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Batch: 03

EXPERIMENT: 06

● **Aim:** Star Topology graphical simulation using packet tracer.

● **Theory:**

Star topology:

- Star topology is a computer network topology in which all the nodes are connected to a centralized hub.
- The hub or switch acts as a middleware between the nodes.
- Any node requesting for service or providing service, first contact the hub for communication.
- The central device (hub or switch) has point to point communication link (the dedicated link
- between the devices which cannot be accessed by some other computer) with the devices.
- The central device then broadcast or unicast the message based on the central device used.
- The hub broadcasts the message, while the switch unicasts the messages by maintaining a switch table.
- Broadcasting increases unnecessary data traffic in the network.

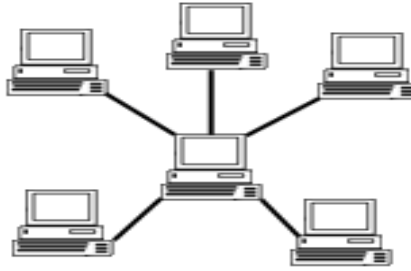
Advantages of Star topology:

- Centralized control.
- Less Expensive.
- Easy to troubleshoot (the faulty node does not give response).
- Good fault tolerance due to centralized control on nodes.
- Easy to scale (nodes can be added or removed to the network easily).

Disadvantages of Star topology:

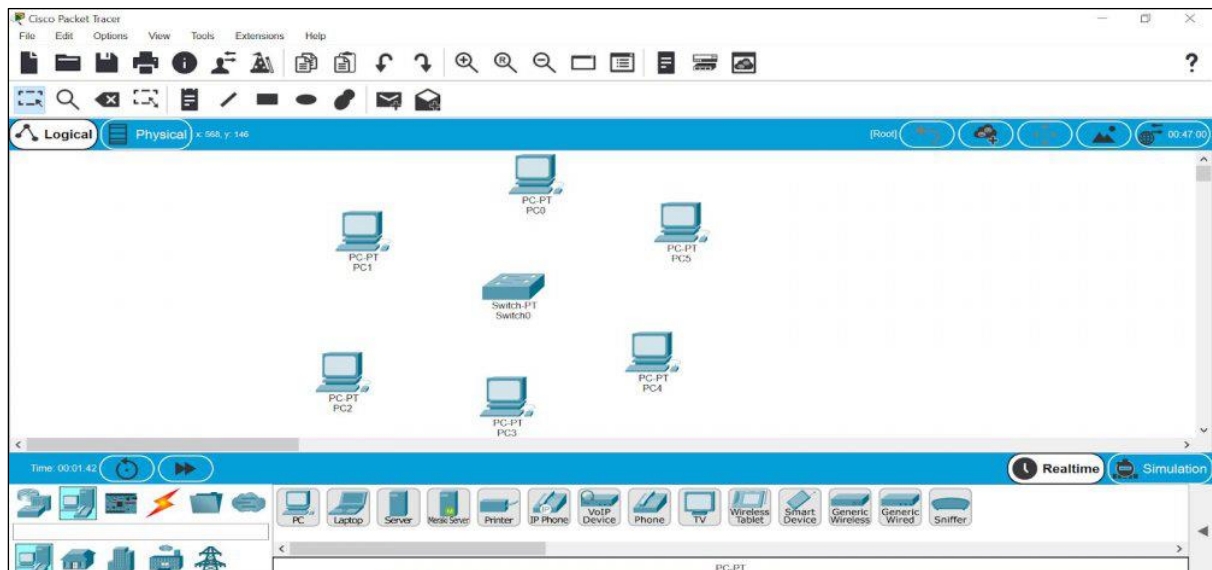
- If the central device fails, the network will fail.
- The number of devices in the network is limited (due to limited input-output port in a central device).

Star Topology

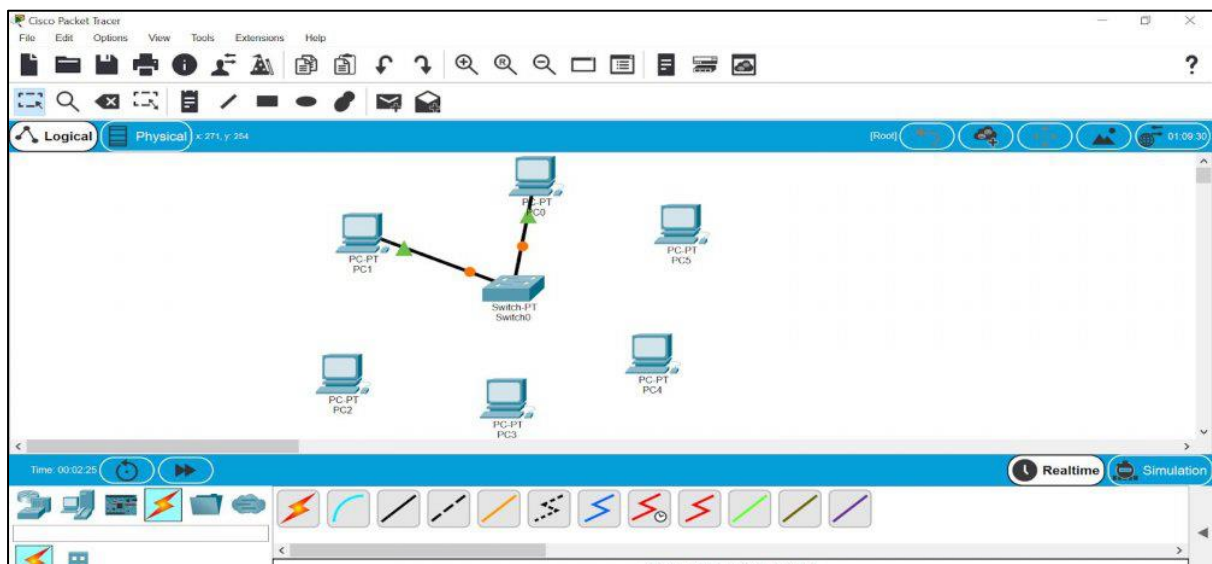


Steps Implementing Star Topology using Cisco Packet Tracer:

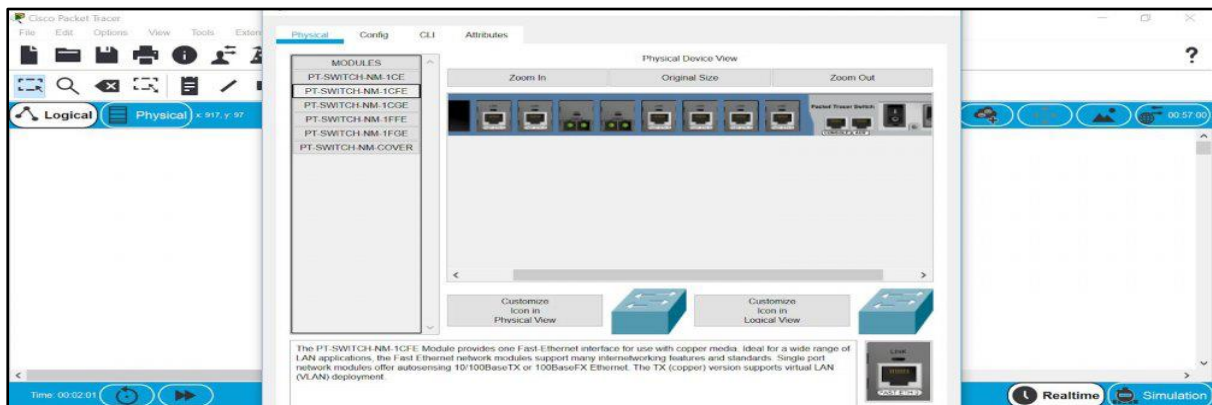
Step 1: We have taken a switch and linked it to six end devices.



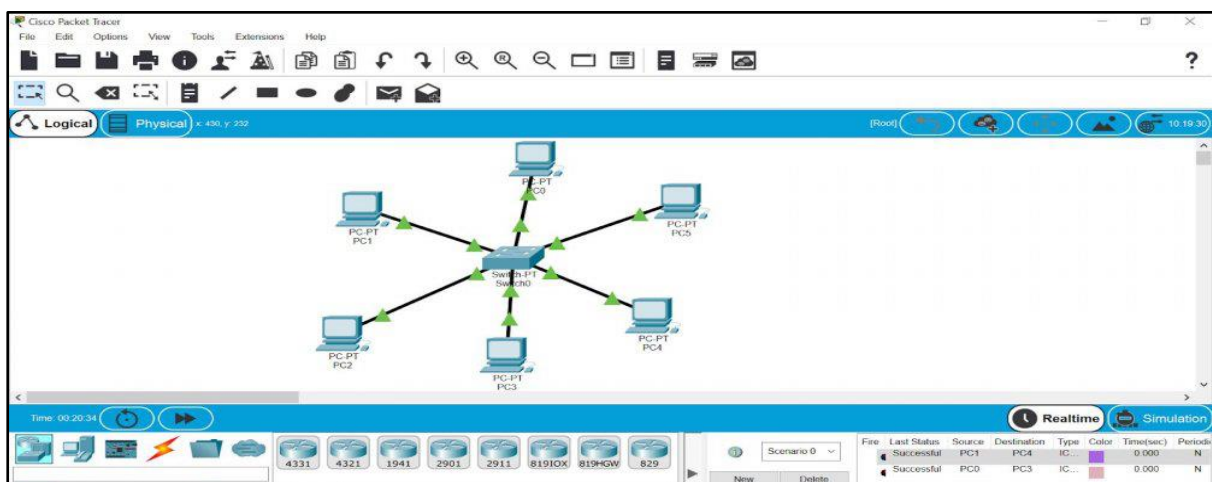
Step 2: Link every device with the switch.



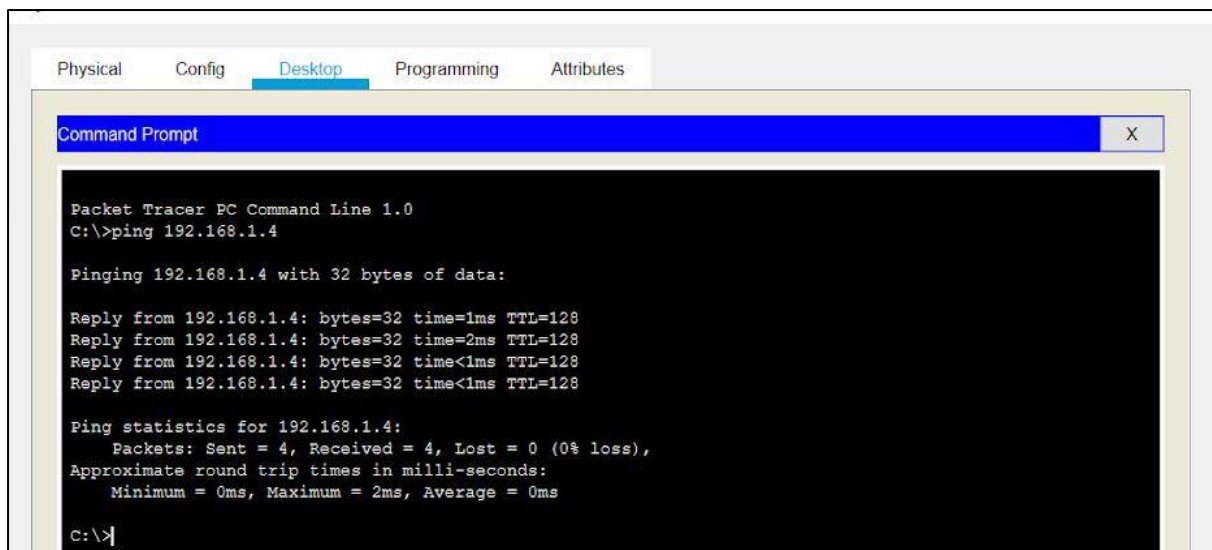
Step 3: Provide the IP address to each device.



Step 4: Transfer message from one device to another and check the Table for Validation.



Step 4: ping.



- **Conclusion:** Thus, we have studied about **Star topology graphical simulation** using packet tracer.