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COURSE-MCA2-A  
SECTION - A  
UNI. ROLL NO. - 2001094  
SUBJECT - COMPUTER NETWORKS LAB  
SUB CODE - TMC 203

Q:1. There is an organization A with multiple departments. Design a network for the HR department and the size of the department is 10 users. Also, show the communication between user number 1 and user number 5 of the network. (7 Marks)

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Ans-1 Problem Statement - Design a network for HR department that has 10 users and show communication between user 1 and 5 of network.

Objective - To understand connection between PC's.

Description -

Step 1:- Take 10 PC's from End devices.

Step 2:- Take a switch and a Router.

Step 3:- ~~Take~~ Take Copper-Straight-through cable and connect all PC's with switch using it.

Step 4:- Connect Router to switch using Copper-straight-through cable.

Step 5:- Configuring Router:- Go to Router → Config tab → Fast Ethernet 0/0 → Port Status should be ON → set IP 192.168.0.1 → check subnet mask.

Step 6:- Configuring PC's

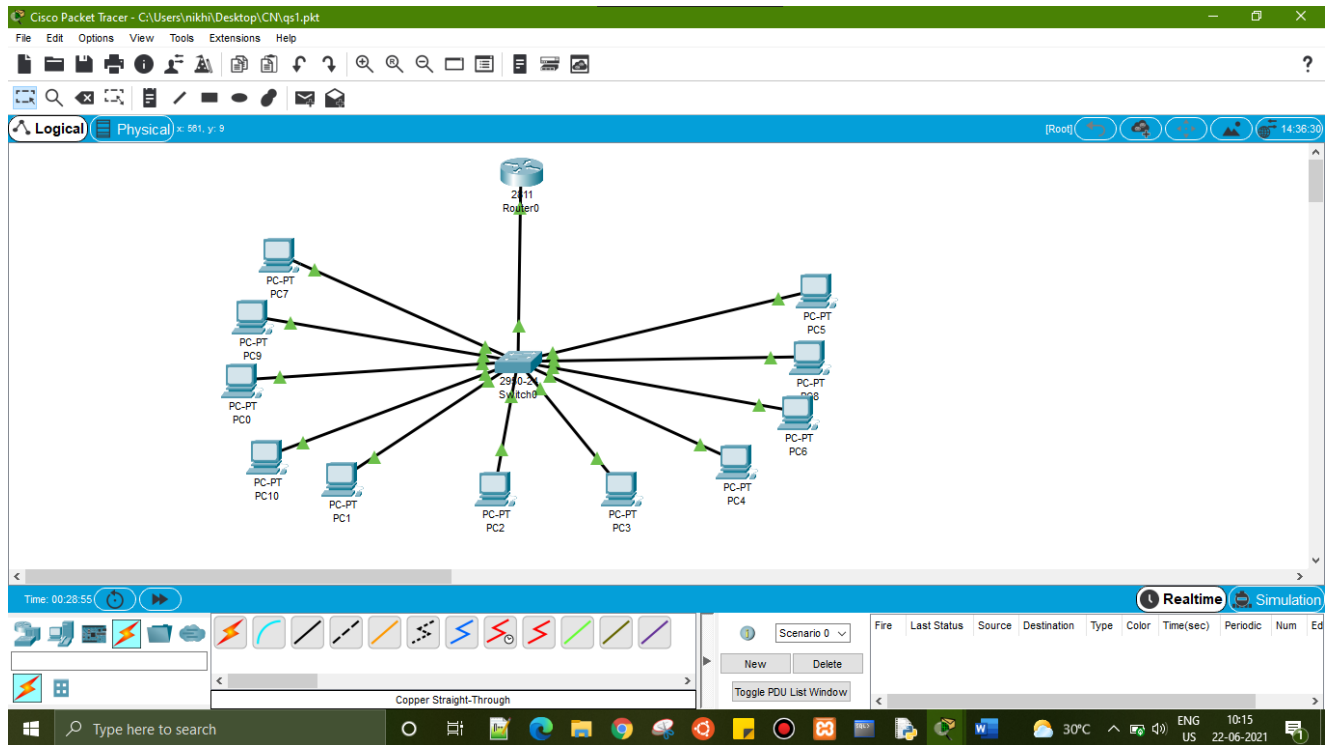
Go to PC 0 → Desktop → IP → DHCP ☑ → It will automatically assign IP to PC. → DHCP request successful.

Step 7:- Follow step 6 for all 10 PC's.

Step 8:- Checking Connection

Go to PC 1 → Desktop → Command Prompt → → ping 192.168.0.5 (IP of 5<sup>th</sup> PC) → It will connect.

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**CONFIGURING ROUTER**

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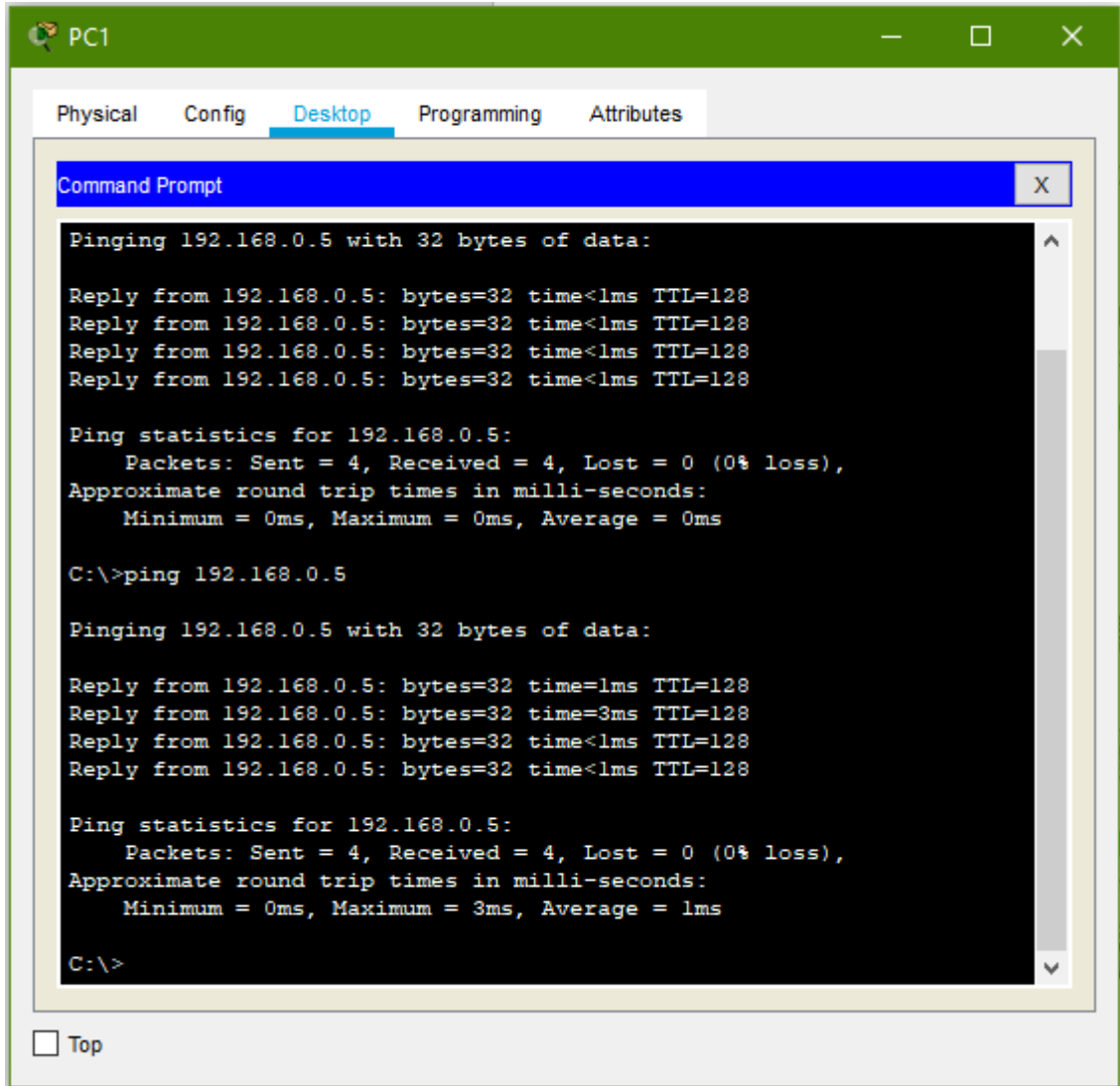
The screenshot shows the configuration window for Router0. The 'Config' tab is selected, and the 'FastEthernet0/0' interface is chosen from the left-hand menu. The interface settings are as follows:

FastEthernet0/0	
Port Status	<input checked="" type="checkbox"/> On
Bandwidth	<input checked="" type="radio"/> 100 Mbps <input type="radio"/> 10 Mbps <input checked="" type="checkbox"/> Auto
Duplex	<input checked="" type="radio"/> Half Duplex <input type="radio"/> Full Duplex <input checked="" type="checkbox"/> Auto
MAC Address	0030.F259.2101
IP Configuration	
IPv4 Address	192.168.0.1
Subnet Mask	255.255.255.0
Tx Ring Limit	10

Below the configuration fields, there is a section for 'Equivalent IOS Commands' which is currently empty. At the bottom left, there is a 'Top' button.

Connecting PC1 to PC 5

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The screenshot shows a PC1 desktop environment with a green title bar. The 'Desktop' tab is selected in the top navigation bar. A Command Prompt window is open, displaying the results of a ping command to 192.168.0.5. The window has a blue title bar and a scroll bar on the right. The output shows two successful ping attempts, each with four replies and statistics indicating 0% loss and an average round trip time of 1ms.

```
PC1

Physical  Config  Desktop  Programming  Attributes

Command Prompt

Pinging 192.168.0.5 with 32 bytes of data:

Reply from 192.168.0.5: bytes=32 time<1ms TTL=128
Reply from 192.168.0.5: bytes=32 time<1ms TTL=128
Reply from 192.168.0.5: bytes=32 time<1ms TTL=128
Reply from 192.168.0.5: bytes=32 time<1ms TTL=128

Ping statistics for 192.168.0.5:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>ping 192.168.0.5

Pinging 192.168.0.5 with 32 bytes of data:

Reply from 192.168.0.5: bytes=32 time=1ms TTL=128
Reply from 192.168.0.5: bytes=32 time=3ms TTL=128
Reply from 192.168.0.5: bytes=32 time<1ms TTL=128
Reply from 192.168.0.5: bytes=32 time<1ms TTL=128

Ping statistics for 192.168.0.5:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 3ms, Average = 1ms

C:\>
```

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