Experiment No.: 8

Title: Network Design using Simulation software

Batch:SY-IT(B3) **Roll No.:16010423076** **Experiment No.:8**

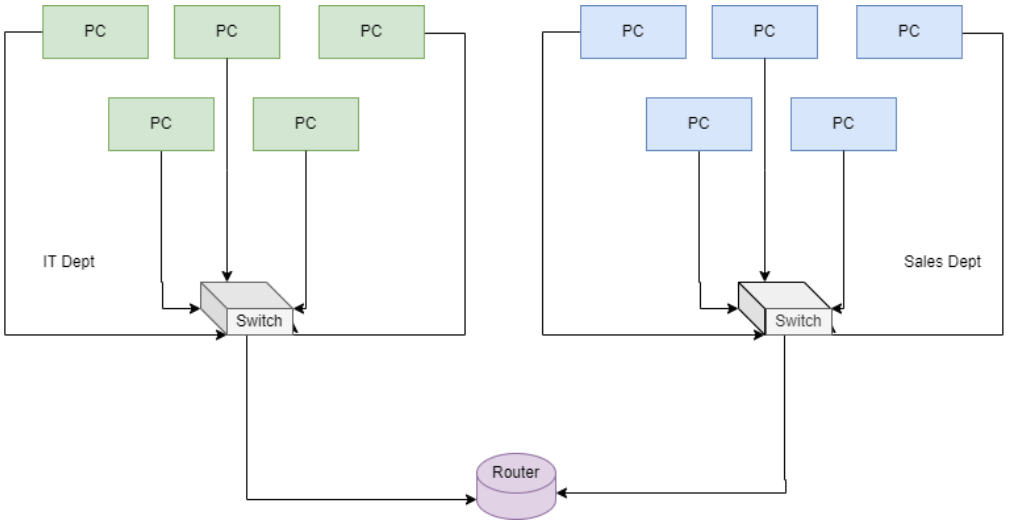
Aim: Network Design using Simulation software

Resources needed: Cisco Network Packet Tracer (CNA)

Problem Statement : Design a network for a small office with 2 departments: Sales and IT. Each department requires 5 PCs. All PCs should be able to communicate with each other through the network.

Network Design :

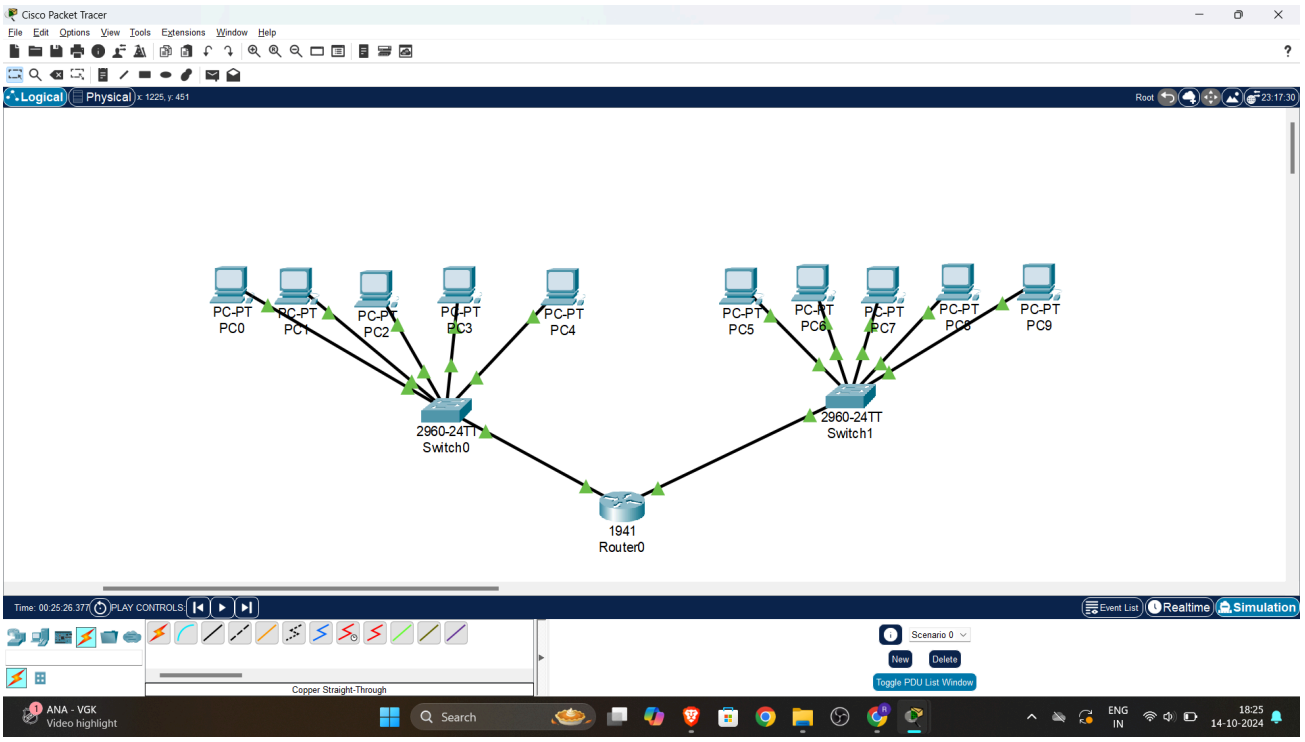
Rough Network Design :



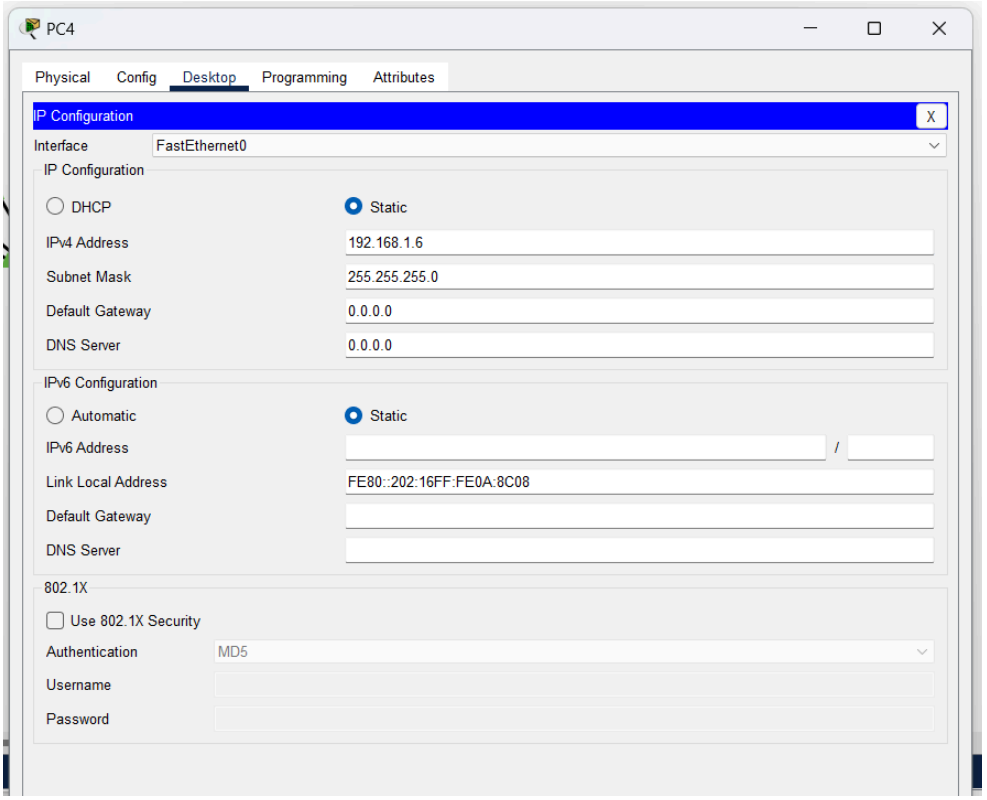
Activity: Write problem statement clearly indicating the network requirement and then design the Network diagram for the same using any Simulation Software.

Explanation:

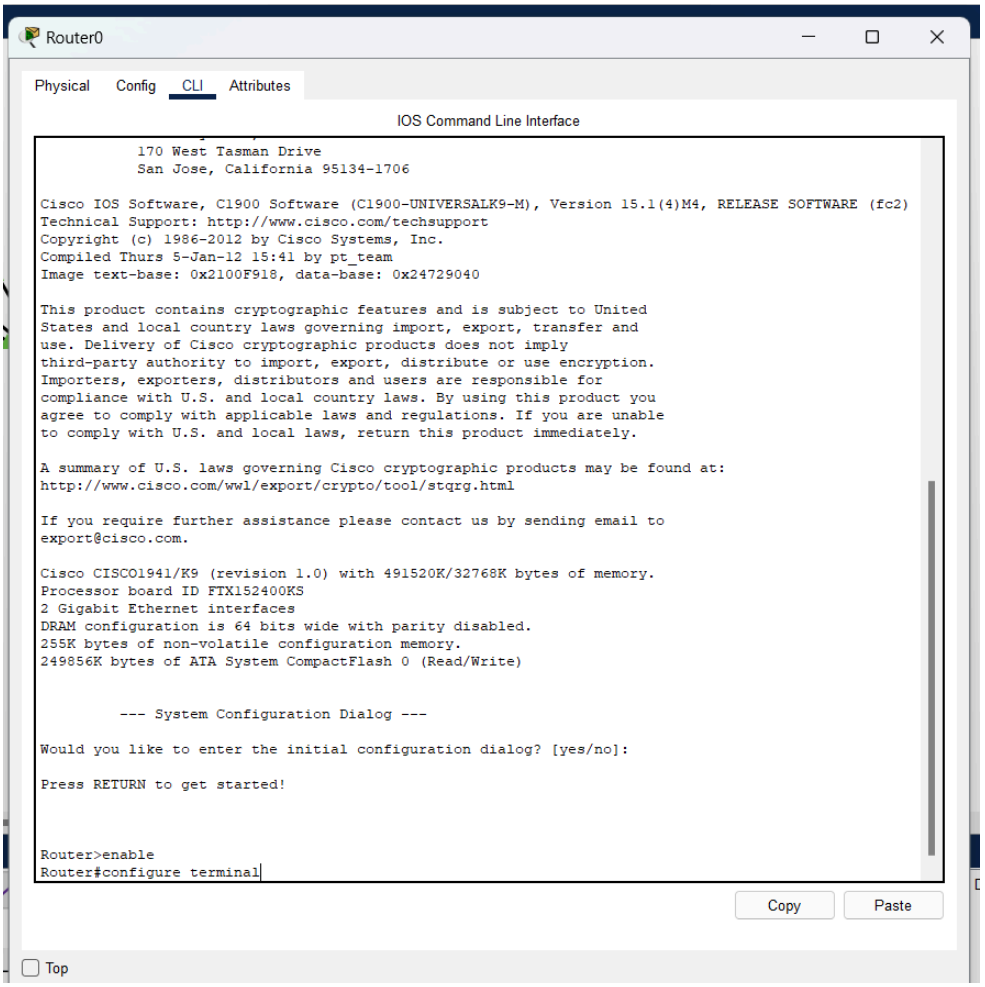
1. Creating the Network Topology :
   Design the physical or logical layout of the network by placing devices (routers, switches, PCs) and defining their connections.



2. **Configuring the IP Addresses :**
   Assign unique IP addresses to each device in the network to ensure proper communication and routing between them.

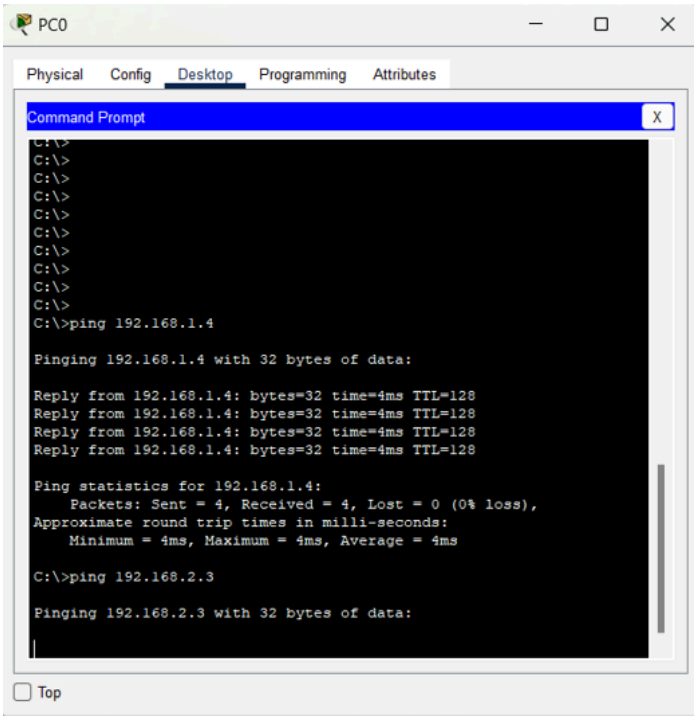


3. Router Configuration

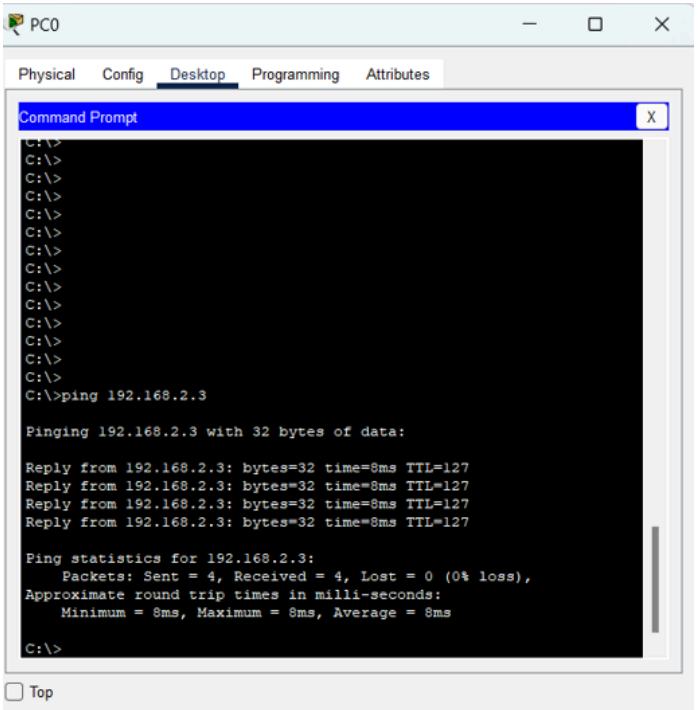


4. **Testing the Network :**
   Verify connectivity and functionality by using tools like ping to check if devices can communicate successfully across the network.

- Check connection within IT department itself



- Checking Connction of IT department with Sales Department



The results on terminal, show that the connections are working properly.

Outcomes: CO1: Understand the data communication systems, network topologies and network devices

Conclusion:

Through this activity, I learned how to design a network topology, configure IP addresses, and test network connectivity effectively. It was enlightening to see how each device connects and communicates within the network, and the importance of proper configuration in ensuring seamless communication.

Grade: AA / AB / BB / BC / CC / CD /DD

Signature of faculty in-charge with date

References:

Books/ Journals/ Websites:

For creating rough structures : https://app.diagrams.net/
Cisco Packet tracer : https://www.netacad.com/cisco-packet-tracer
https://www.lucidchart.com/pages/network-diagram/how-to-draw-a-network-diagram
https://miro.com/diagramming/how-to-create-a-network-diagram/