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COMPUTER NETWORK EXAM-2

Aim:

To design and configure a network topology using RIP and OSPF routing protocols in Cisco Packet Tracer, ensuring communication between two LANs through proper IP address assignment and routing protocol configuration.

Materials Required:

1. Cisco Packet Tracer software
2. Two Routers
3. Two or more Switches
4. 10 Computers
5. Ethernet cables for connections

Procedure:

1. Network Topology

Design:

- Create a Network Topology:
  - Design a topology that includes 10-12 computers distributed across two LANs.
  - Use at least two switches to connect the computers within each LAN.
  - Use two routers connected via a WAN link to connect the LANs.

2. IP Address Configuration:

- Assign IP Addresses to Computers:

- Use the last three digits of your roll number as the last octet of the IP address.
- Configure LAN 1 with a subnet like 192.168.1.0/24 and LAN 2 with a different subnet, e.g., 192.168.2.0/24.

• Example:
- For roll number 123, use IP addresses like 192.168.1.123 for LAN 1 and 192.168.2.123 for LAN 2.

3. Routing Protocol Configuration:

• Configure RIP on Router 1:
- Enable RIP v1 and configure the networks associated with Router 1.

• Configure OSPF on Router 2:
- Enable OSPF and configure the networks associated with Router 2.

• Ensure Inter-LAN Communication:
- Verify that the routing protocols allow communication between the two LANs.

4. Cisco Packet Tracer Configuration Steps:

• Add Devices and Connections:
- Add computers, switches, and routers in Cisco Packet Tracer and connect them using appropriate cables.

• Configure IP Addresses:
- Set IP addresses for all devices according to the subnet plan.

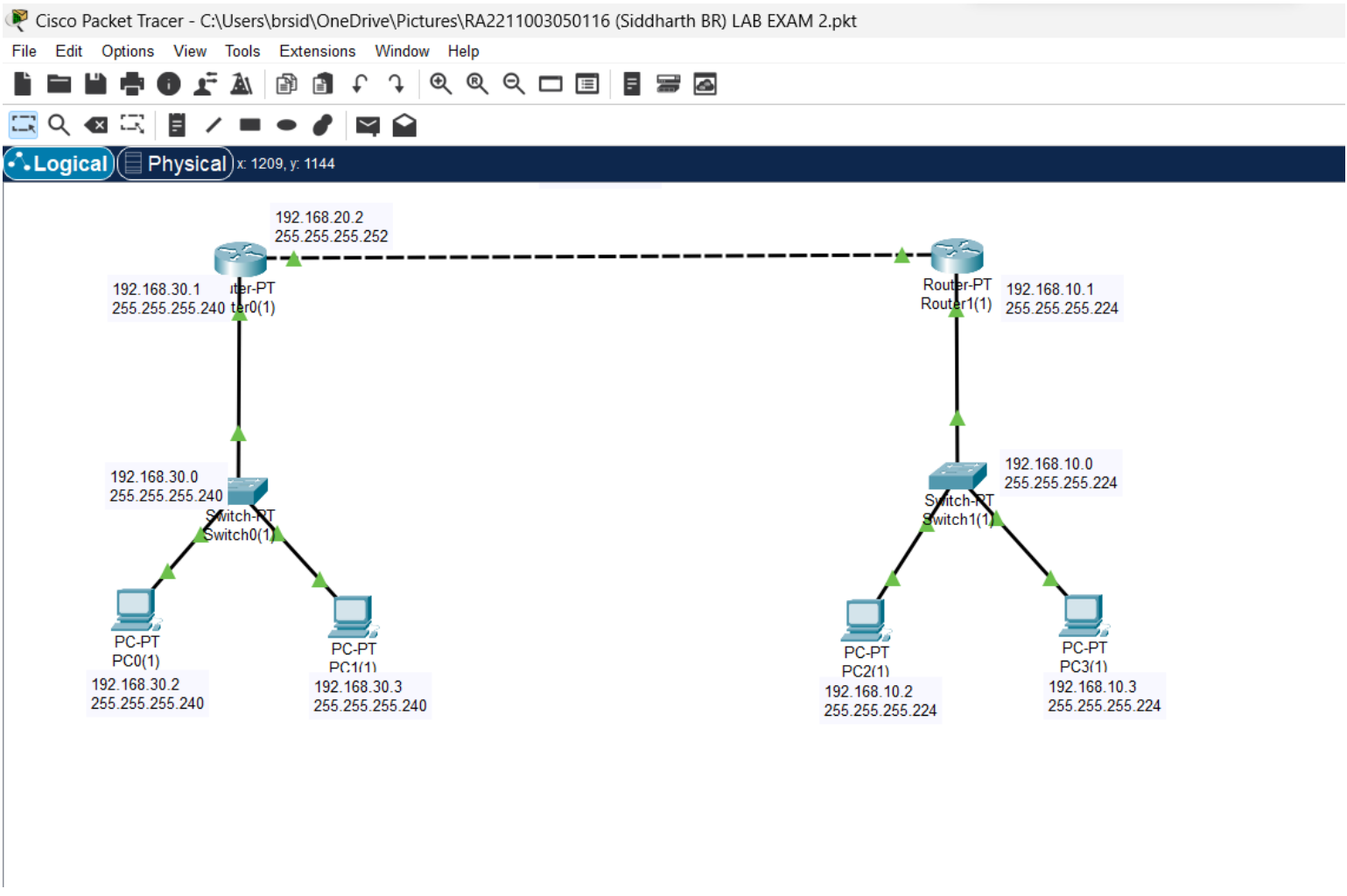
• Routing Setup:
- Configure the routing protocols on each router (RIP for Router 1 and OSPF for Router 2).

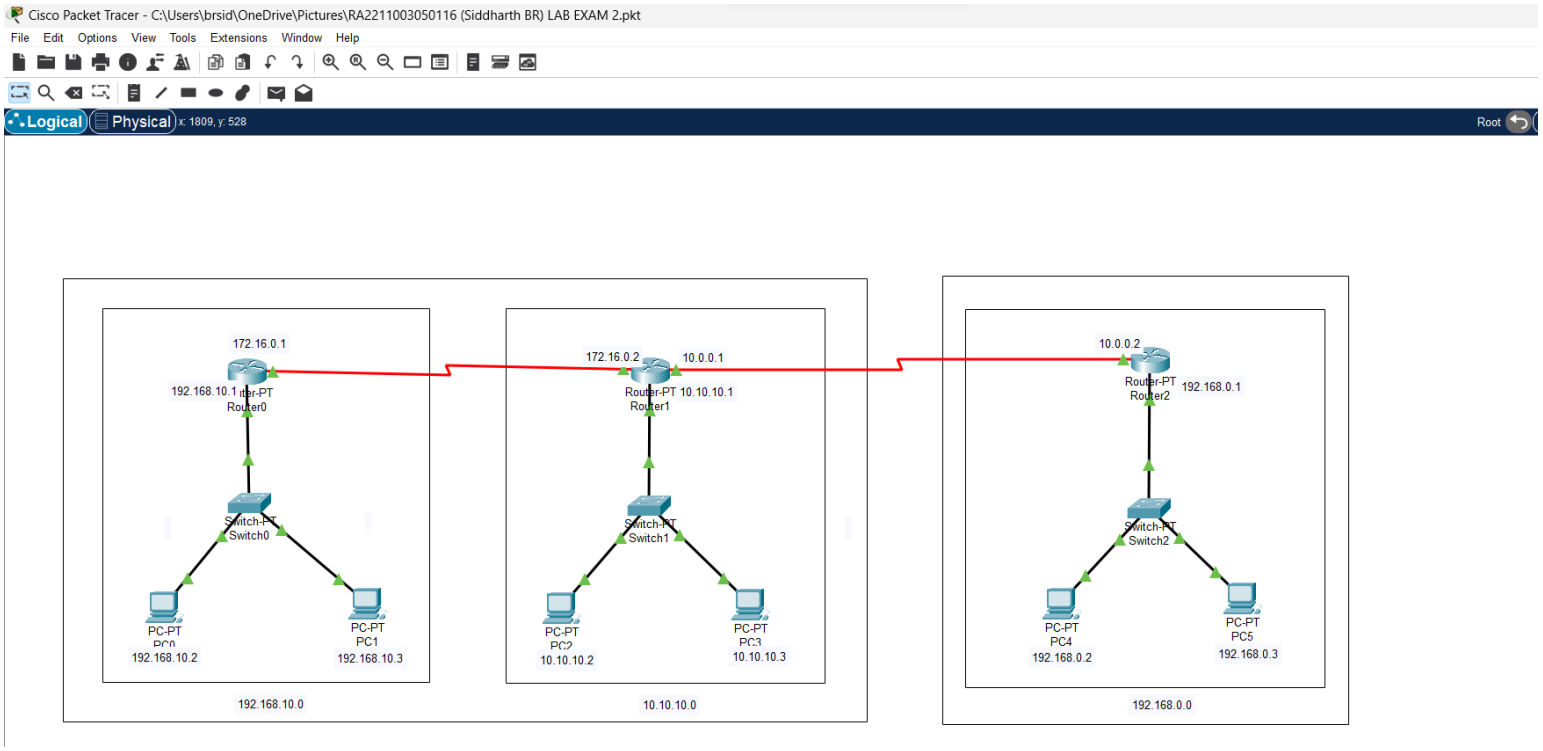
- Verify that both routers can share routing information and that static routes are set if necessary.

5. Simulation:

- Use Simulation Mode:
  - Test message transmission from one computer in LAN 1 to a computer in LAN 2.
- Verify Successful Transmission:
  - Ensure that the message reaches the destination computer without any issues.

Output:





Result:

The network topology was successfully configured using RIP and OSPF routing protocols. The IP addresses were assigned according to the roll number, and communication between the two LANs was verified using Cisco Packet Tracer's simulation mode.