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Experiment 4

Aim: Implement Bus based Hub topology through cisco packet tracer.

Theory:

Bus Topology:

Alternatively mentioned as line topology, **bus topology** could even be a specific quite topology during which each computer and network device is connected to a minimum of one cable or backbone .

Bus topology carries transmitted data through cable. because data reaches each node, node checks destination address (MAC/IP address) to work out if it matches their address. If address does not match with node, node does nothing more. But if addresses of node match to address contained within data then they process on knowledge. In bus, communication between nodes are done through foremost network cable. The primary advantage of bus topology is that it makes linear connections much easier to complete. Peripherals and computers can be added to the topology of the network in a linear fashion without the same demands for cable length that a star topology link would require.

Advantages of Bus Topology:

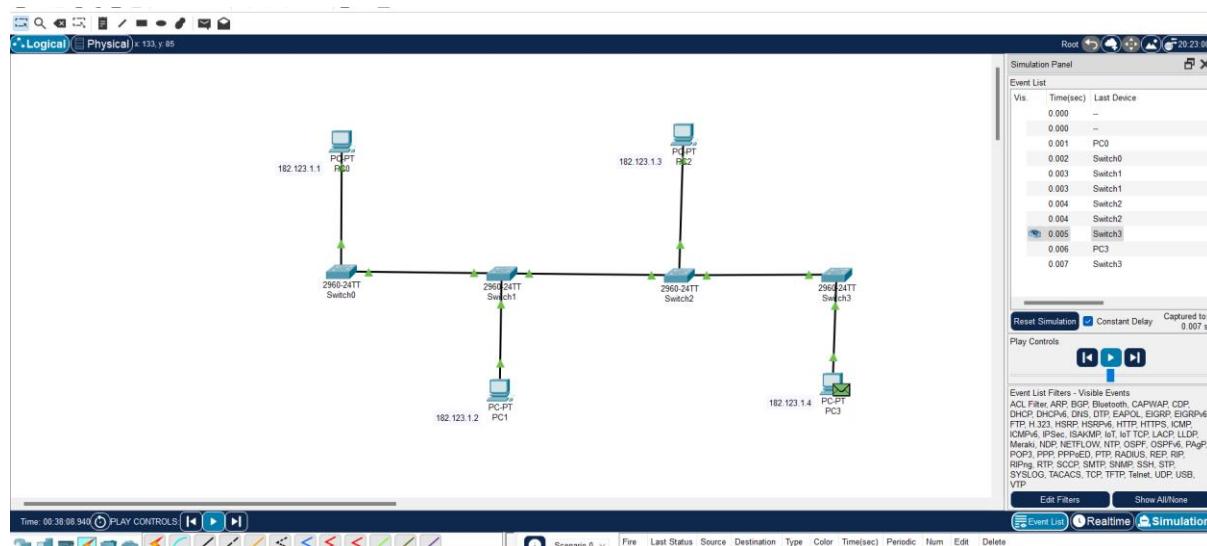
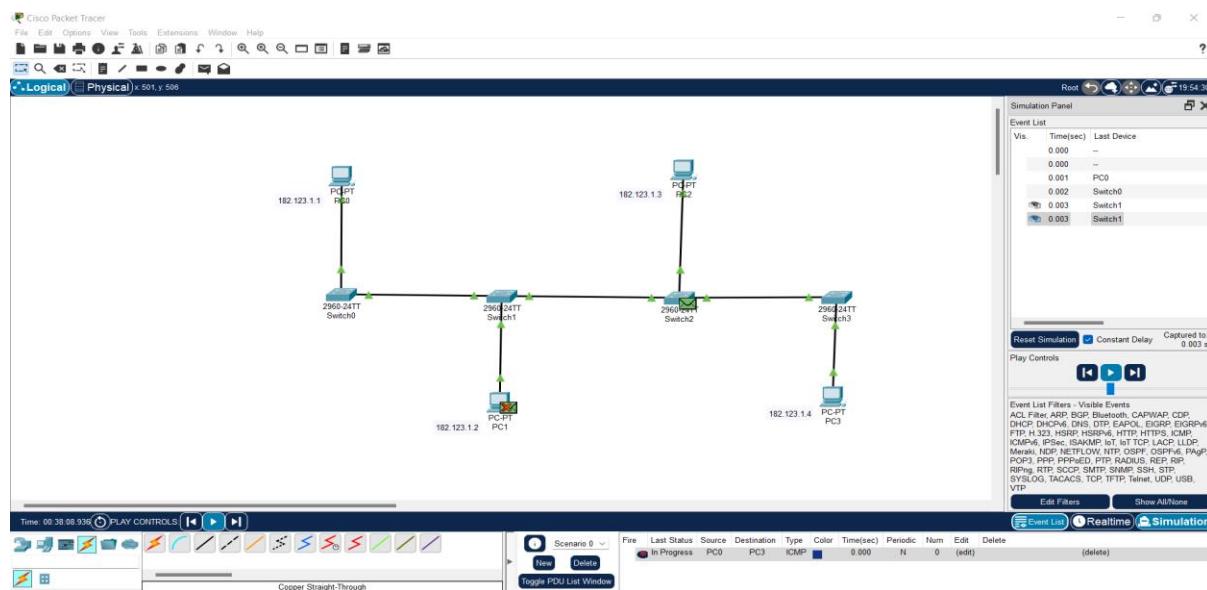
- It is the easiest network topology for connecting peripherals or computers in a linear fashion.
- It works very efficient well when there is a small network.
- Length of cable required is less than a star topology.
- It is easy to connect or remove devices in this network without affecting any other device.
- Very cost-effective as compared to other network topology i.e. mesh and star
- It is easy to understand topology.
- Easy to expand by joining the two cables together.

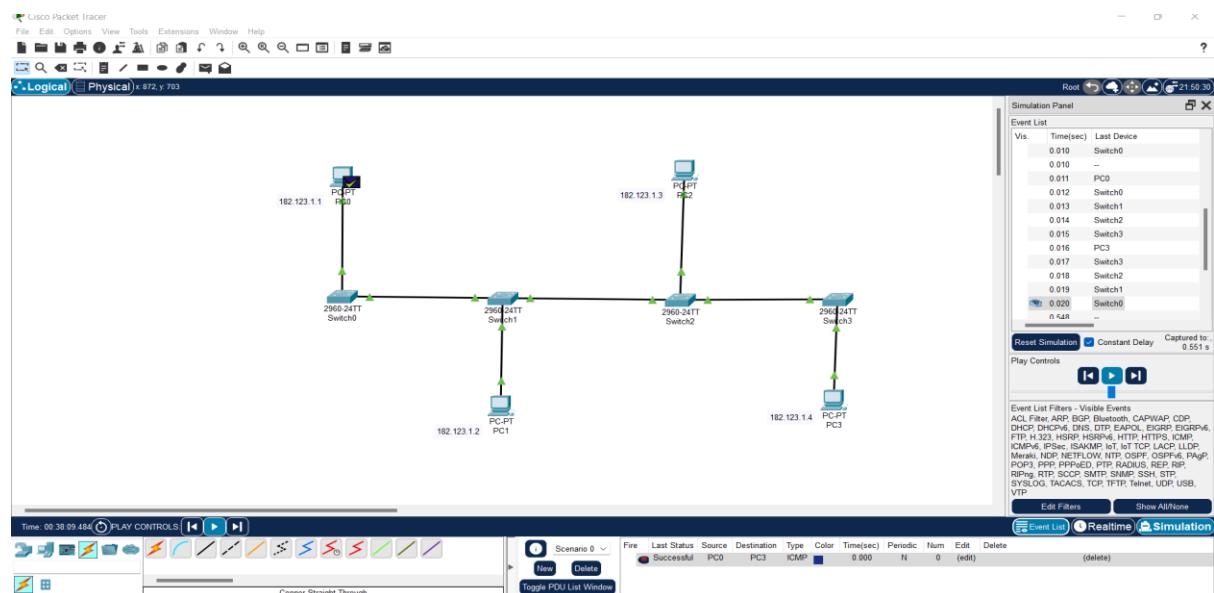
Disadvantages of Bus Topology:

- Bus topology is not great for large networks.

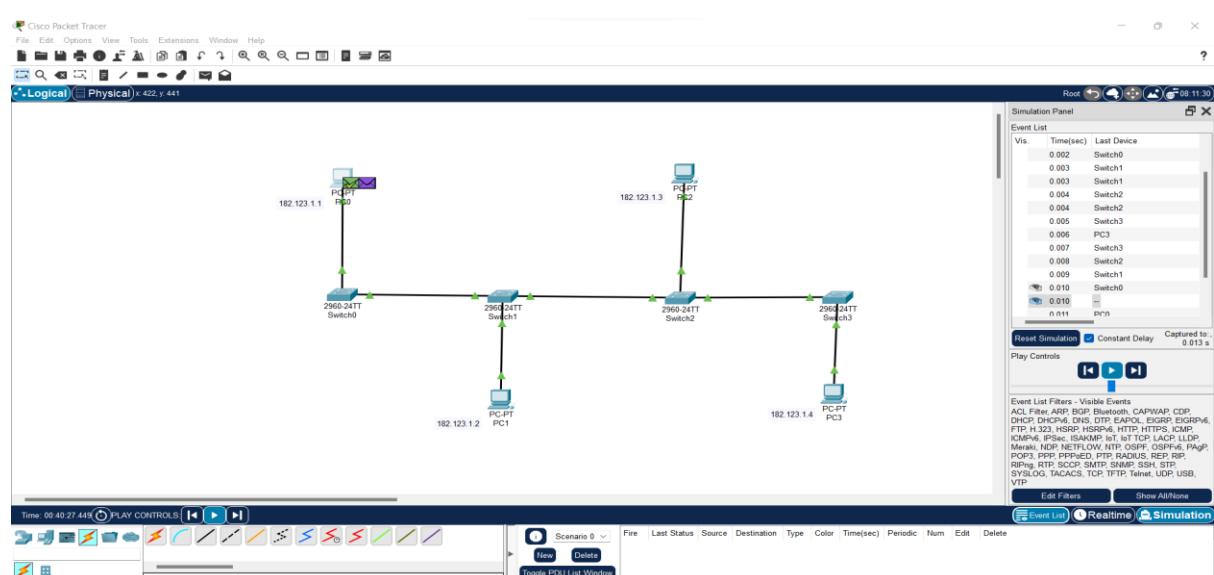
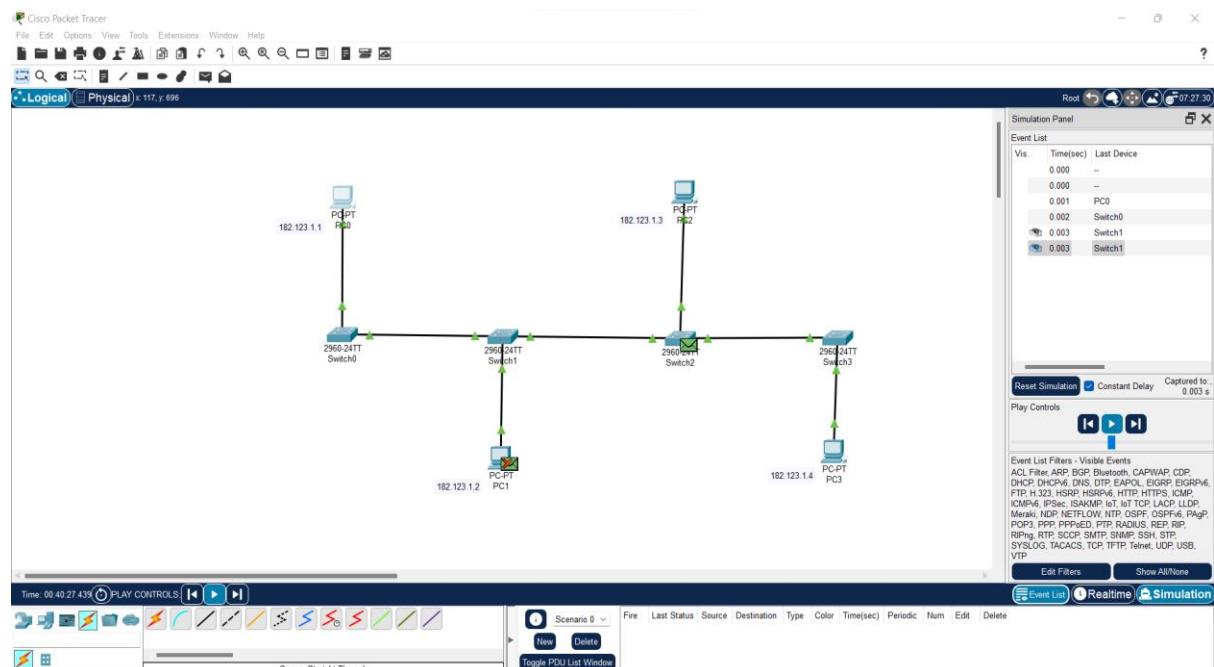
- Identification of problem becomes difficult if whole network goes down.
- Troubleshooting of individual device issues is very hard.
- Need of terminators are required at both ends of main cable.
- Additional devices slow network down.
- If a main cable is damaged, whole network fails or splits into two.
- Packet loss is high.
- This network topology is very slow as compared to other topologies.

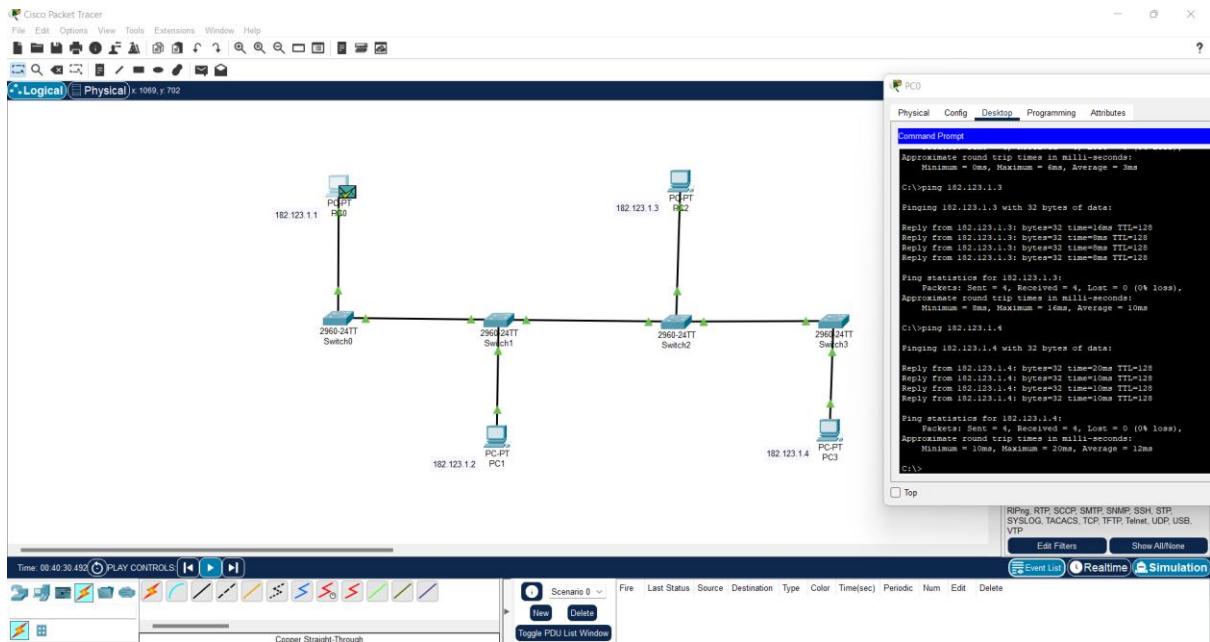
Output:





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Conclusion: Thus we have successfully implemented Bus topology through cisco packet tracer.