Computer Network Lab Exam Exercise

Objective: Create and configure a suitable topology for both LAN and WAN using 10-15 computers, routers, and switches. Simulate the transmission of a message from one network to a computer in another network.

Procedure:

1. **Topology Design:**
    - Design a network topology using Cisco Packet Tracer that includes:
        1. **LAN Configuration:** At least 10 computers connected to switches.
        2. **WAN Configuration:** Connect the LAN network to another network using routers.
2. **Network Setup in Cisco Packet Tracer:**
    - **Add Devices:**
        1. Place and connect 10-15 computers.
        2. Add necessary switches (at least 2 for the LAN setup).
        3. Add at least 2 routers for WAN setup.
    - **Configure IP Addresses:**
        1. Assign IP addresses to all computers within the LAN.
        2. Configure router interfaces with appropriate IP addresses.
        3. Set up routing protocols or static routes as needed for WAN communication.
3. **Configuration Steps:**
    - **LAN Configuration:**
        1. Connect computers to the switches.
        2. Configure IP addresses on each computer.
        3. Connect switches with each other as needed.
    - **WAN Configuration:**
        1. Connect routers to each other.
        2. Configure router interfaces with IP addresses.
        3. Set up routing (static or dynamic) to ensure connectivity between the LANs.
4. **Simulation:**
    - **Send a Message:**
        1. Use the simulation mode in Cisco Packet Tracer.
        2. Configure and send a message from a computer in one network to a computer in another network.
        3. Capture and verify the message transmission.
5. **Documentation:**
    - **Create a Step-by-Step Procedure Document:**
        1. Outline each step taken in the network configuration and simulation.
        2. Include commands and settings used during the configuration process.
    - **Take Screenshots:**

1. Capture screenshots of the network topology.
2. Capture screenshots showing the successful transmission of the message.

- **Save Packet Tracer File:**
  1. Save the Packet Tracer file with your completed network configuration and simulation.

6. **Upload and Submit:**
   - **GitHub Repository:**
     1. Create a GitHub repository with your register number as the repository name.
     2. Upload the following files to the repository:
        - Procedure document (suggested to write in .MD file in github)
        - Screenshots
        - Packet Tracer file (.pkt)
     3. Ensure that the repository is public or accessible.
   - **Submit the Repository Link:**
     1. Copy the URL of your GitHub repository.
     2. Submit this URL to Google Classroom as per the submission guidelines.

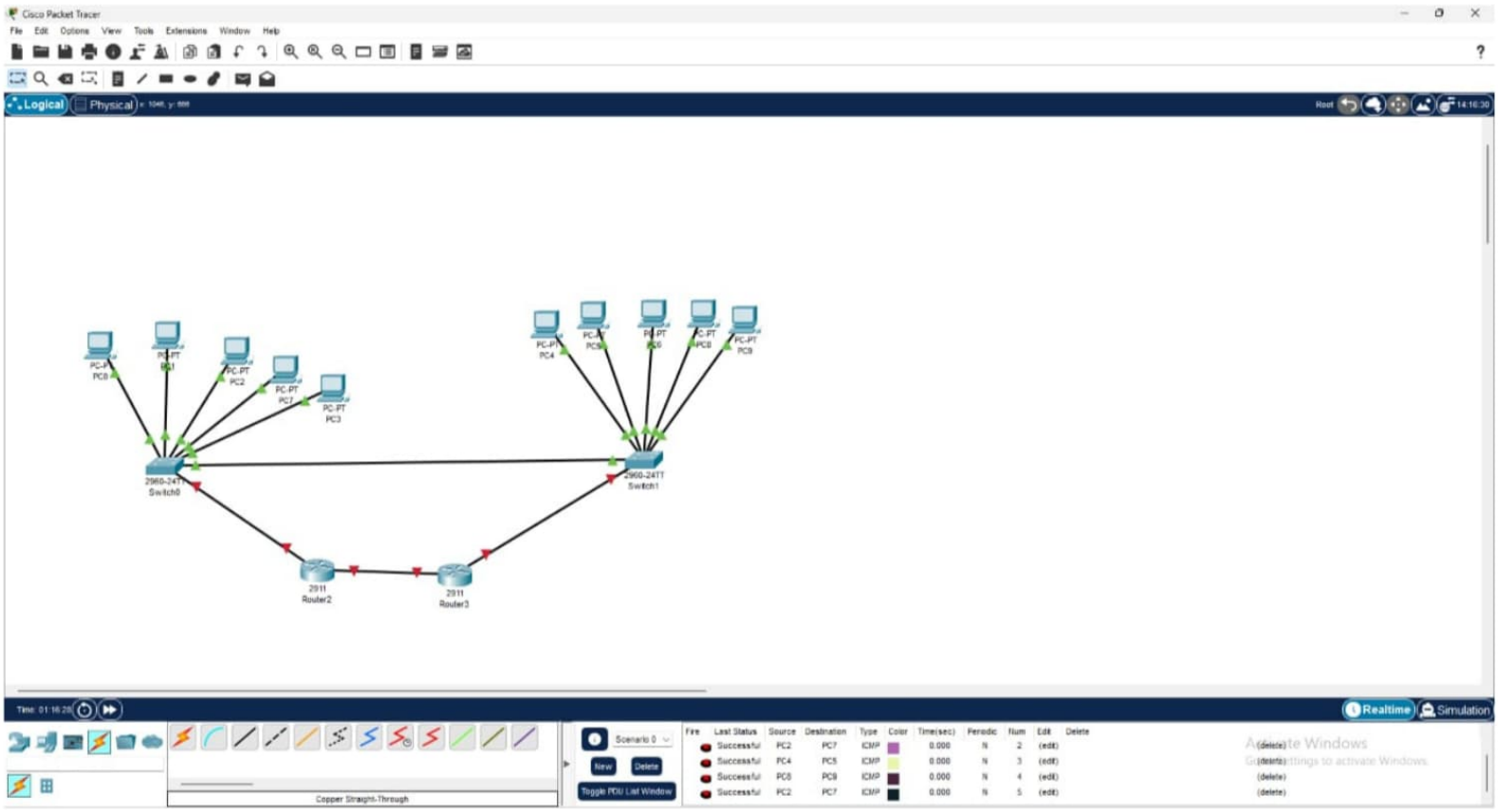
Marks Breakdown:

- **Network Creation in Cisco Packet Tracer:** 4 marks
- **Simulation of Message Transmission:** 2 marks
- **Writing and Documenting Procedures:** 2 marks
- **Uploading to GitHub Repository:** 2 marks

Total Marks: 10

Note:

Please manage your time effectively. The marks for this exercise will be based on your lab performance, and submissions must be made within the lab hours. Late submissions will not be considered for evaluation.


Cisco Packet Tracer
File Edit Options View Tools Extensions Window Help
Logical
Physical
PC-PT PC0
PC-PT PC1
PC-PT PC2
PC-PT PC7
PC-PT PC3
PC-PT PC4
PC-PT PC5
PC-PT PC6
PC-PT PC8
PC-PT PC9
2960-24TT Switch0
2960-24TT Switch1
2911 Router2
2911 Router3
Realtime
Simulation
Scenario 0
New
Delete
Toggle PDU List Window
Copper Straight-Through
Fire Last Status Source Destination Type Color Time(sec) Periodic Num Edit Delete
Successful PC2 PC7 ICMP 0.000 N 2 (edit) (delete)
Successful PC4 PC5 ICMP 0.000 N 3 (edit) (delete)
Successful PC8 PC9 ICMP 0.000 N 4 (edit) (delete)
Successful PC2 PC7 ICMP 0.000 N 5 (edit) (delete)