Name: Muhammad Sherjeel Akhtar

Roll No: 20p-0101

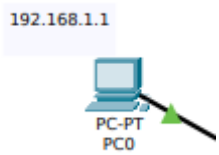
Subject: Computer Network Lab

Task No: 3

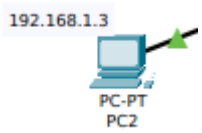
Submitted **T**o **R**espect Ma'am: **Miss Hurmat Hidayat**

Section: B

Task 1: Establish Communication of four devices using Switch.
Answer:
Step 1: Place 4 Pc's and assign them IP Addresses.
PC 0:



PC 2:



PC 1:

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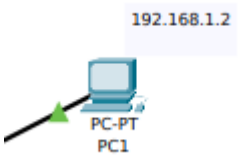

PC 3:

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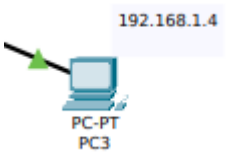
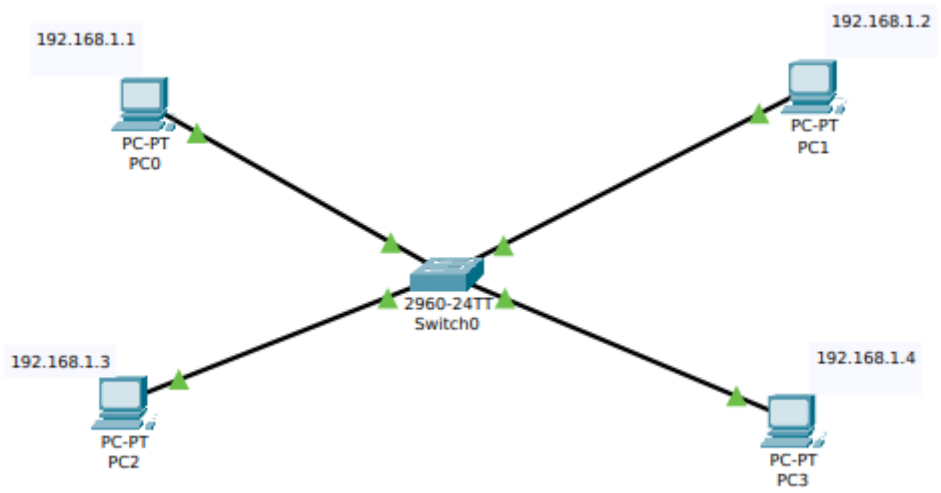
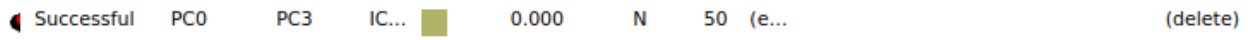


Step 2: Place a switch in the centre and connect all four pc's with the switch using straight copper through cable.



Step 3: Send a packet from PC 0 to PC 3 in order to check whether the connection is successful or not.



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In the result you can see that our connection is successful.

Task 2: Performing a Communication through multiple Switches.

Answer:

Step 1: Place four PC's

Step 2: Assign them IP Addresses.

Step 3: Place two switches in the center of four PC's in a horizontal way.

Step 4: Connect two PC's from the left side to one switch.

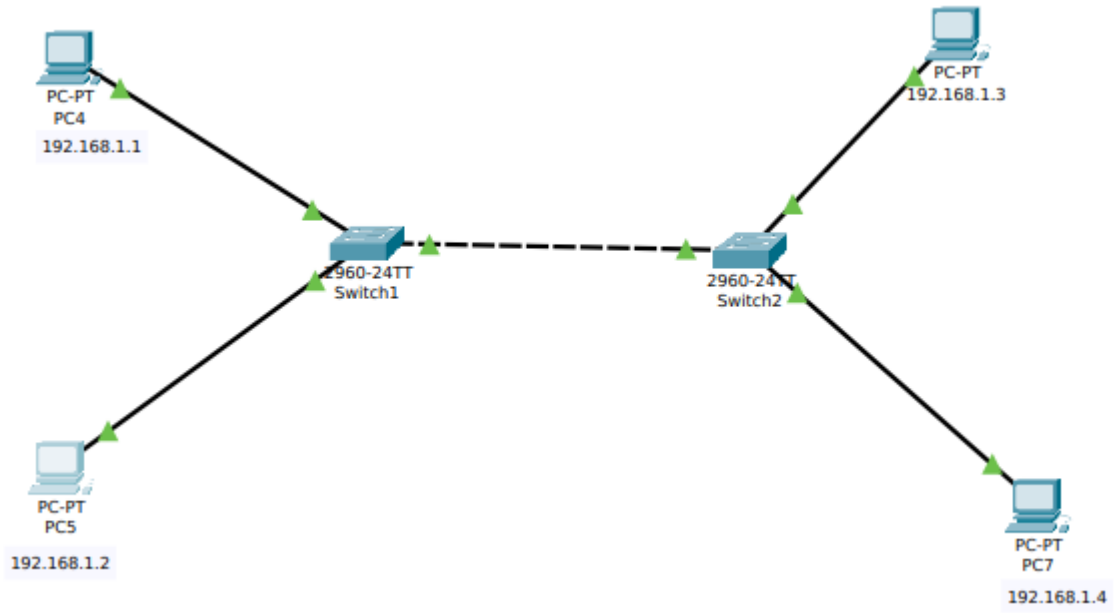
Step 5: Connect two PC's from the right side to the other switch.

Step 6: Connect both of the switches using Cross Over Cable.

Step 7: Send Packet between two computers.

Step 8: See the results in the Real time Window.

Demonstration:



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Result:

Task 2: Testing the connection b/w two switches by assigning two different IP domains to the respective PC's.

Answer:

Step 1: Place four PC's

Step 2: Assign them IP Addresses.

PC4:192.168.1.1

PC5:192.168.1.2

PC6:192.168.2.3

PC7:192.168.2.4

Step 3: Place two switches in the center of four PC's in a horizontal way.

Step 4: Connect two PC's from the left side to one switch.

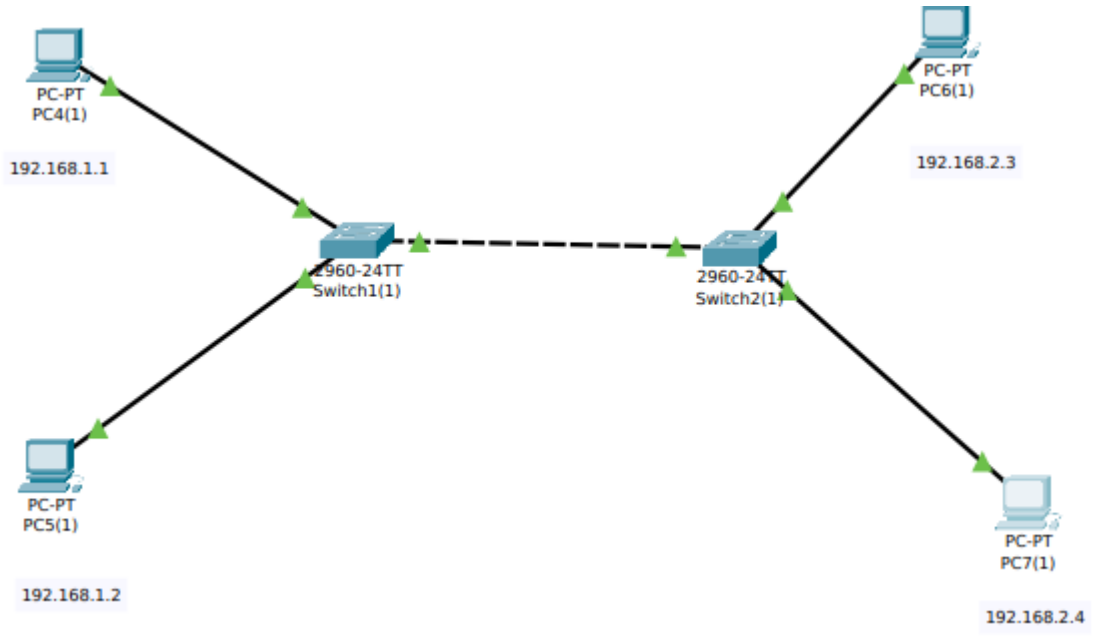
Step 5: Connect two PC's from the right side to the other switch.

Step 6: Connect both of the switches using Cross Over Cable.

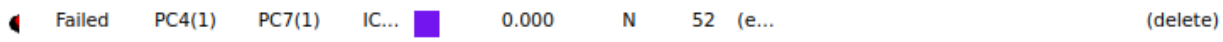
Step 7: Send Packet between two computers.

Step 8: See the results in the Real time Window.

Demonstration:



Result:



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The test will fail because of the different Ranges between the IP Addresses.

Task 3: Establish Connection Between Router and 2 Switches And Connect The Switches With The PC's.

Answer:

Step 1: Place a Router.

Step 2: Connect two switches with the routers.

Step 3: Connect two PC's with the left router and assign them IP.

Step 4: Connect two PC's with the right router and assign them IP.

Step 5: Set the IP in the Router for both of the connections.

First Connection: 192.168.1.10

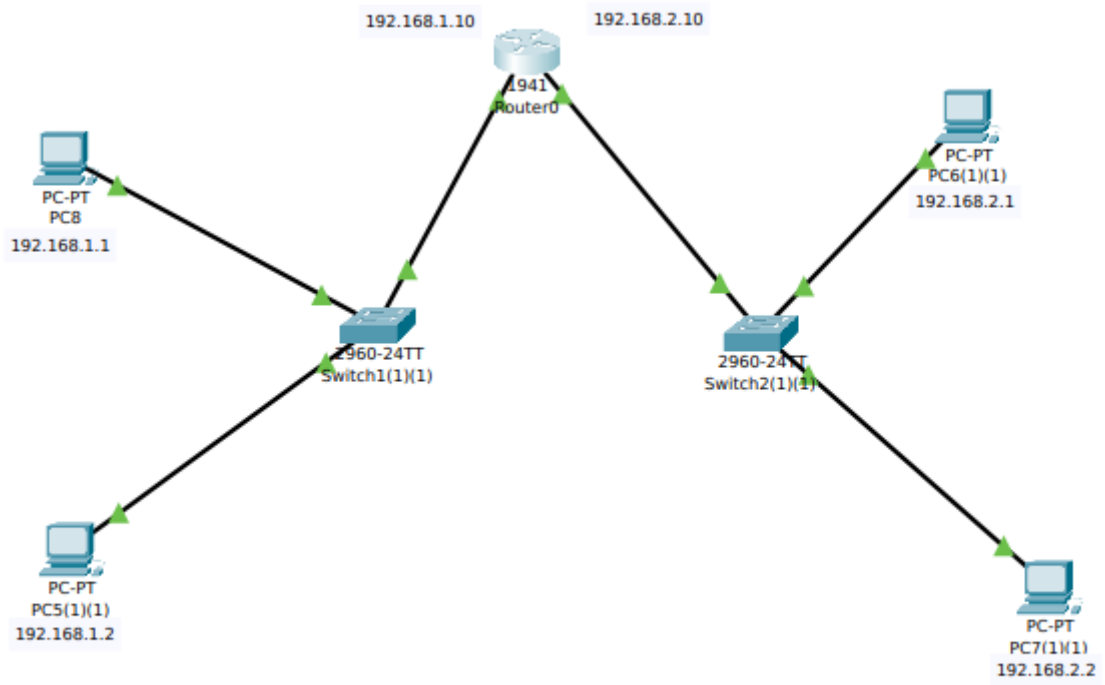
Second Connection: 192.168.2.10

Step 6: Set 192.168.1.10 as the Default Gateway for the left switch PC's.

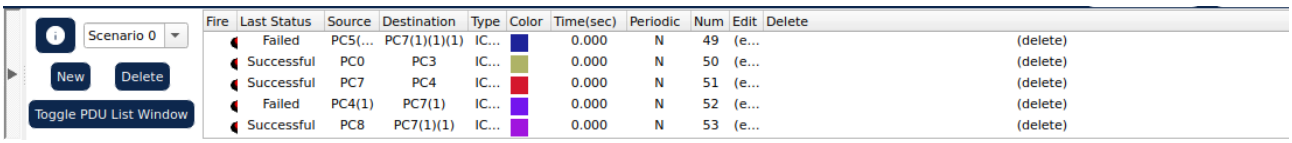
Step 7: Set 192.168.2.10 as the Default Gateway for the right switch PC's.

Step 8: Send Packets from between the PC's and demonstrate the results.

Demonstration:



Result:



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Task 4: Test The Static Routing Between 2 Routers.

Answer:

Step 1: Place two routers horizontally.

Step 2: Place two switches and connect one with each router separately.

Step 3: Connect two End PC's on both sides.

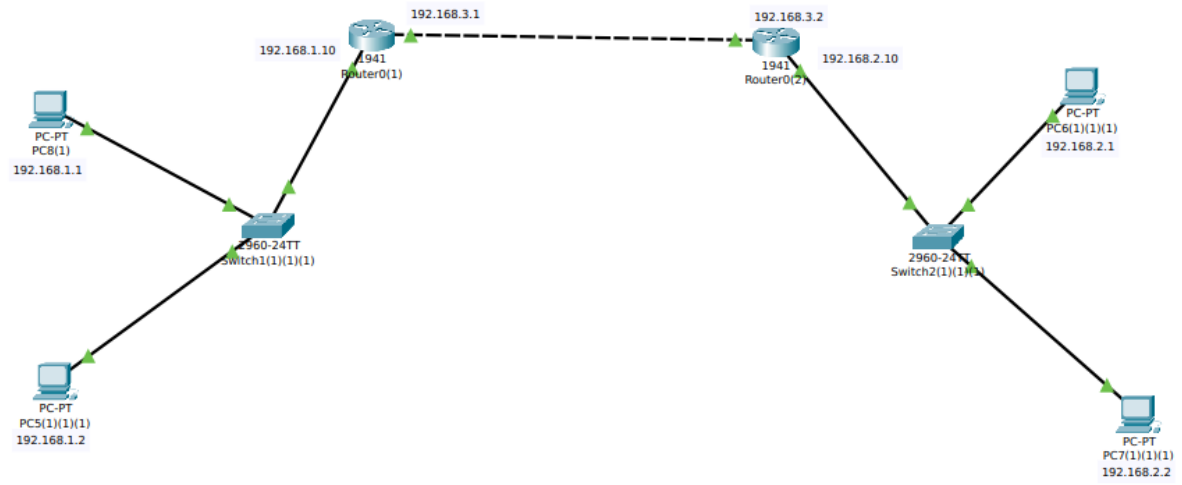
Step 4: Assign the IP to the router.

Step 5: Assign the IP to the End PC's.

Step 6: Set the default Gateway on PC's.

Step 7: Send the Packet between the sides.

Demonstration:



Result:

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Task 5: Static Routing Between 3 Routers.

Answer:

Step 1: In this we now have 3 routers having a static connection between them so we follow the same
procedure of connecting them and now since we have a third router and switch connected to the pc.

Step 2: We assign them the IP address of 192.168.3.1 and 192.168.3.2 with a gateway of 192.168.3.10 so now
we add two static connection in all the 3 routers so first we use router 0

Step 3: Over there we add a staticconnection from pc 1 to pc 3 so means the packet will hop to router 2 and send that packet and have to return back to pc 1 and the second static address would be for pc 5 so router 1 will hop to router 3 and we will write the same connections for router 2 and router 3 router 2 will send packet back to router 1
and router 3 and router will send packet back to router 2 and router 1

Demonstration:

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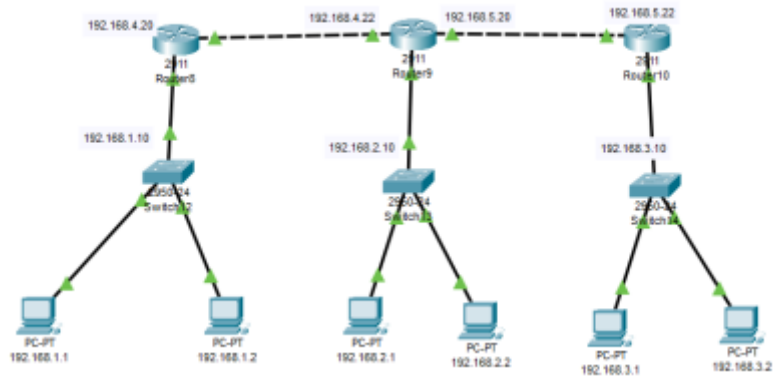
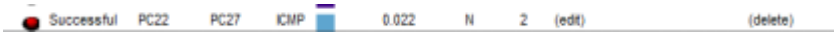

192.168.4.20
192.168.4.22
192.168.5.20
192.168.5.22
192.168.1.10
192.168.2.10
192.168.3.10
PC-PT
192.168.1.1
PC-PT
192.168.1.2
PC-PT
192.168.2.1
PC-PT
192.168.2.2
PC-PT
192.168.3.1
PC-PT
192.168.3.2

Result:


Successful PC22 PC27 ICMP 0.022 N 2 (edit) (delete)