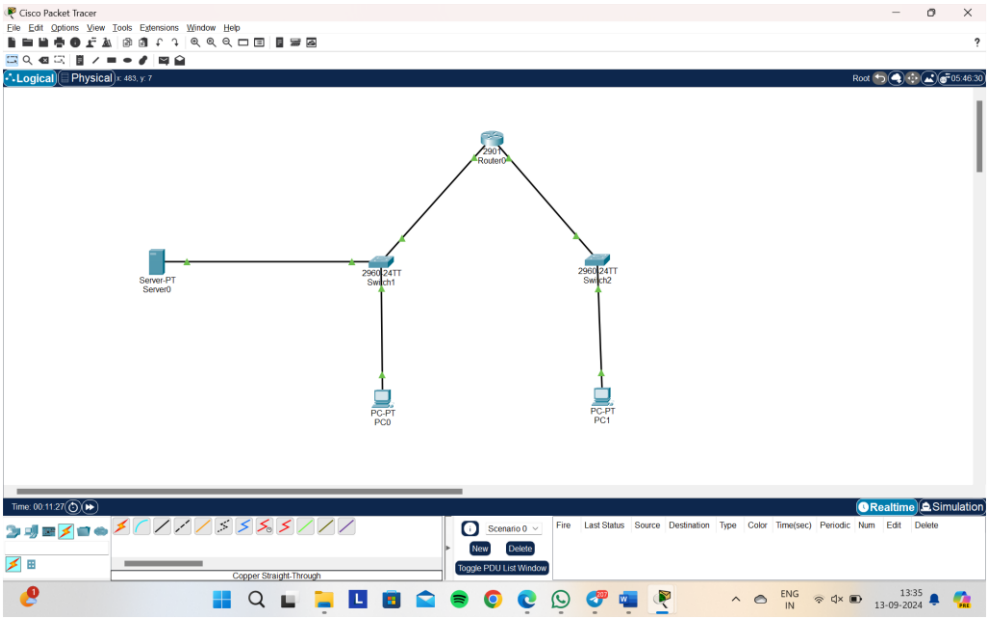
Exp.no-2: Execute the following networking commands like ipconfig, tracert, telnet, netsh, ping, nslookup and netstat in the command prompt with simple topology.

Diagram:



Command Prompt

```
Cisco Packet Tracer PC Command Line 1.0
C:\>ping 192.168.2.2

Pinging 192.168.2.2 with 32 bytes of data:

Reply from 192.168.2.2: bytes=32 time=4ms TTL=128
Reply from 192.168.2.2: bytes=32 time=7ms TTL=128
Reply from 192.168.2.2: bytes=32 time<1ms TTL=128
Reply from 192.168.2.2: bytes=32 time=7ms TTL=128

Ping statistics for 192.168.2.2:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 7ms, Average = 4ms

C:\>ping 192.168.1.2

Pinging 192.168.1.2 with 32 bytes of data:

Request timed out.
Reply from 192.168.1.2: bytes=32 time<1ms TTL=127
Reply from 192.168.1.2: bytes=32 time<1ms TTL=127
Reply from 192.168.1.2: bytes=32 time=2ms TTL=127

Ping statistics for 192.168.1.2:
    Packets: Sent = 4, Received = 3, Lost = 1 (25% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 2ms, Average = 0ms
```

Actions:

1. Set Up a Simple Network Topology:

- Create a network with four devices: two PCs, a switch, and a router.

- Use copper straight-through cables to connect each PC to the switch and connect the switch to the router.

2. Configure IP Addresses:

- Assign unique IP addresses to each device in the network.

- PC1: `192.168.2.2`, PC2: `192.168.1.2`, and the router interfaces should be configured with the correct network IPs.

3. Execute Networking Commands:

- Ping: Check connectivity between devices by pinging other IPs (as shown in the output).

- ipconfig: Display the IP configuration of the local machine.

- tracert: Track the route packets take to a specified destination.

- telnet: Test remote connectivity using the telnet protocol.

- netsh: Use network shell commands to configure network interfaces.

- nslookup: Perform DNS lookup to translate domain names into IP addresses.

- netstat: Display active network connections and listening ports.

4. Ping Analysis and Troubleshooting:

- Examine the ping results for success or failures.

- From PC1, successfully ping `192.168.2.2` with minimal round-trip time.

- Ping `192.168.1.2`, but note that the request times out, indicating connectivity issues that need troubleshooting.

5. Document Observations:

- Note any packet loss or unusual delays and adjust network configurations as needed.