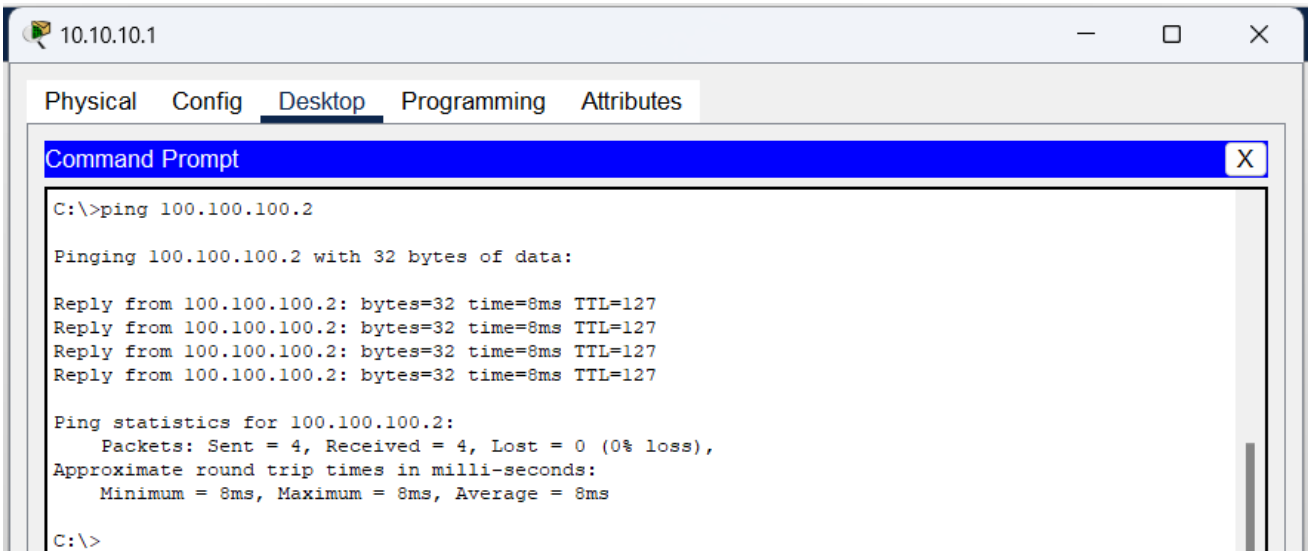

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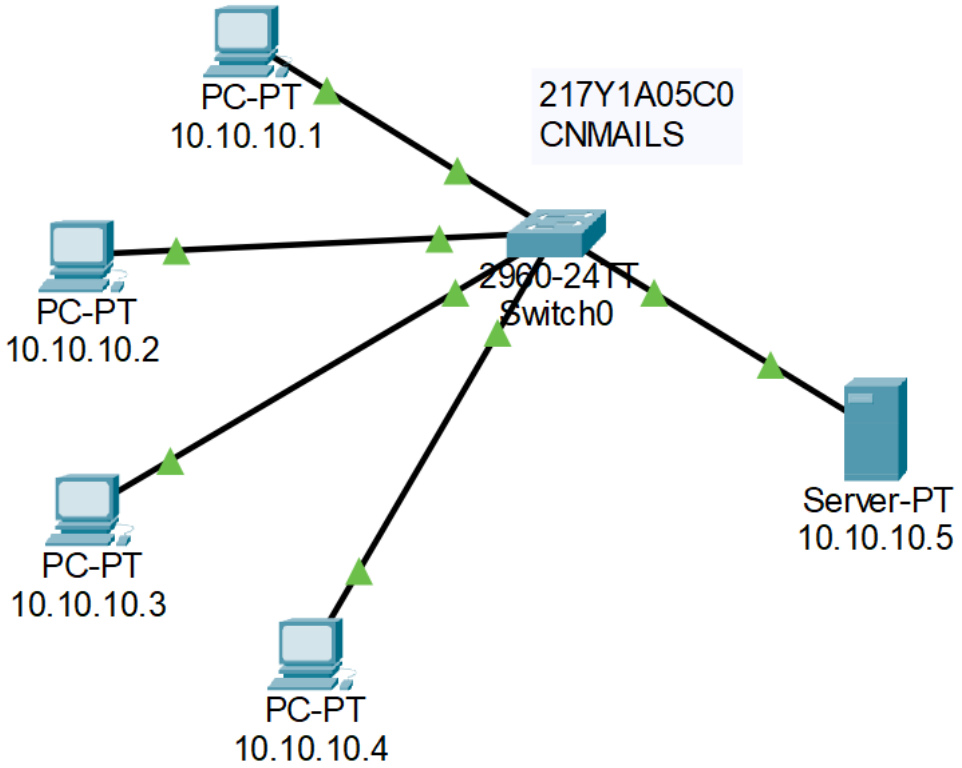
IMPLEMENTING HTTP , E-MAIL AND FTP

Steps:

1. Take 4 pc's and connect them to the switch of type 2960-24 TT and connect it to the server with the help of a fastethernet connection.
2. Now name the Pc's with their IP configuration.
3. Select the HTTP in the services of the server to edit the index.html to display the data in any of the pc's web options.
4. Select the domain in the server to send mail from one PC to the other
5. Then create a mail with username and password and also create another PC
6. Select the domain in the server to send mail from one PC to the other PC.



7.
8. Then create a mail with username and password and also create it on another PC. Then send mail from one pc to another.
9. We can confirm the data transmission by checking the sent success and receiving success in the corresponding mails of the PC.
10. Create a text file in the server with any name and save it.
11. Now ping in the command prompt of one PC to understand the

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12. transmission of a file in any PC.If we got the text file directory and its name at the end, then the file & Successfully shared and sent.
13. The txt File will be appear in the directory as below