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19BCE0829

CSE 1004 – Network and Communication

SLOT: L47+L48

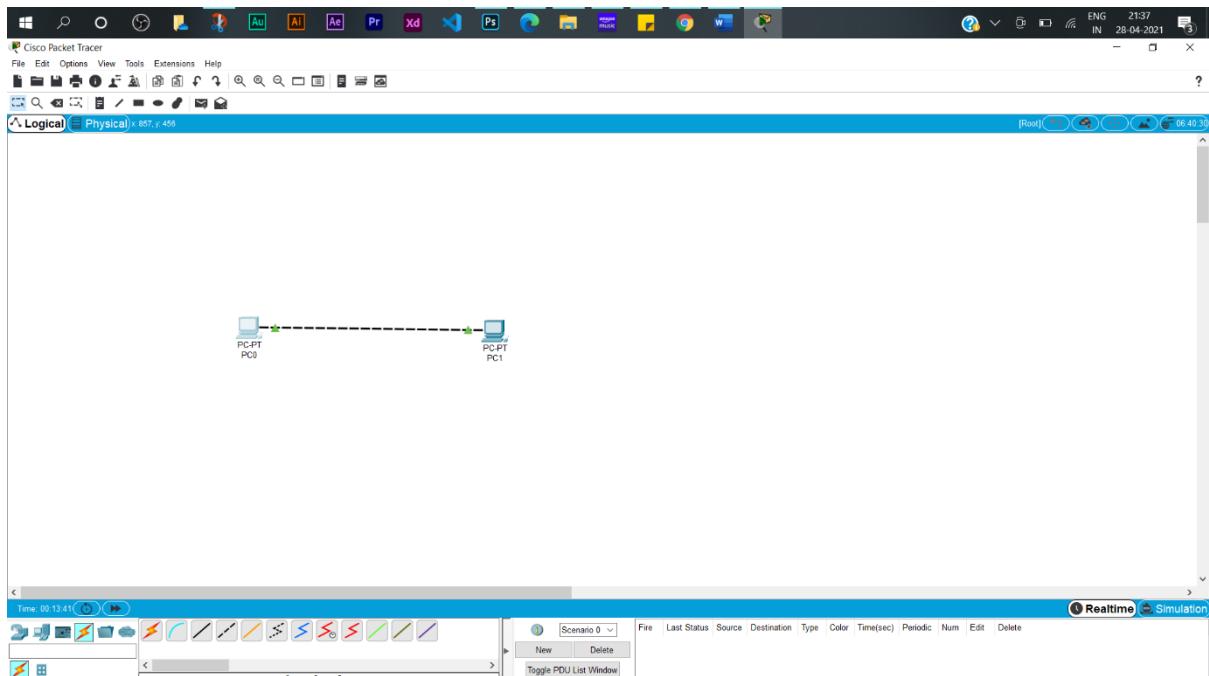
Faculty: SRIMATHI C mam

LAB Digital Assignment- 4

Lab Date: 28-04-2021

1. Basics of packet tracer

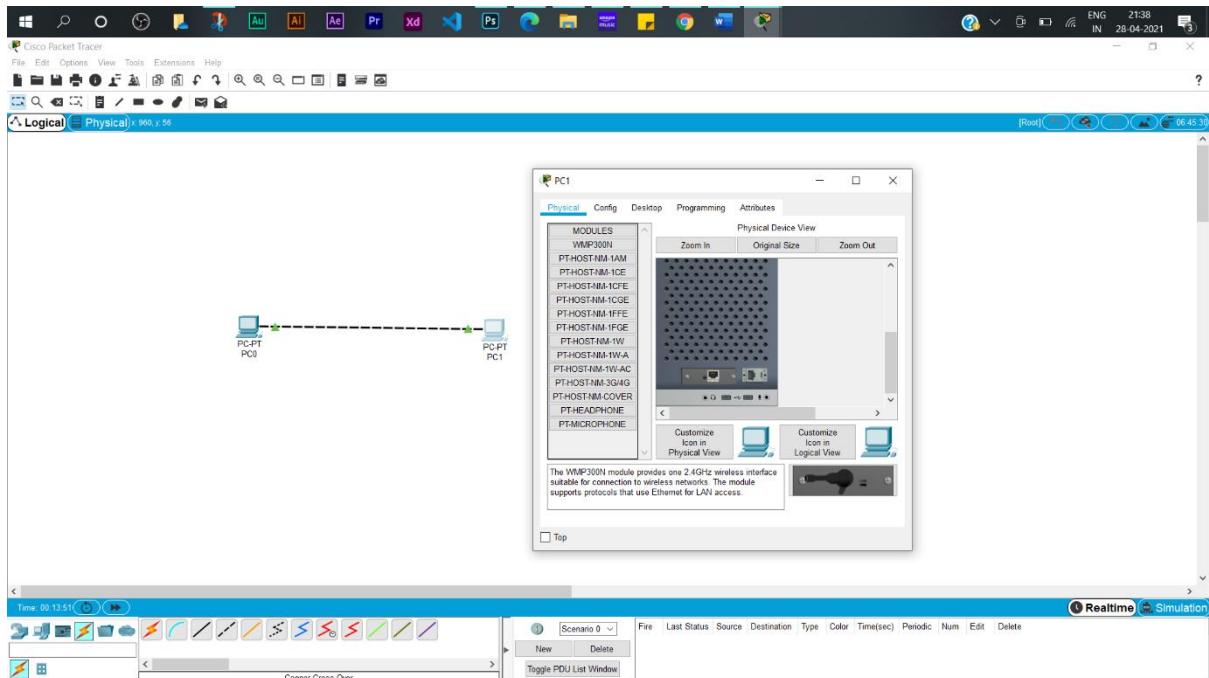
An innovative and powerful networking simulation tool used for practice, discovery and troubleshooting. It helps to understand networks easily.



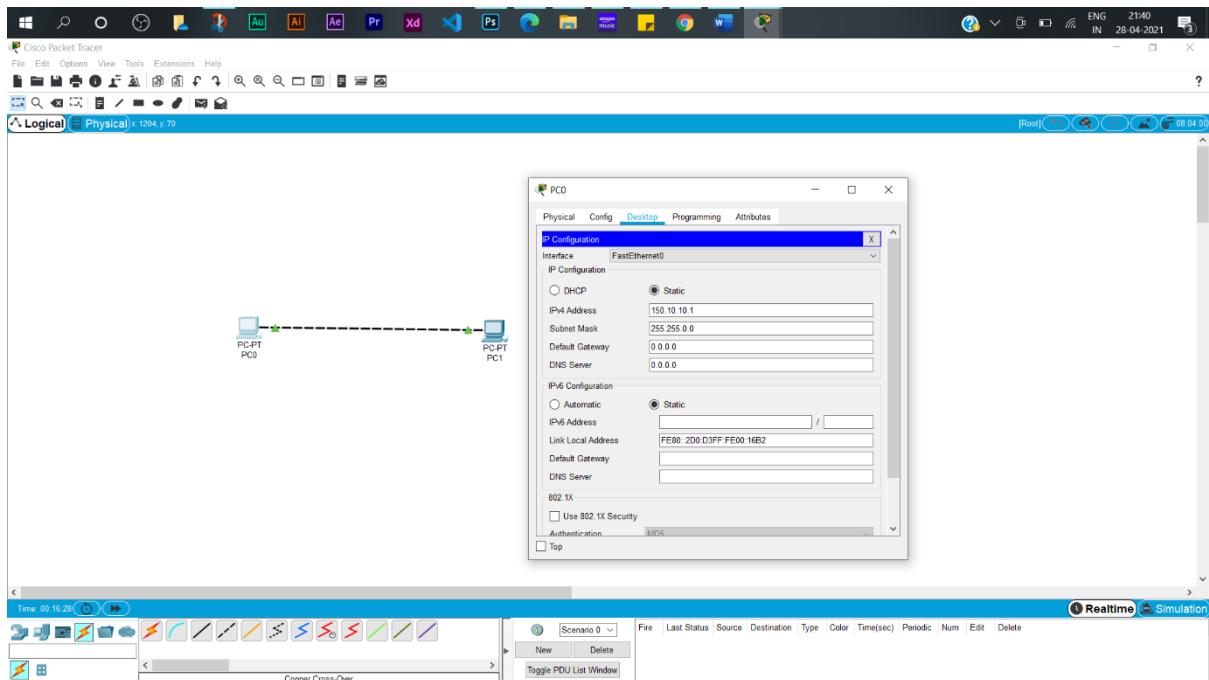
2 computers with peer-peer network

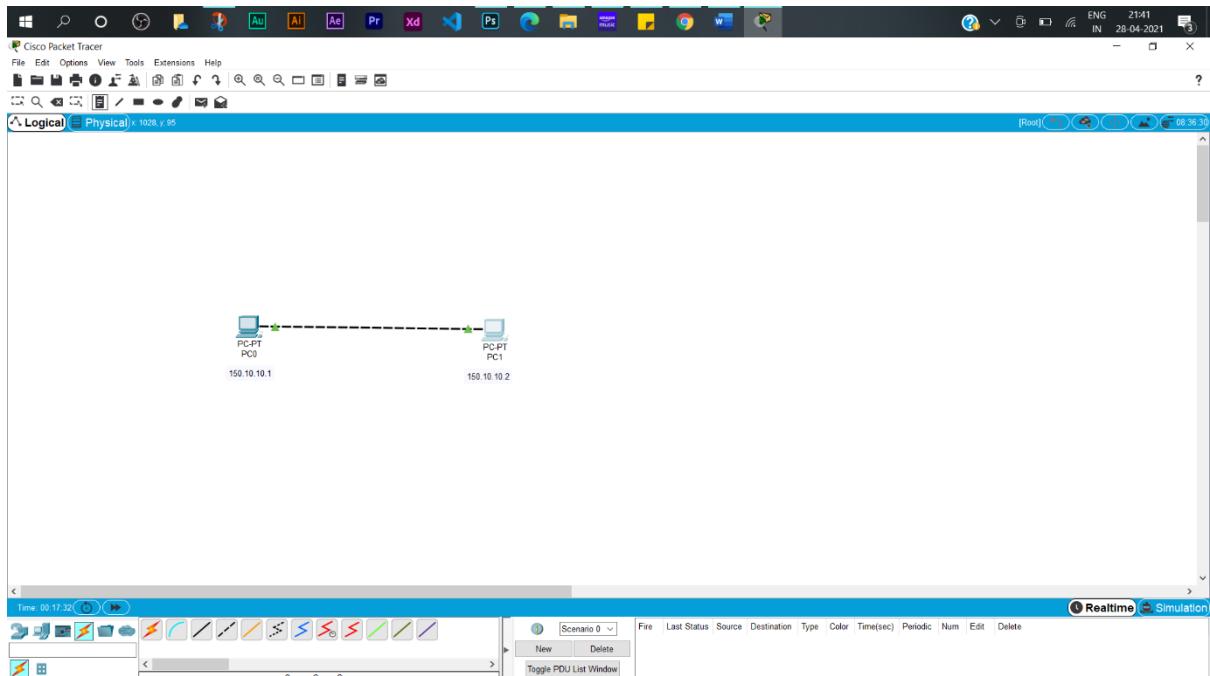
End devices- computer ethernet ports

Ethernet cross over cable

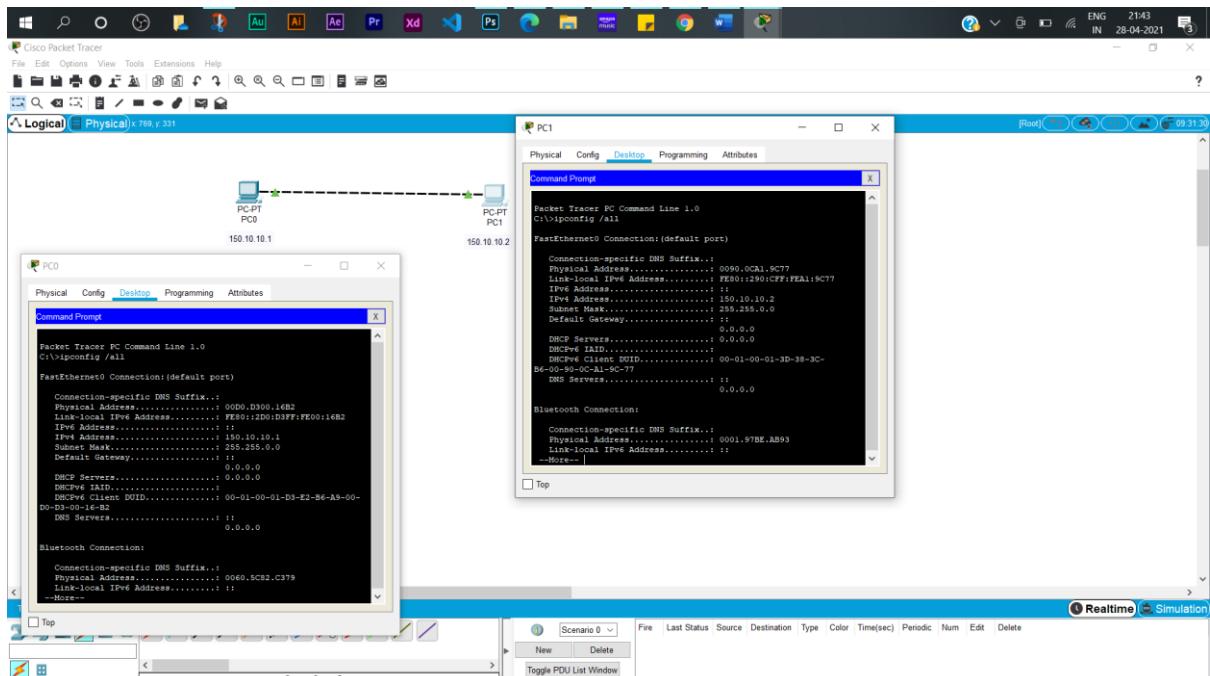


Cpu portion and Ethernet port

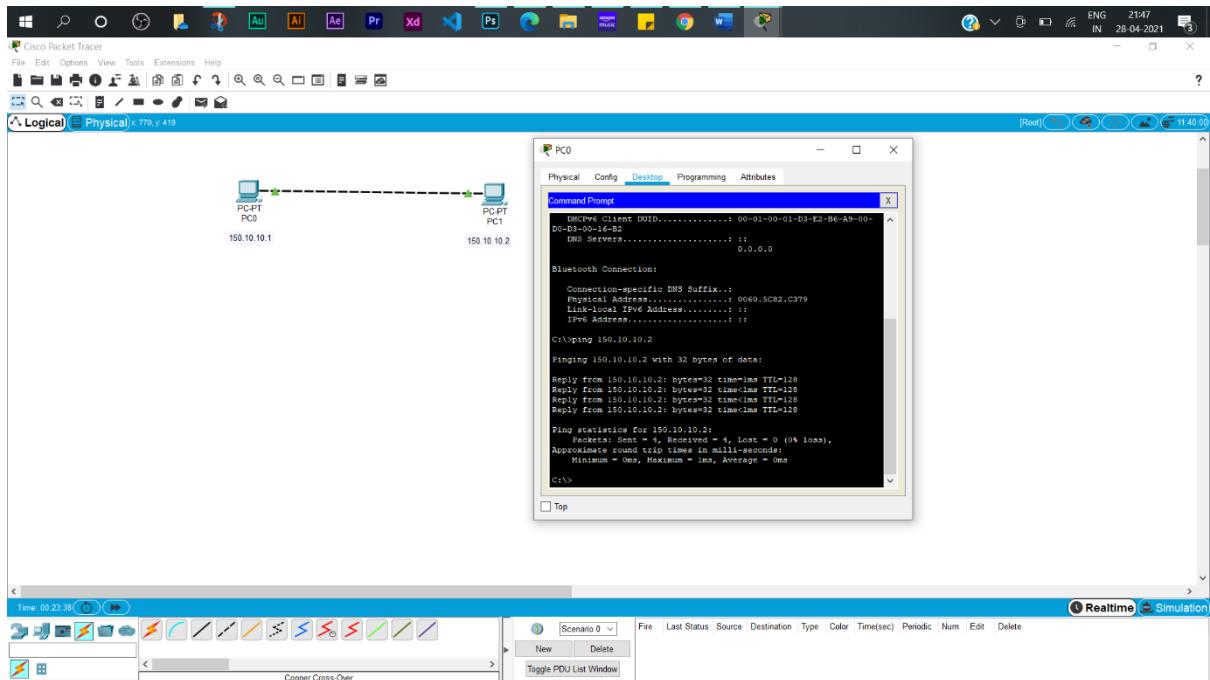




Assign IP address



Check ip mac commands



2 computers are reachable or not

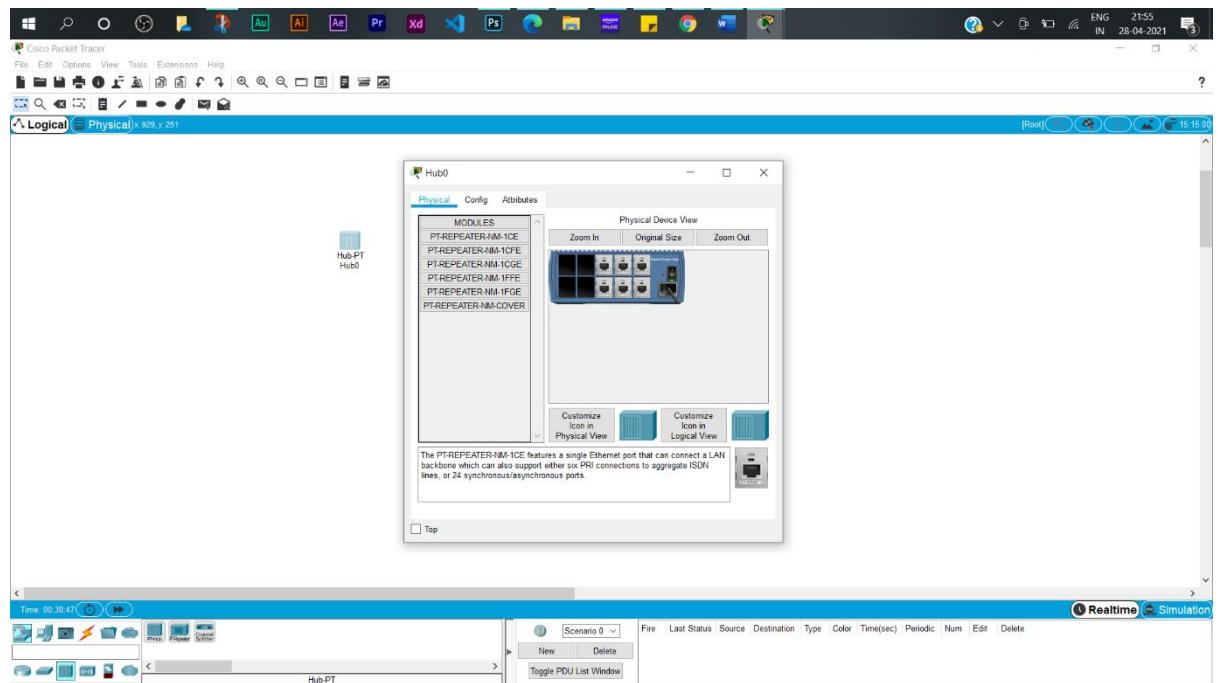
2. Hubs

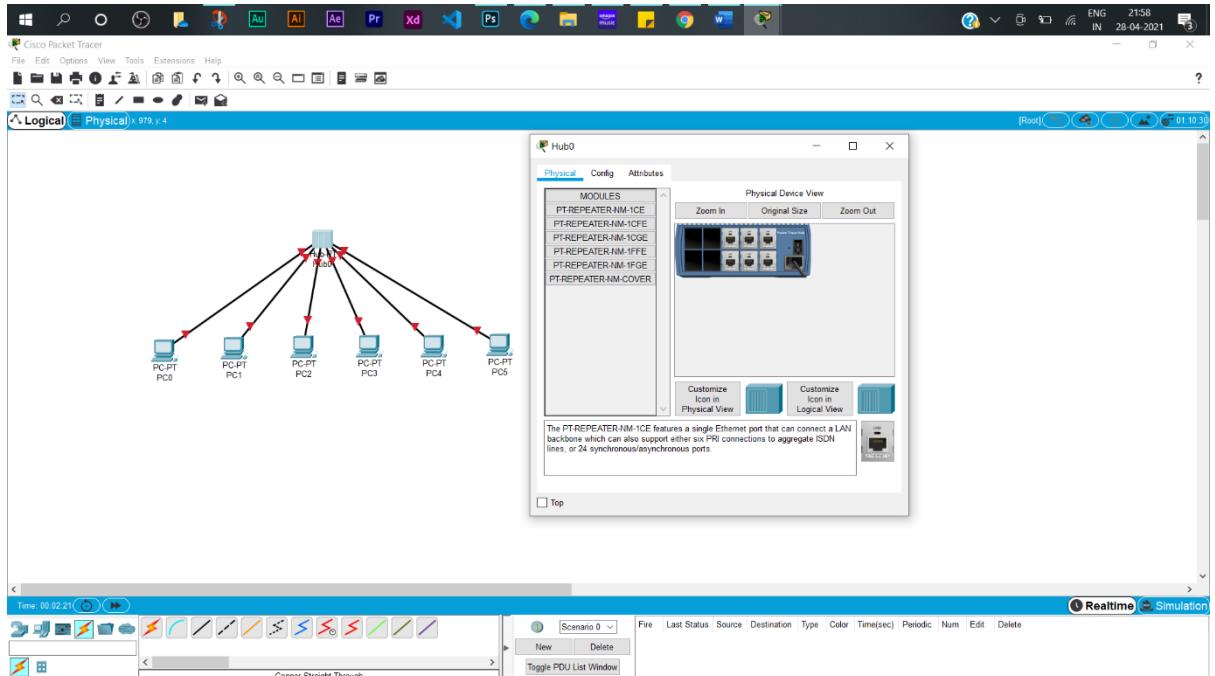
When a packet arrives at one port, it is copied to other ports so that all segments of the LAN can see all packets.

Works at physical layer of OSI model

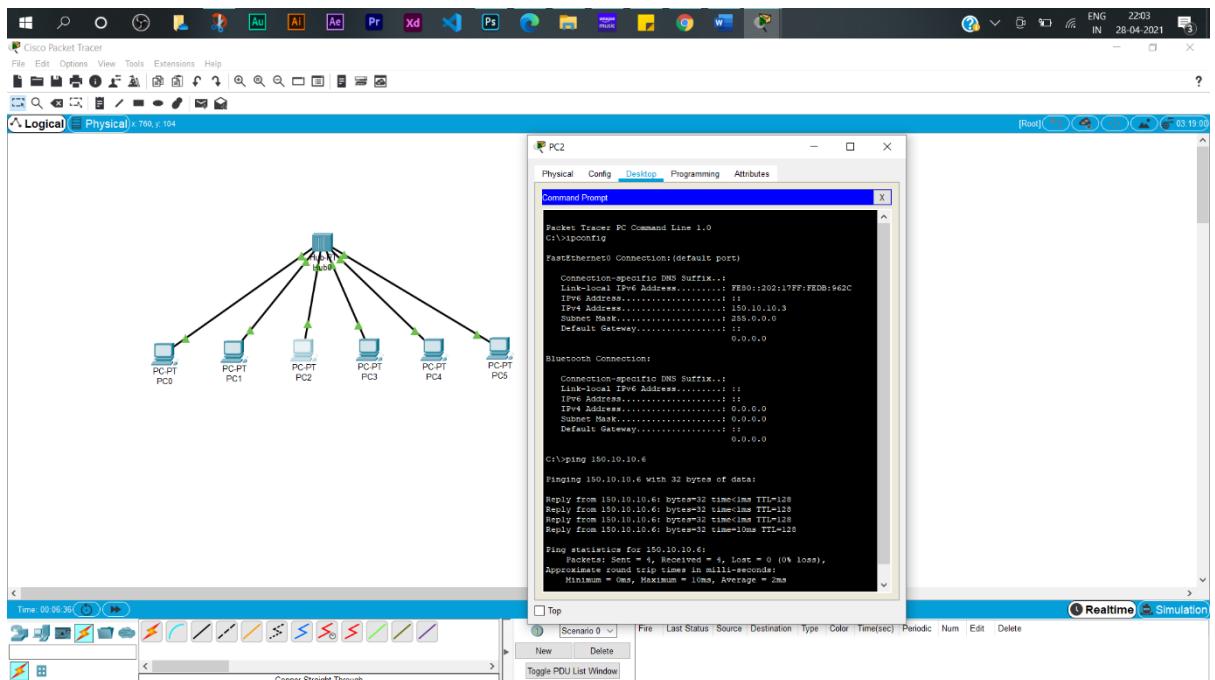
Used to setup LAN, has multiple ports (Star topology)

Broadcasting

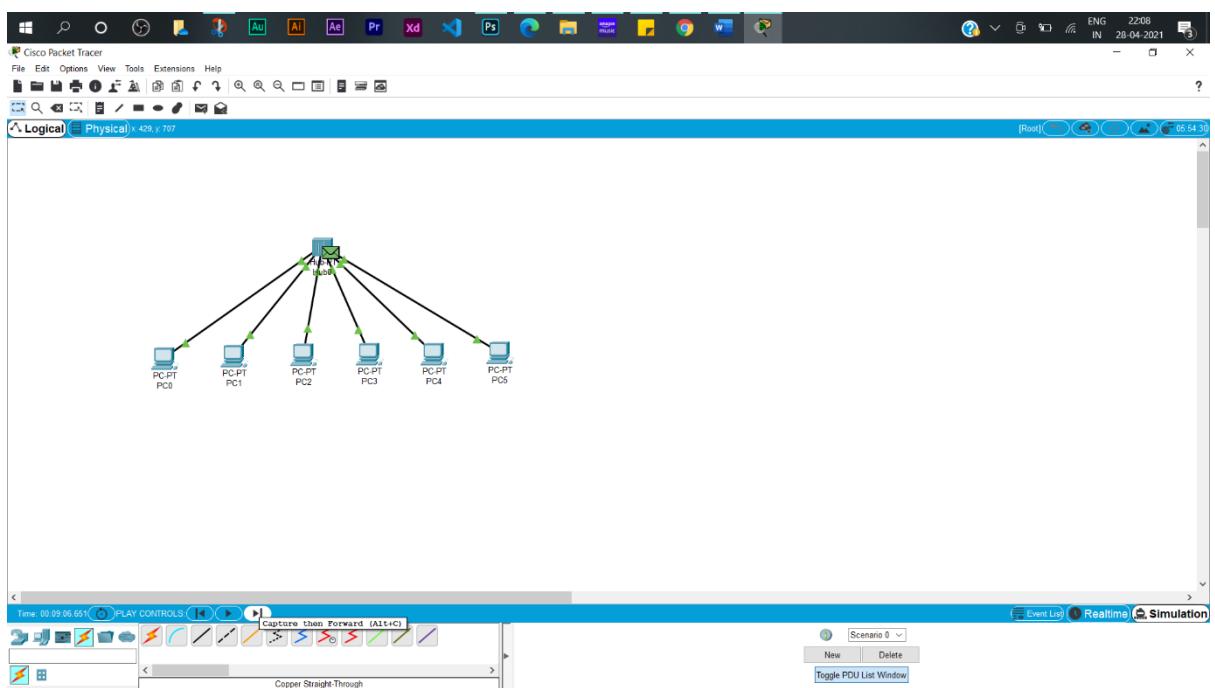
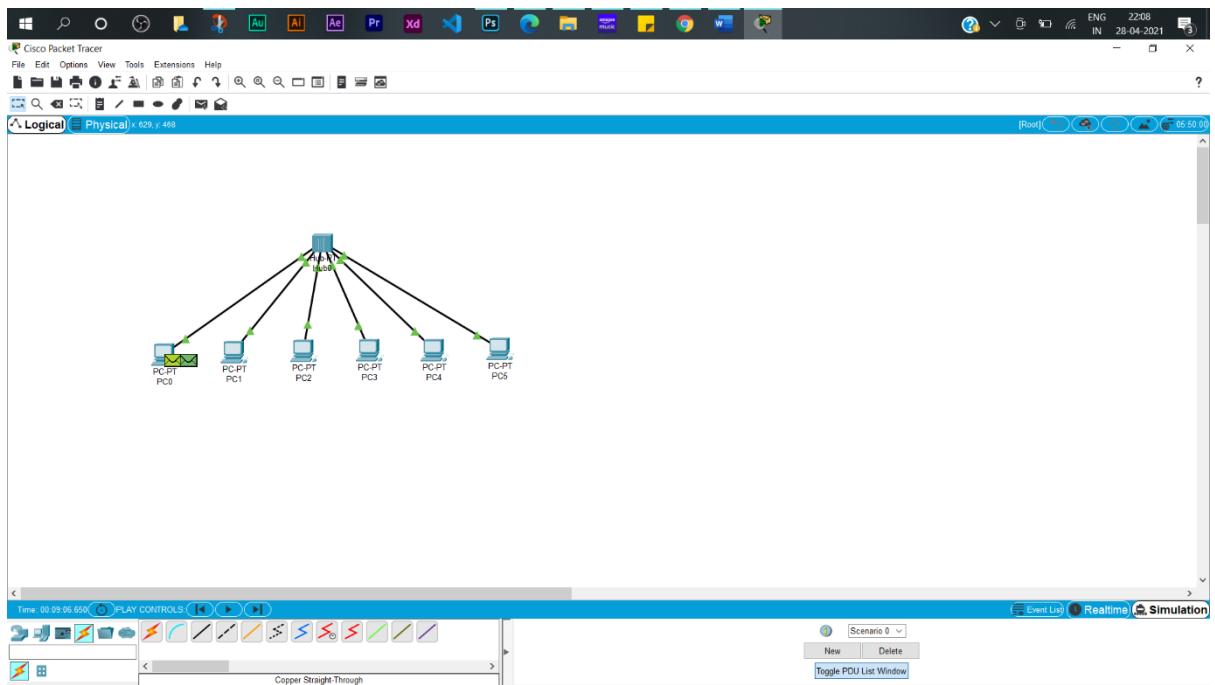


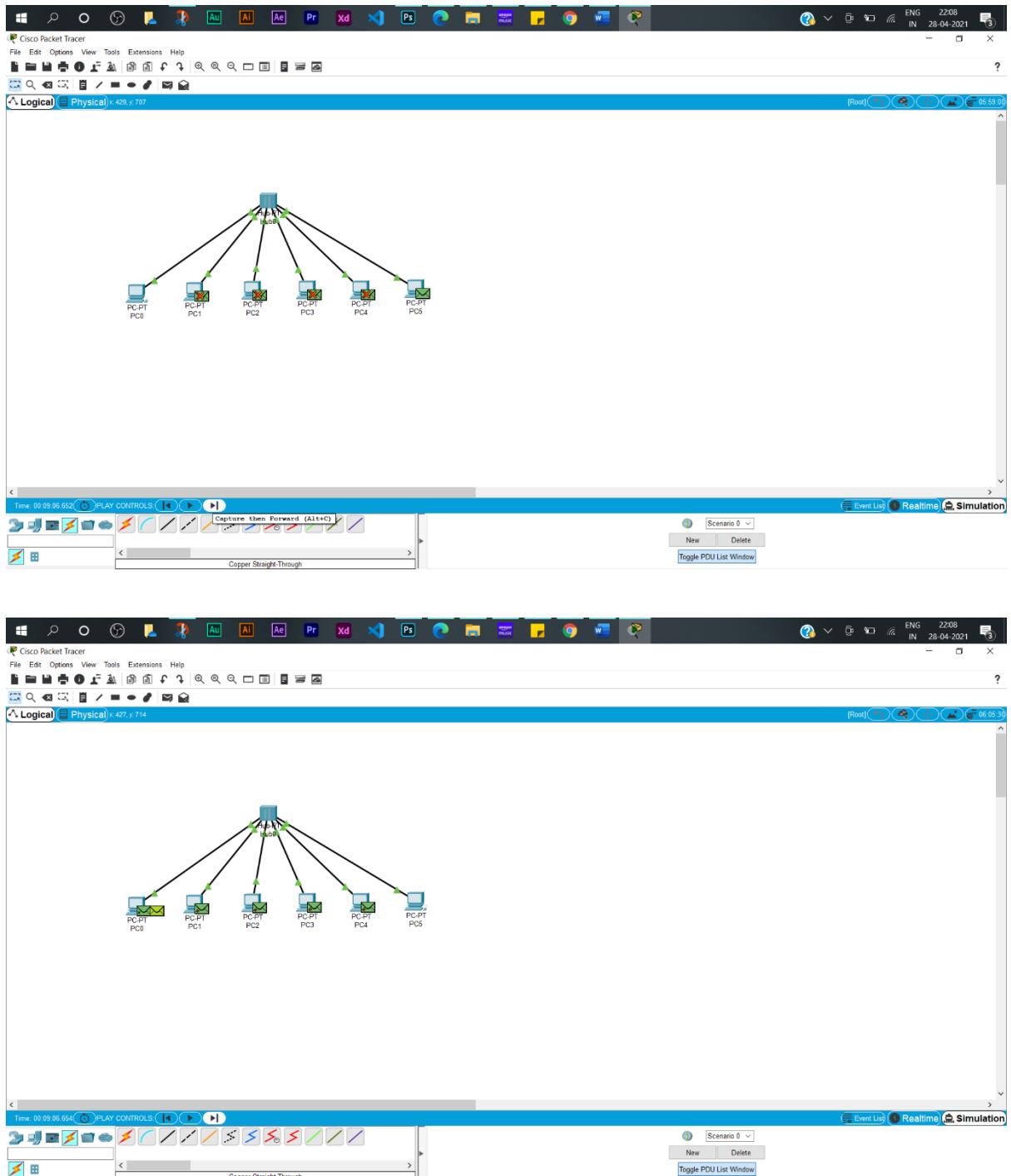


LAN using hubs
Hubs 6 ports
6 computers
Ethernet straight through cable
Turned on turned off



Assign IP config





Using simulation mode, ping to all, discarded ping

3. Switch

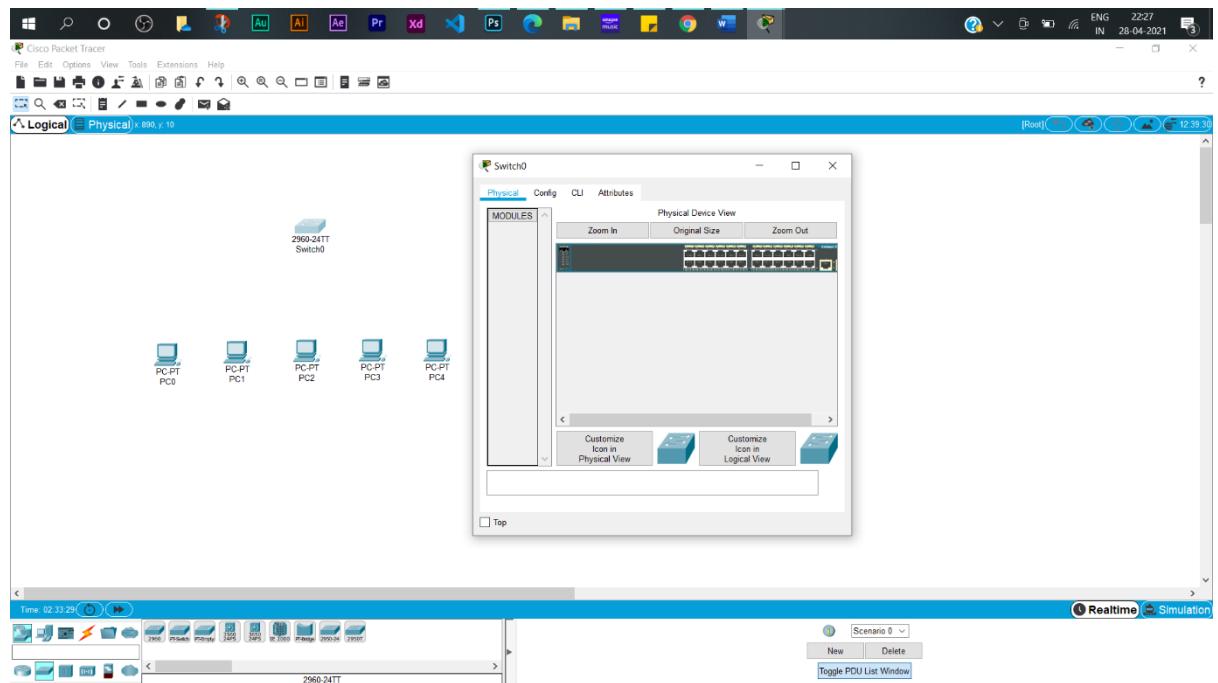
Networking hardware that connects devices on a computer network to establish a local area network

Has memory, stores MAC Address table

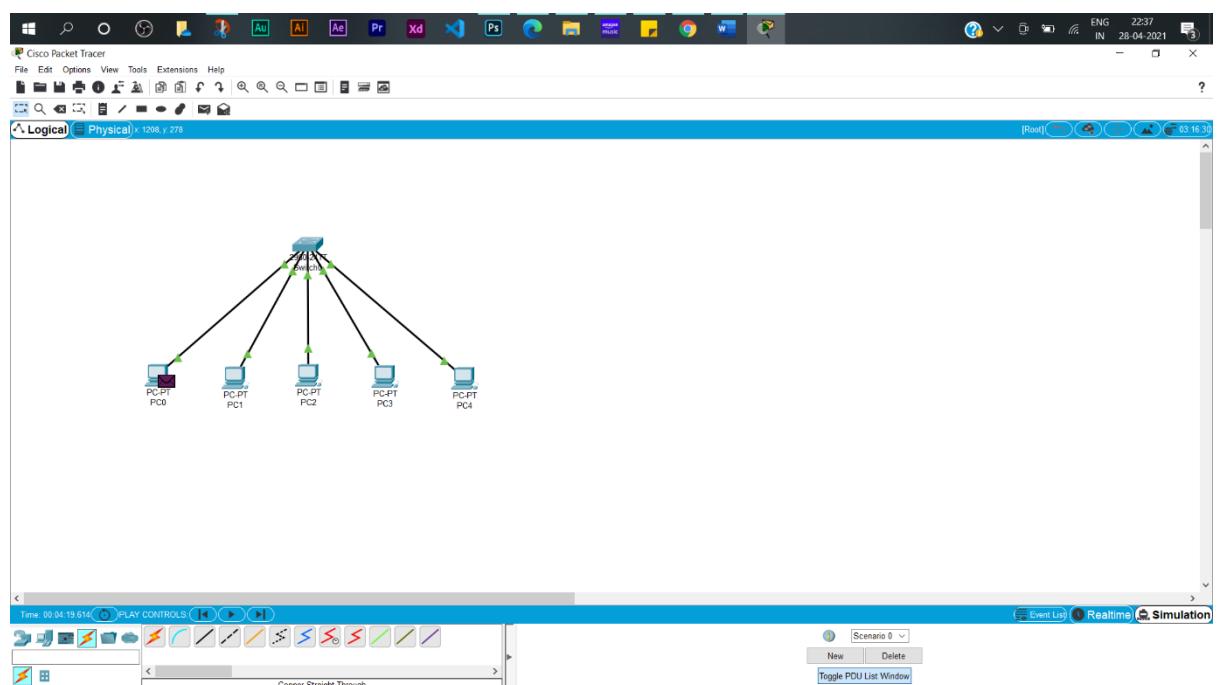
Sends only to destination

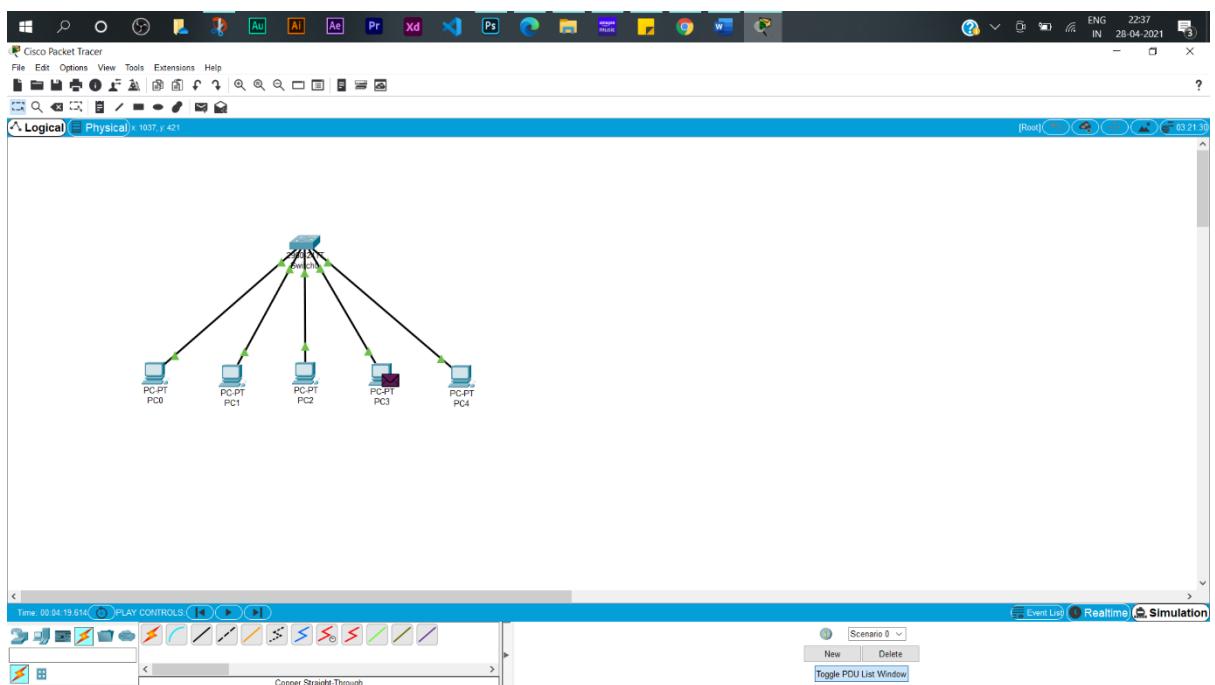
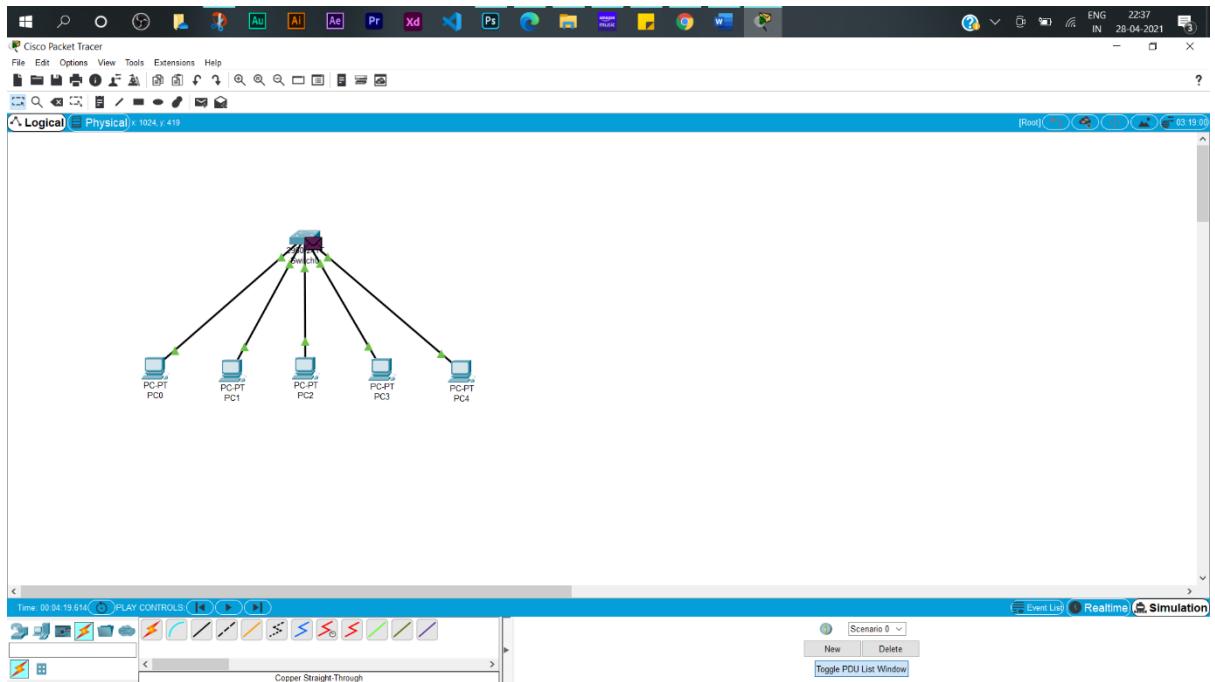
Data-link layer

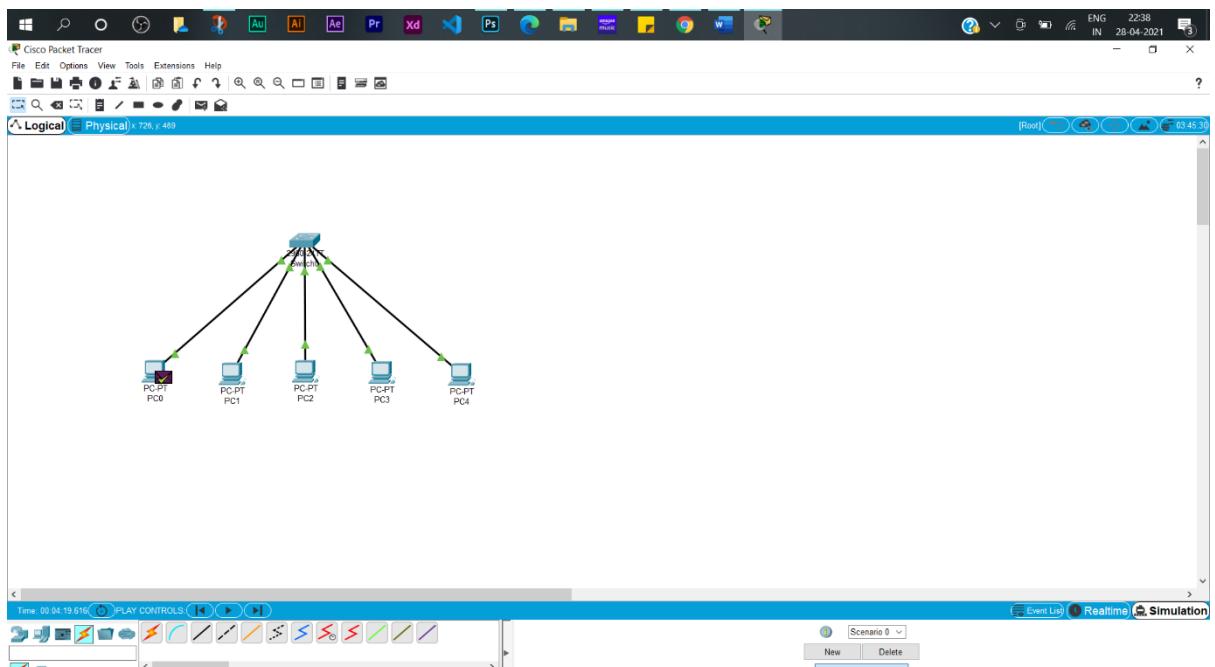
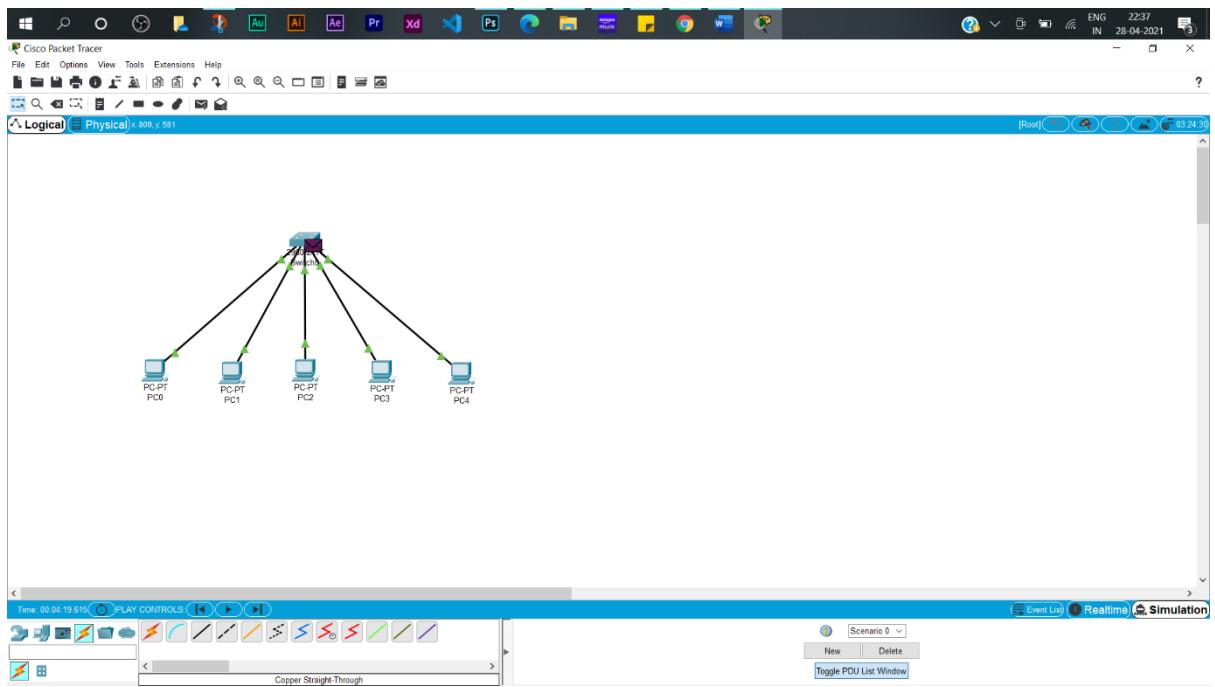
Uncasting and broadcast



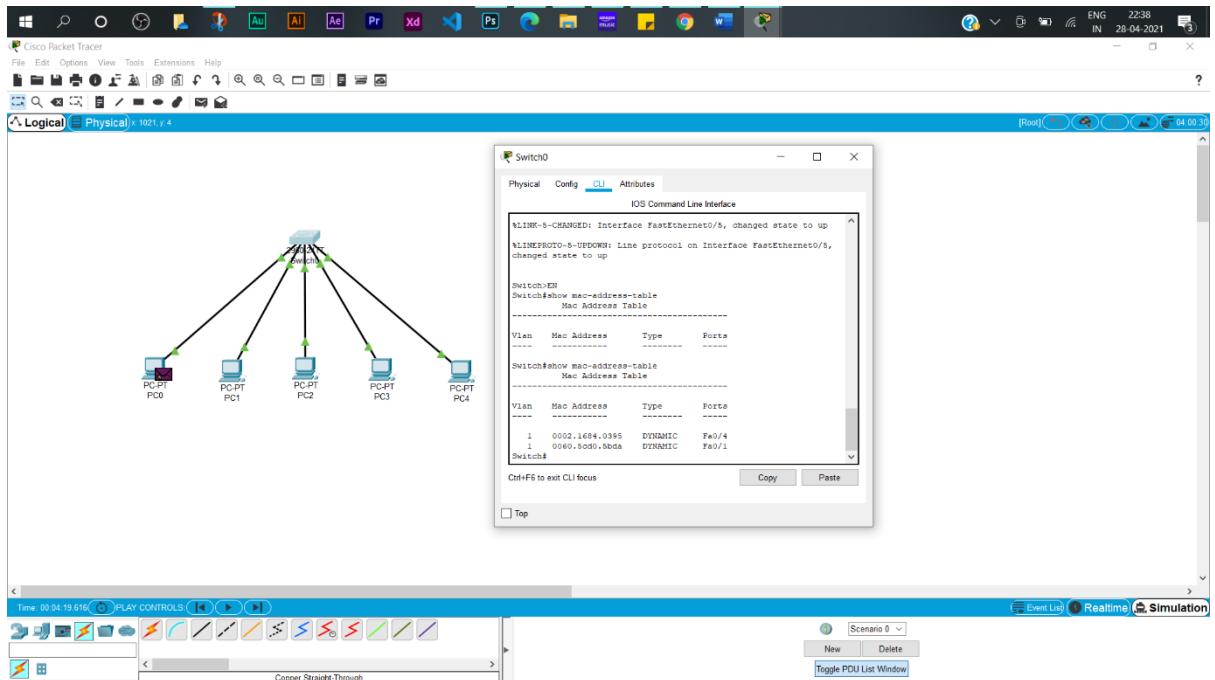
LAN using switch
Switch 2960
24 fast ethernet ports 2 gigabit ethernet ports
Ethernet straight through cable
Assign Ip address







Simulation



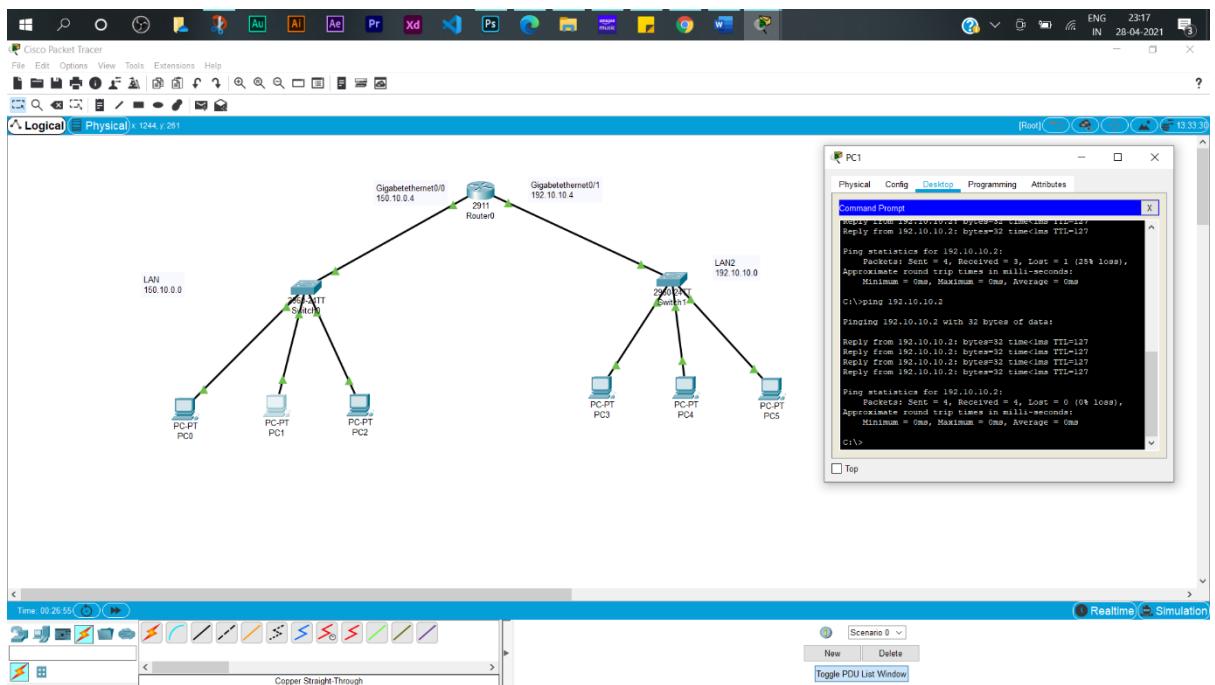
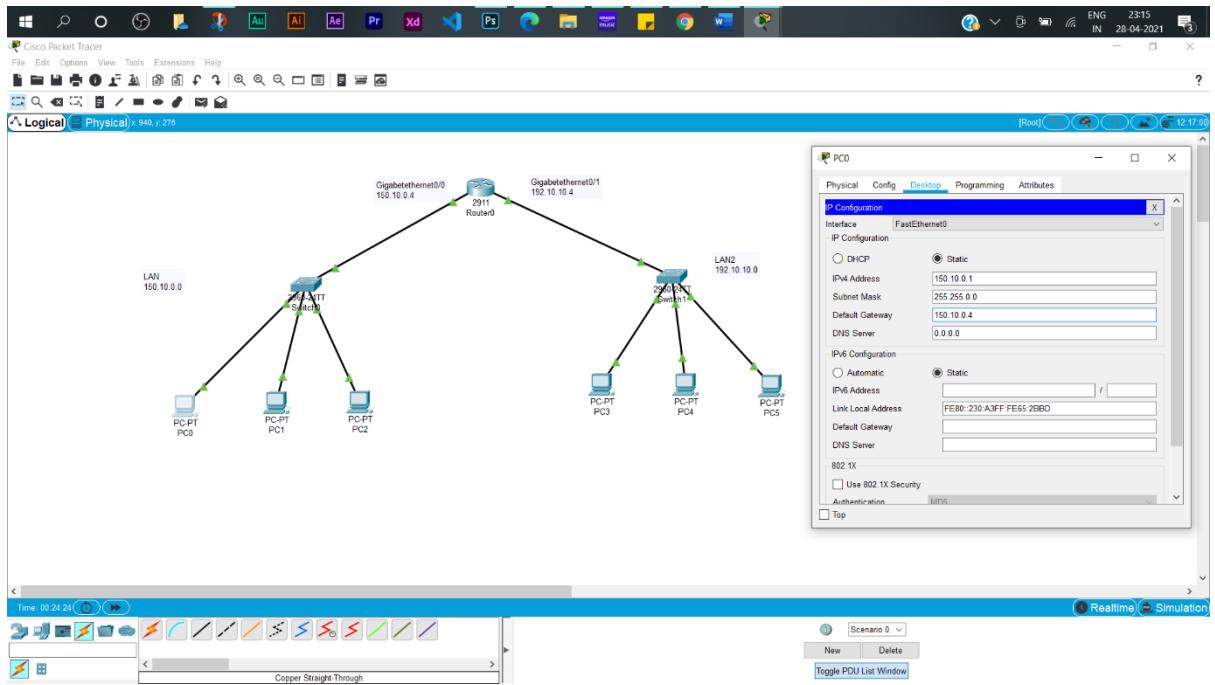
Show mac address table

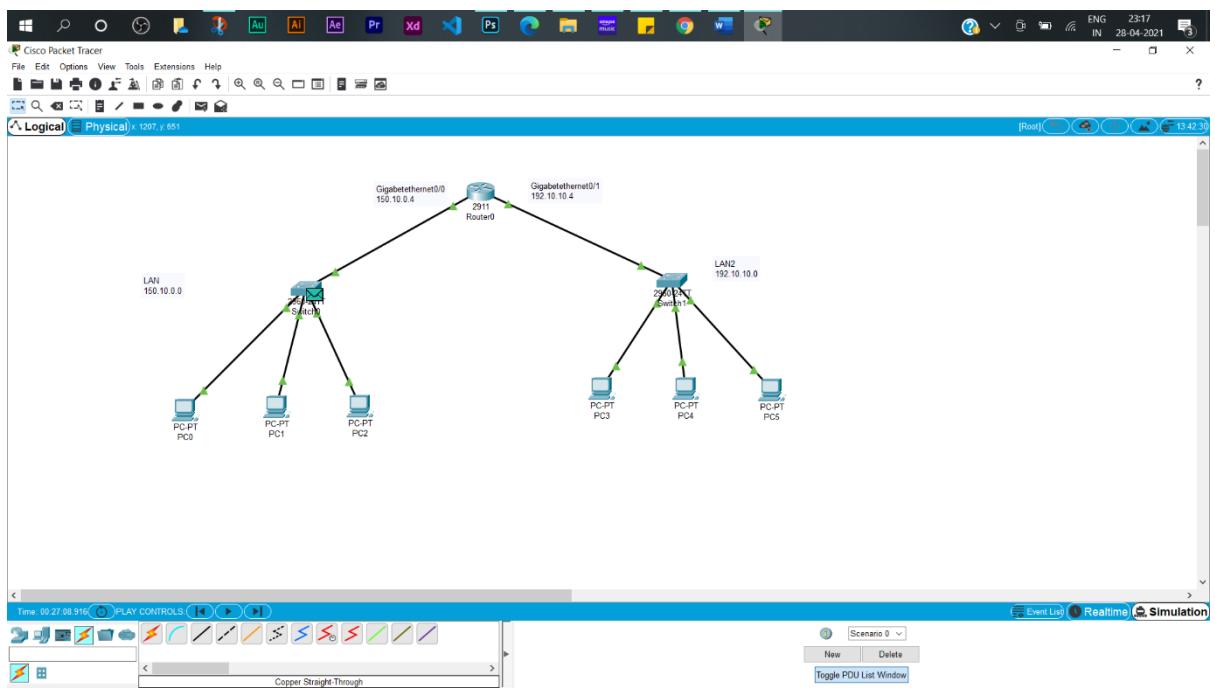
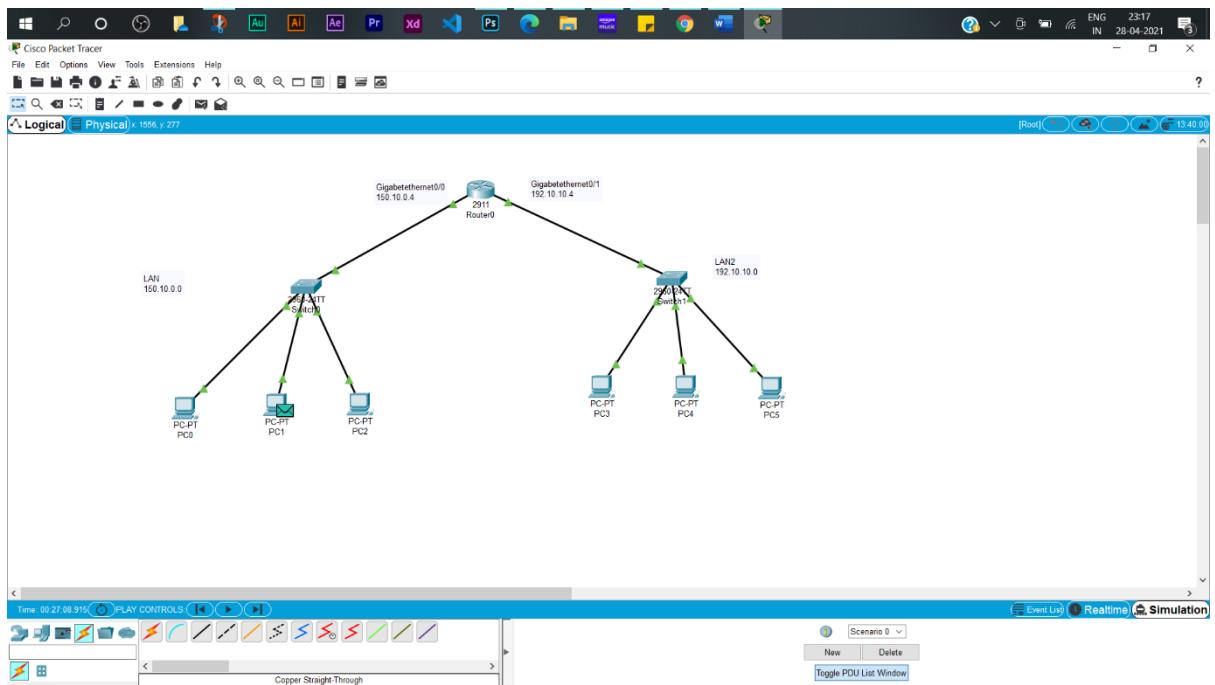
4. Router

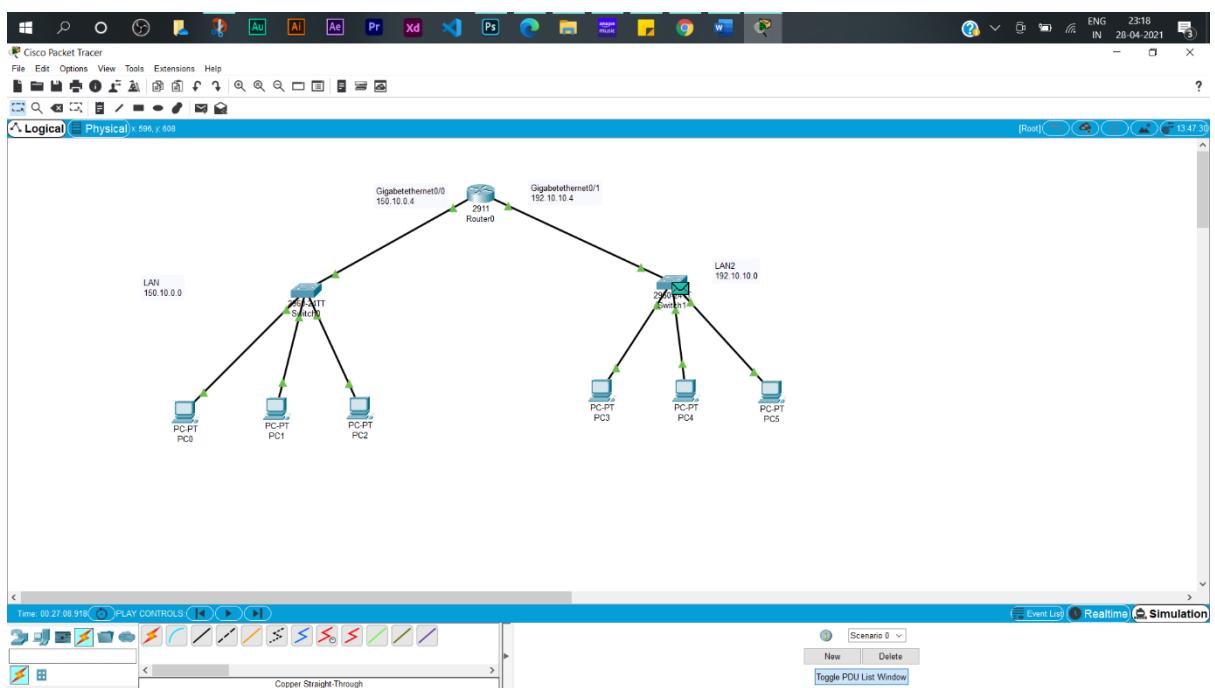
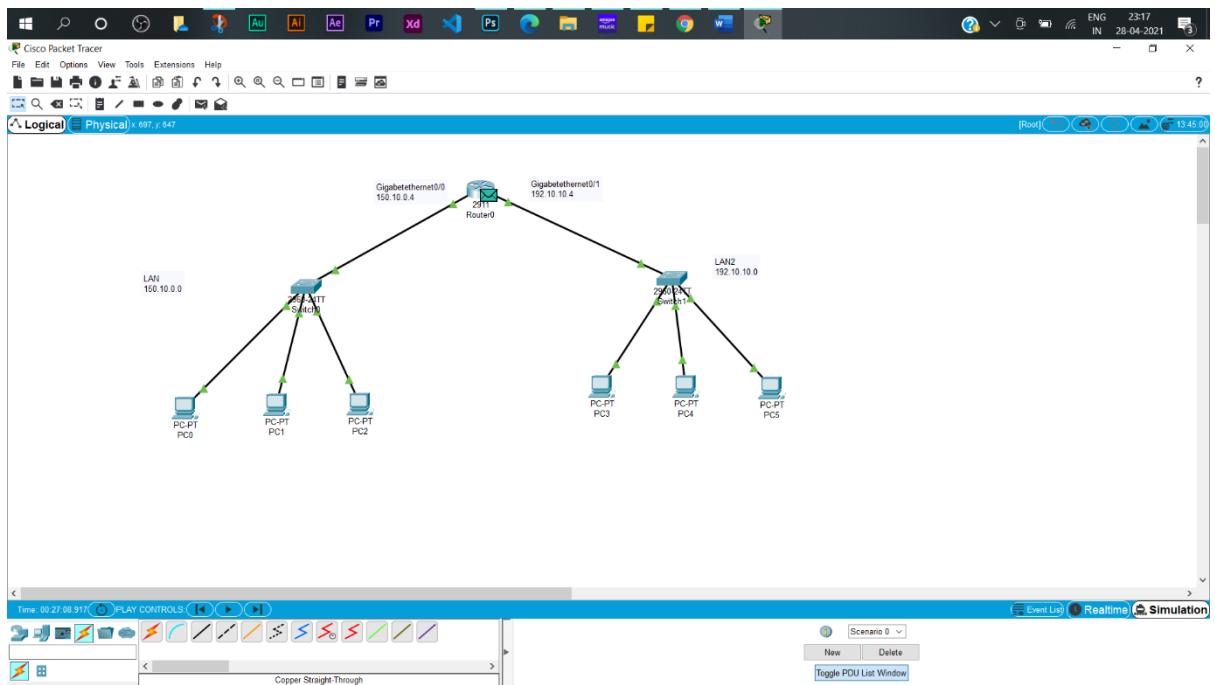
Connects two or more different LANs
Network layer device
Stores routing table

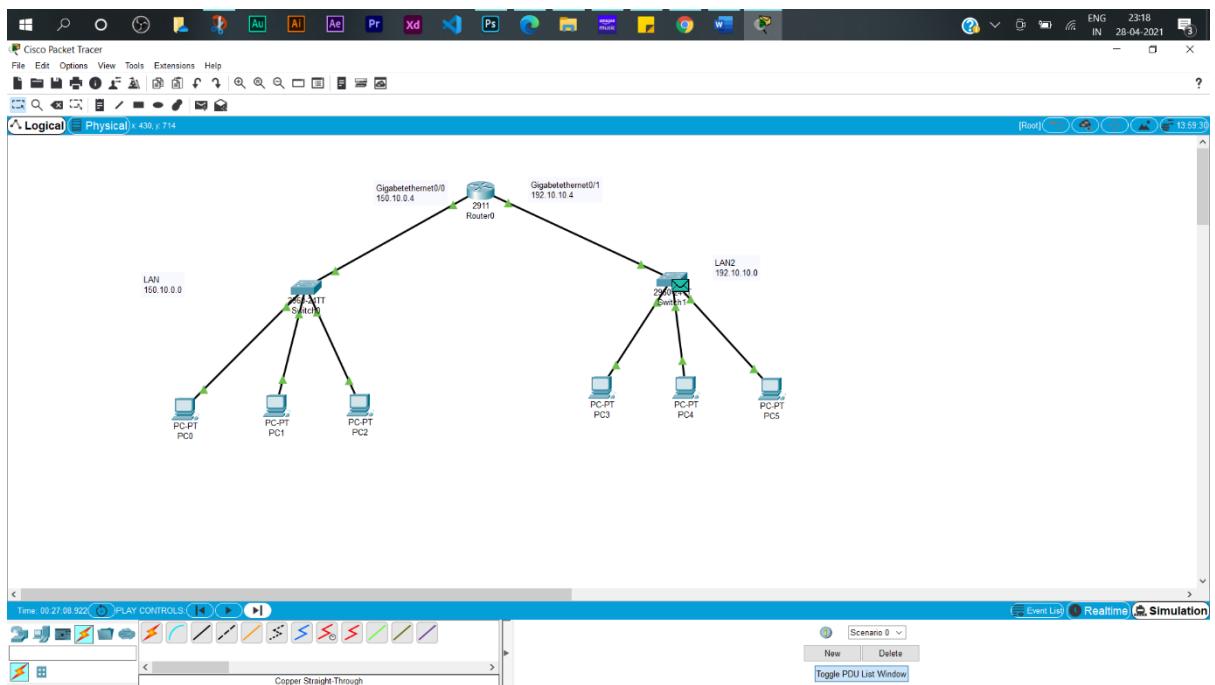
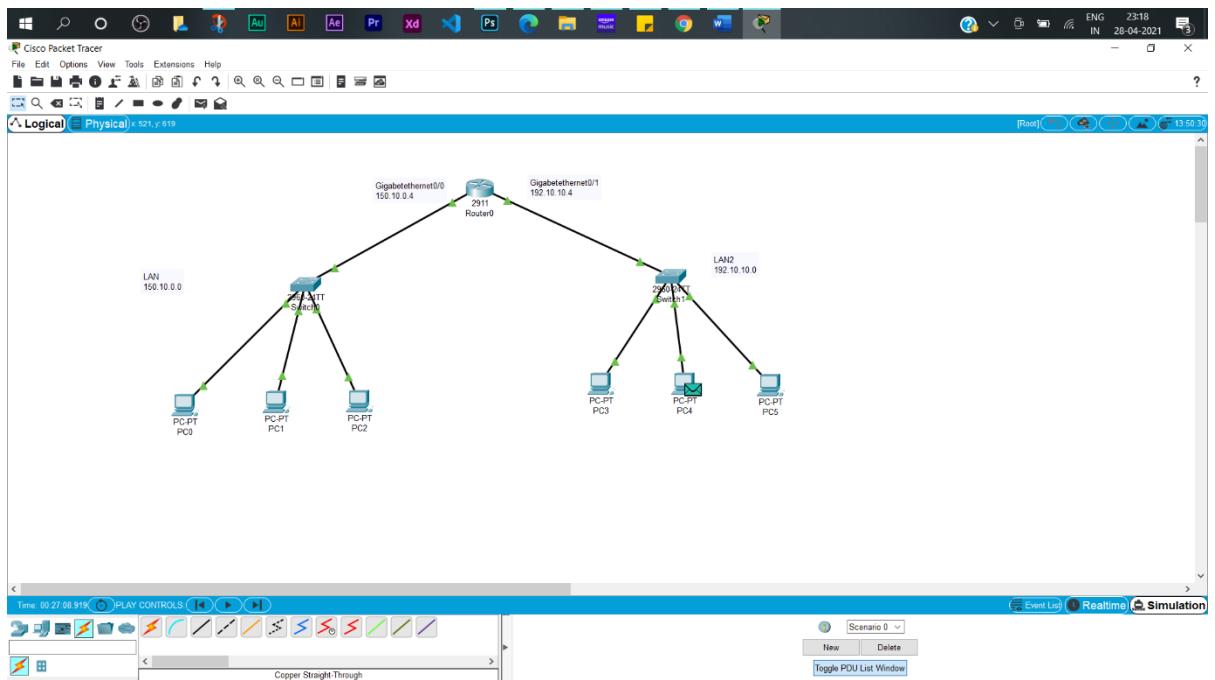
2 switches
3 pcs + 3 pcs
Assign ip address
2911 router
Ethernet straight through cable
Gigabit ethernet port
Assign ip address to router
Default gateway for computers

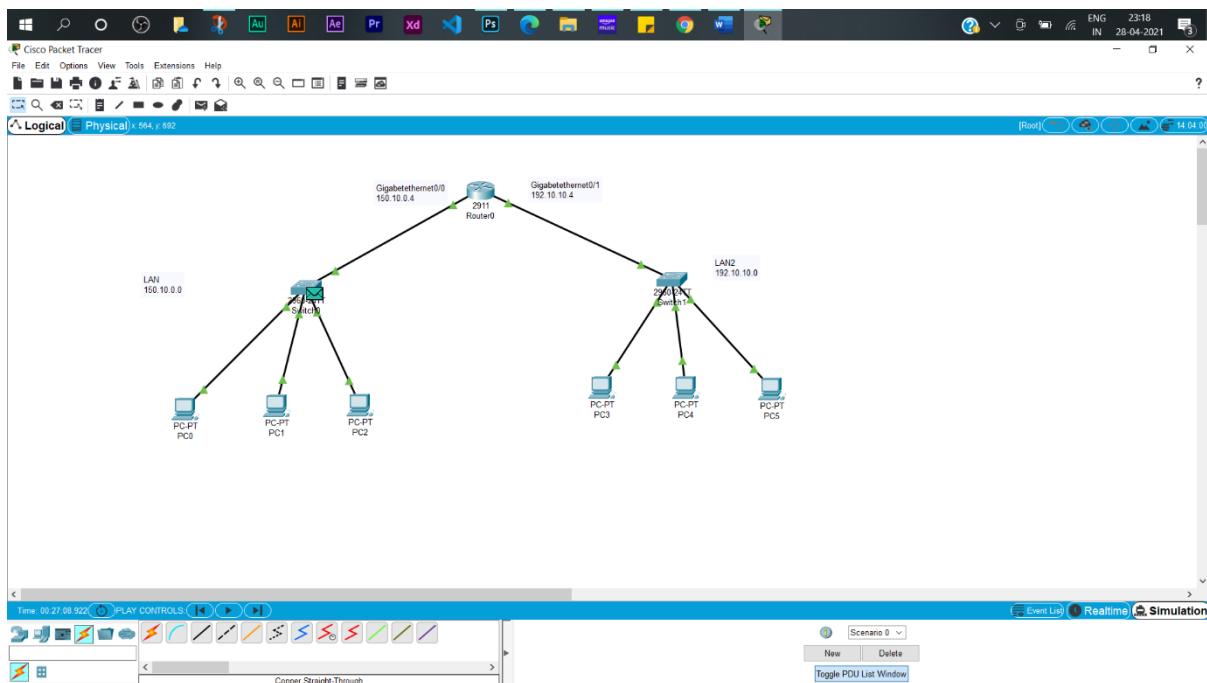
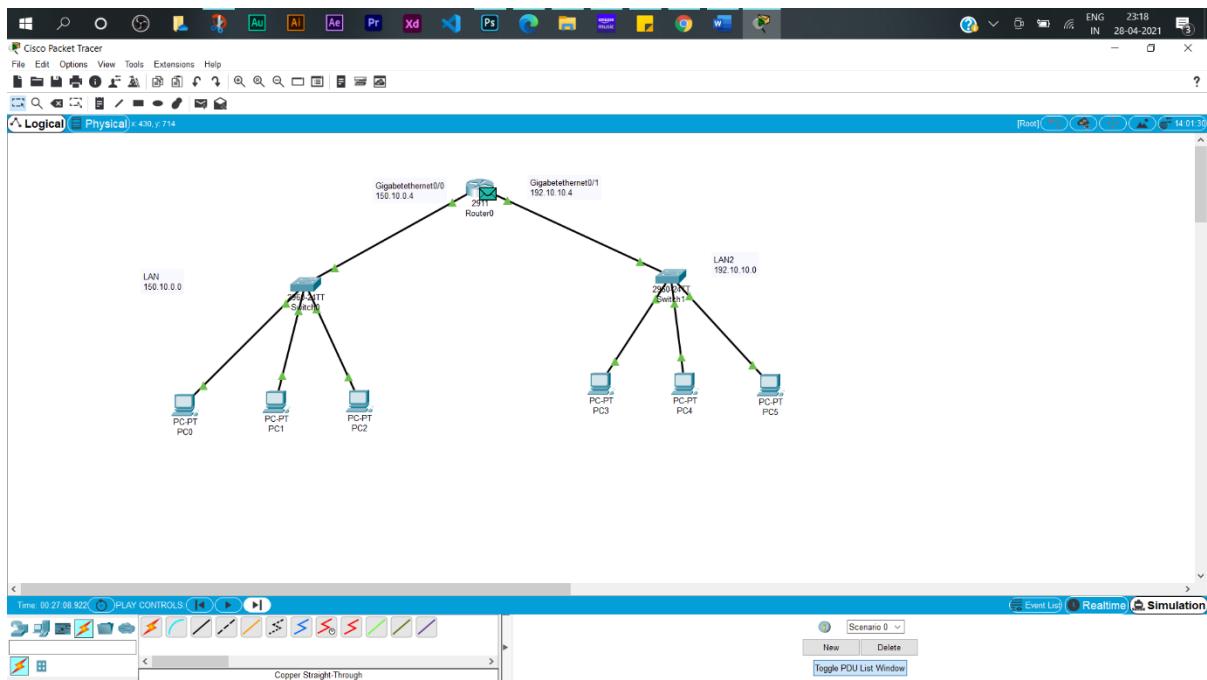
Simulation

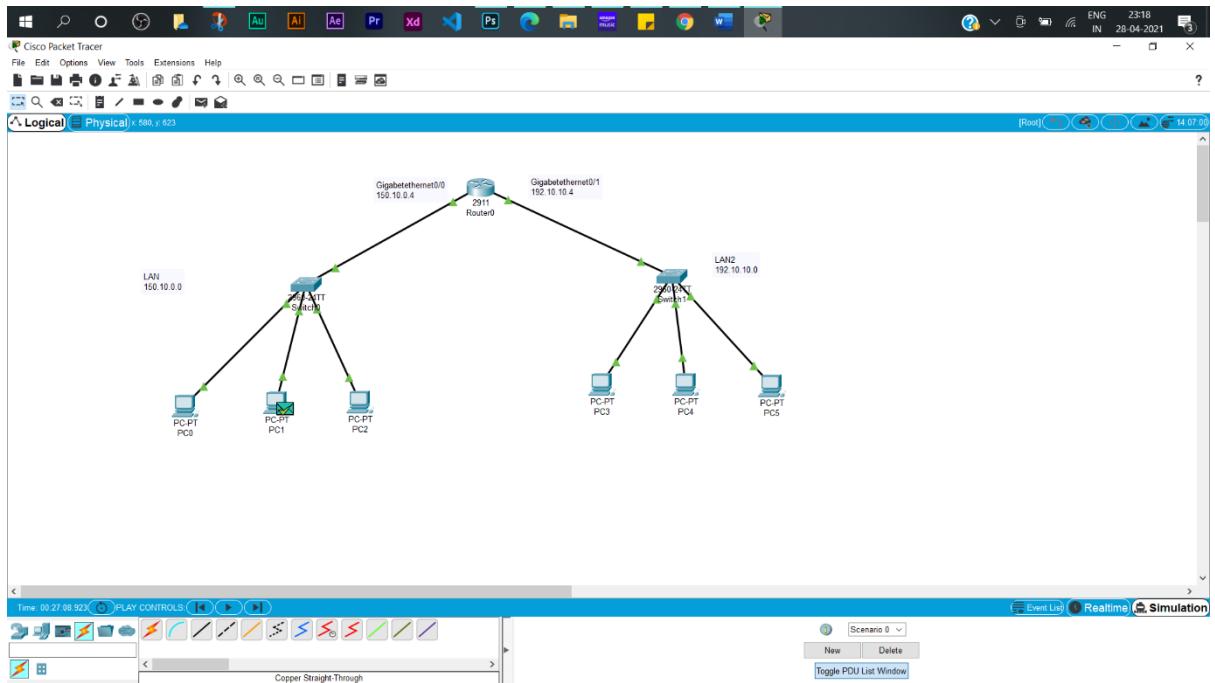












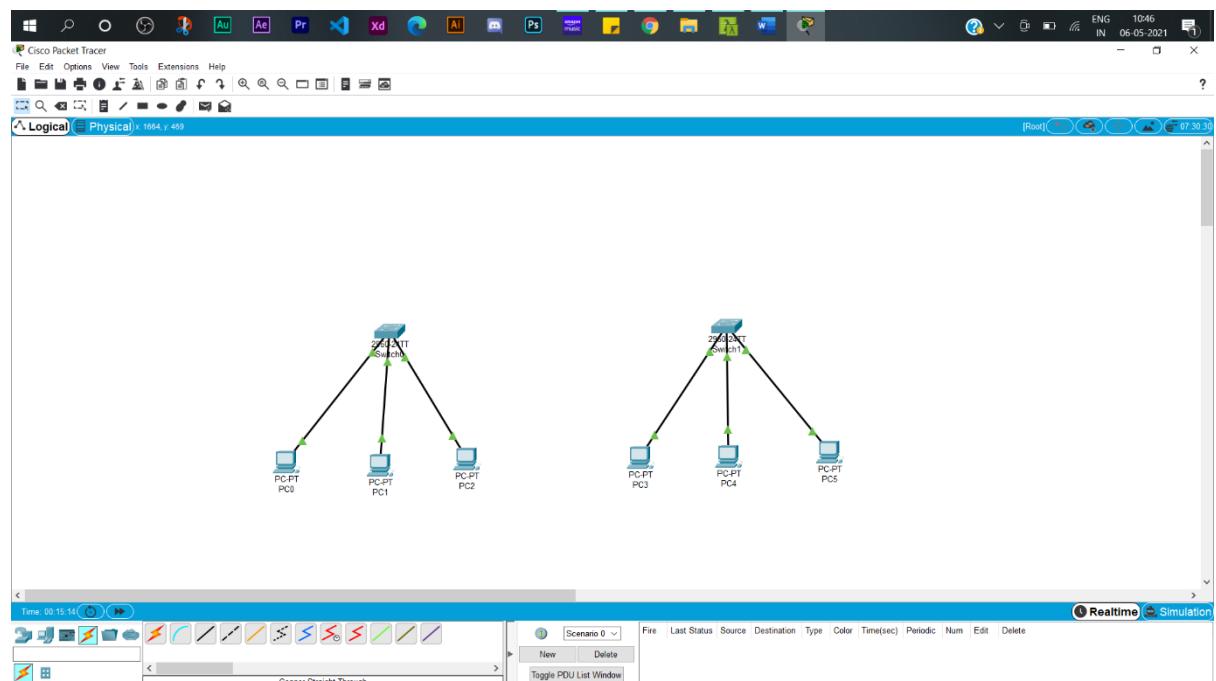
5. Repeater

Data signals become too weak or corrupted after travelling
repeater regenerates the signal over the same network

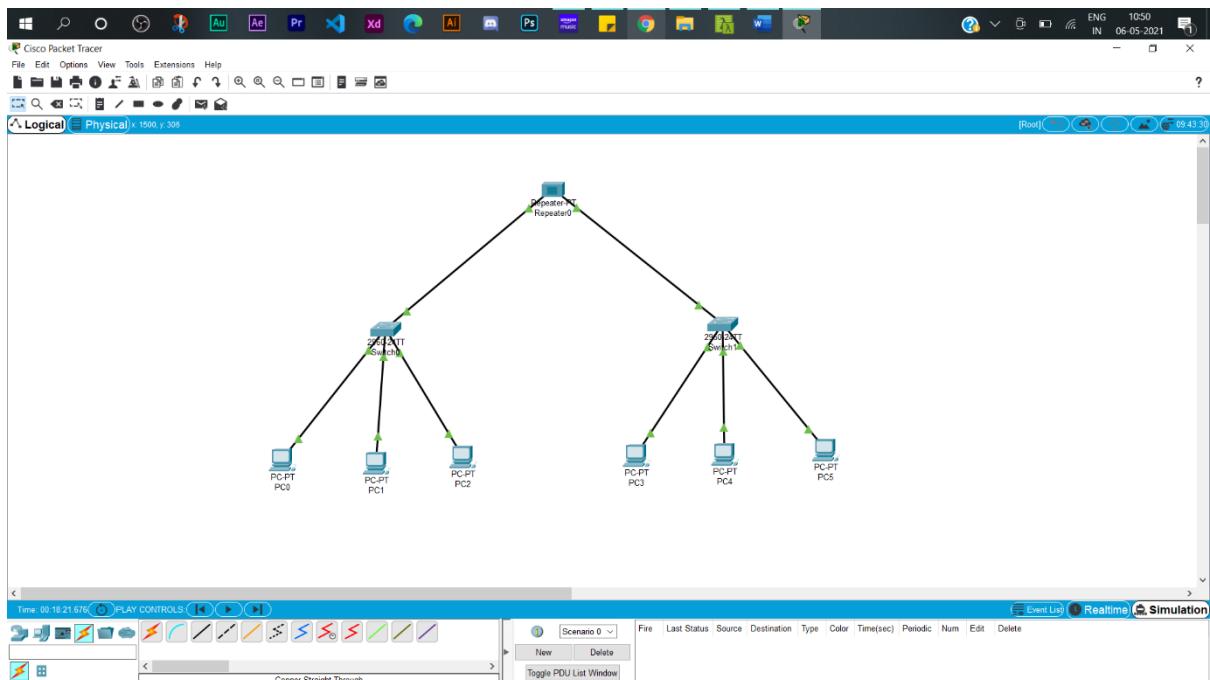
Physical layer

Do not amplify

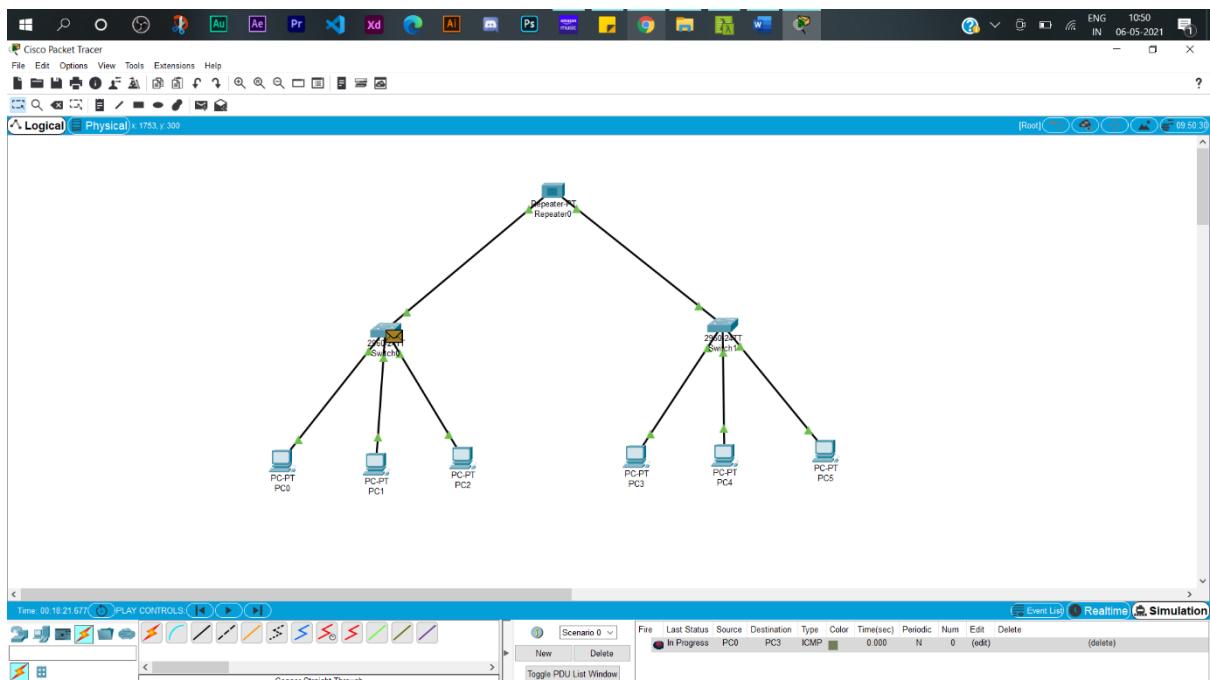
2 port device



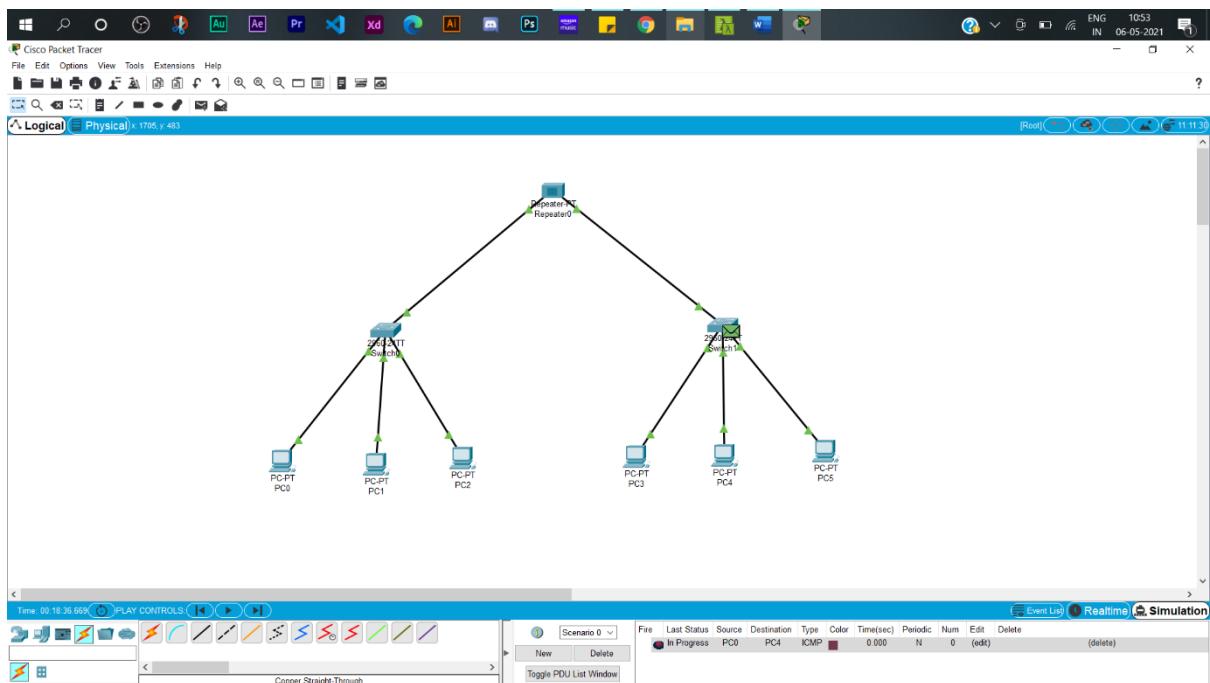
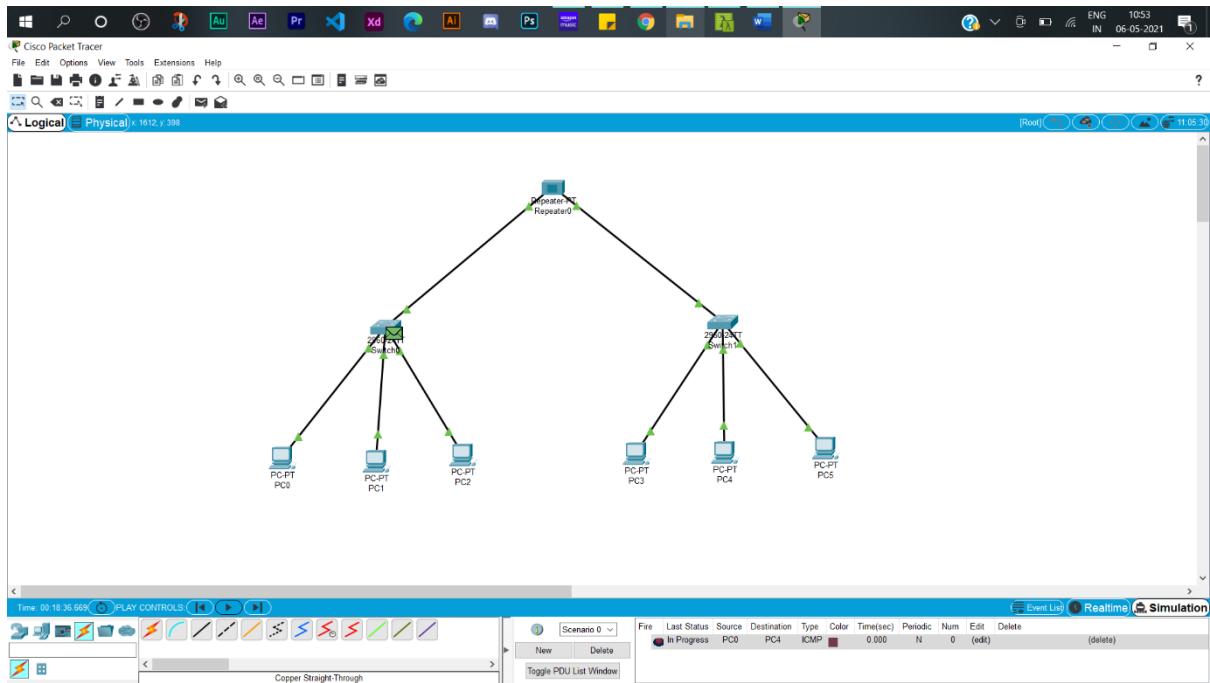
Switch and computers, assign IP addresses

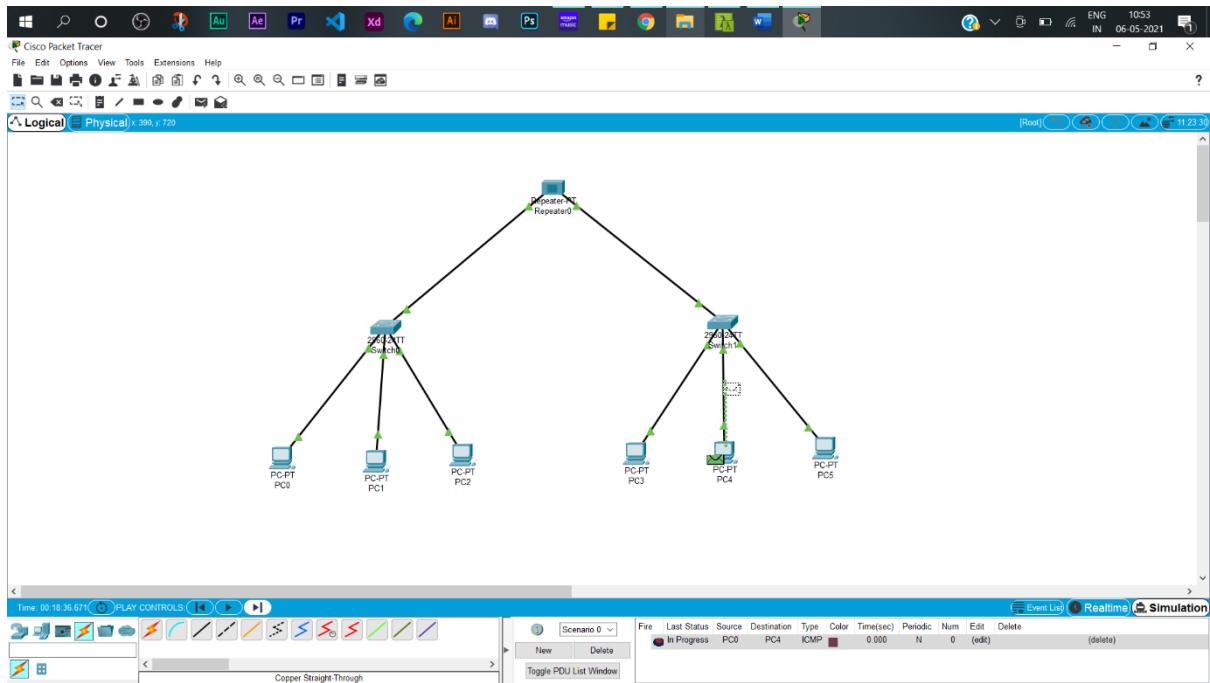


Connect to repeater



Simulation to send ping





6. Simulation of Unicast Routing protocol

RIP (routing information protocol) - Distance vector routing

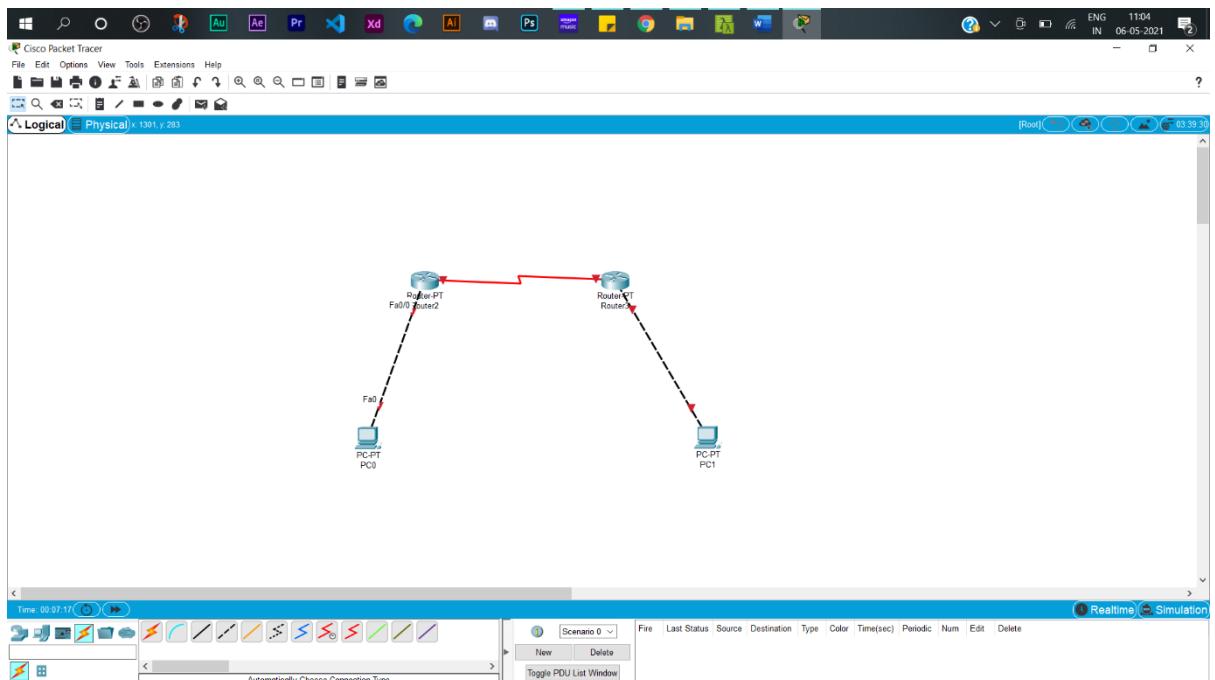
The Routing Information Protocol (RIP) is one of a family of IP Routing protocols, and is an Interior Gateway Protocol (IGP) designed to distribute routing information within an Autonomous System (AS). RIP is a simple vector routing protocol with many existing implementations in the field.

Updates routing table

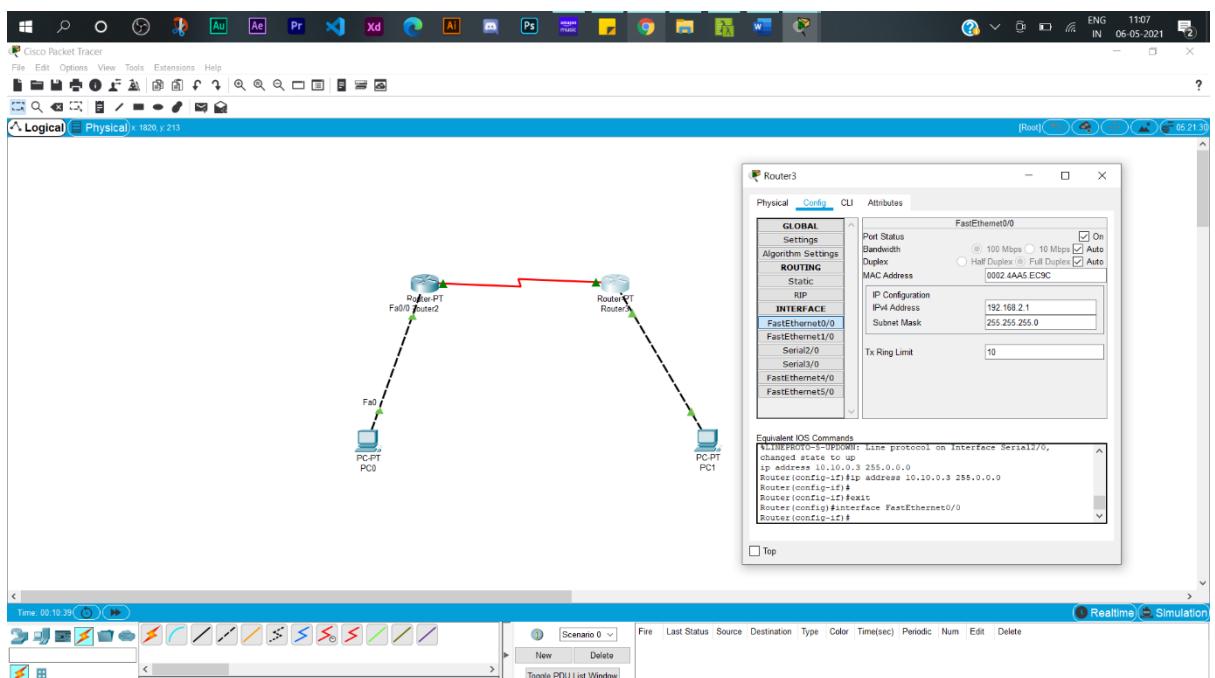
Old, new, modified table

Graph, weight

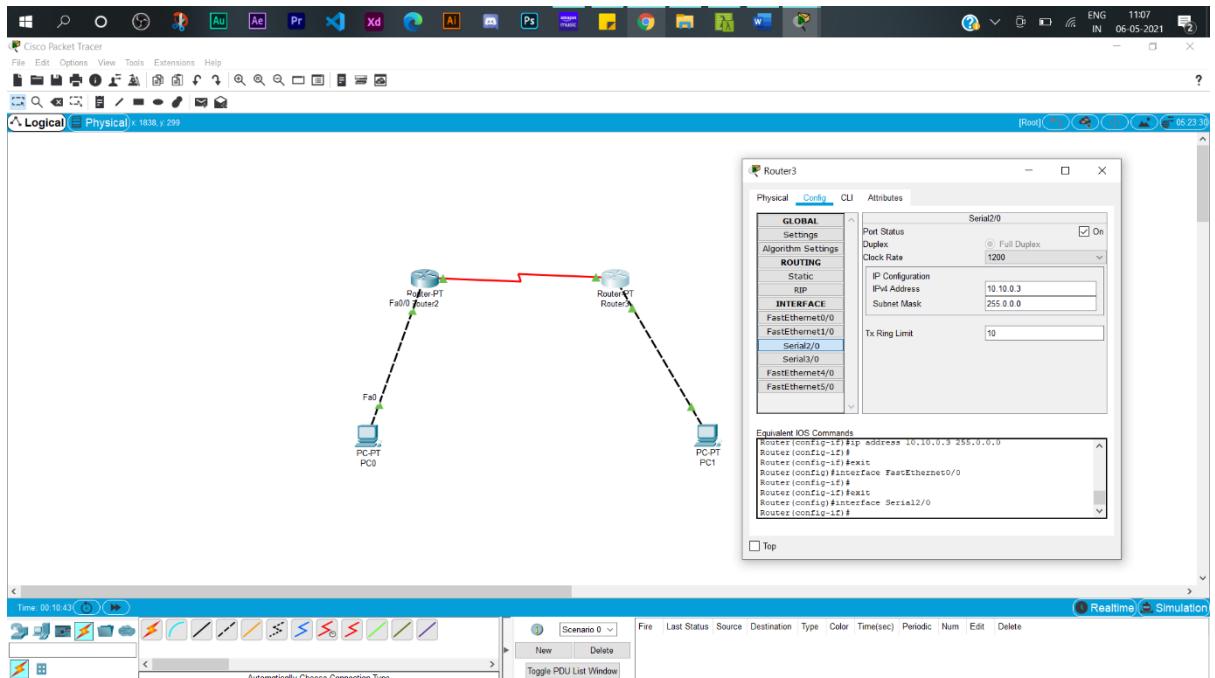
Split horizon, poison reverse defining infinity methods are used to overcome disadvantages like two node instability



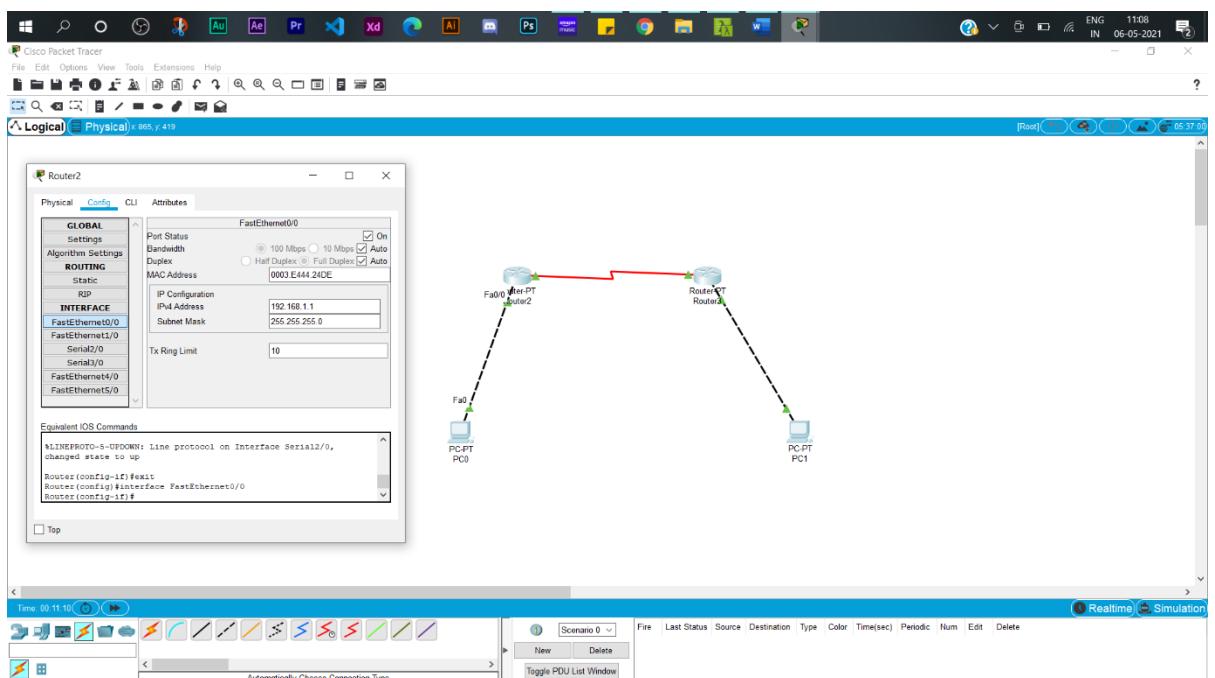
Generic routers and computers

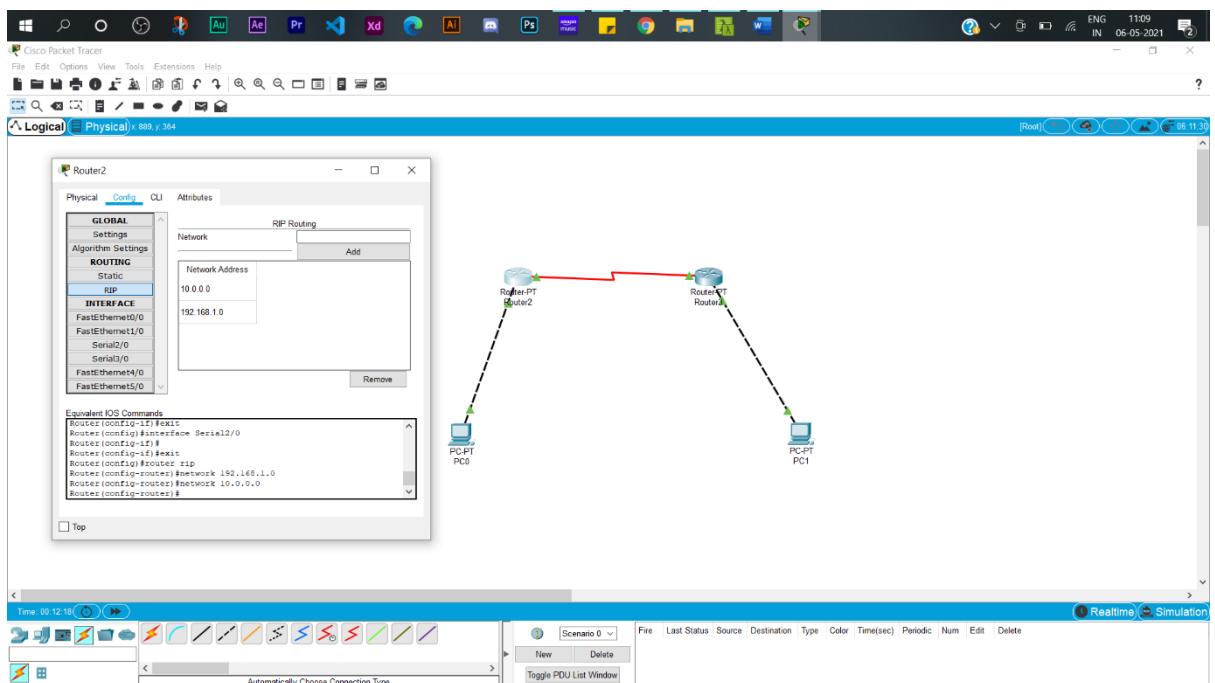
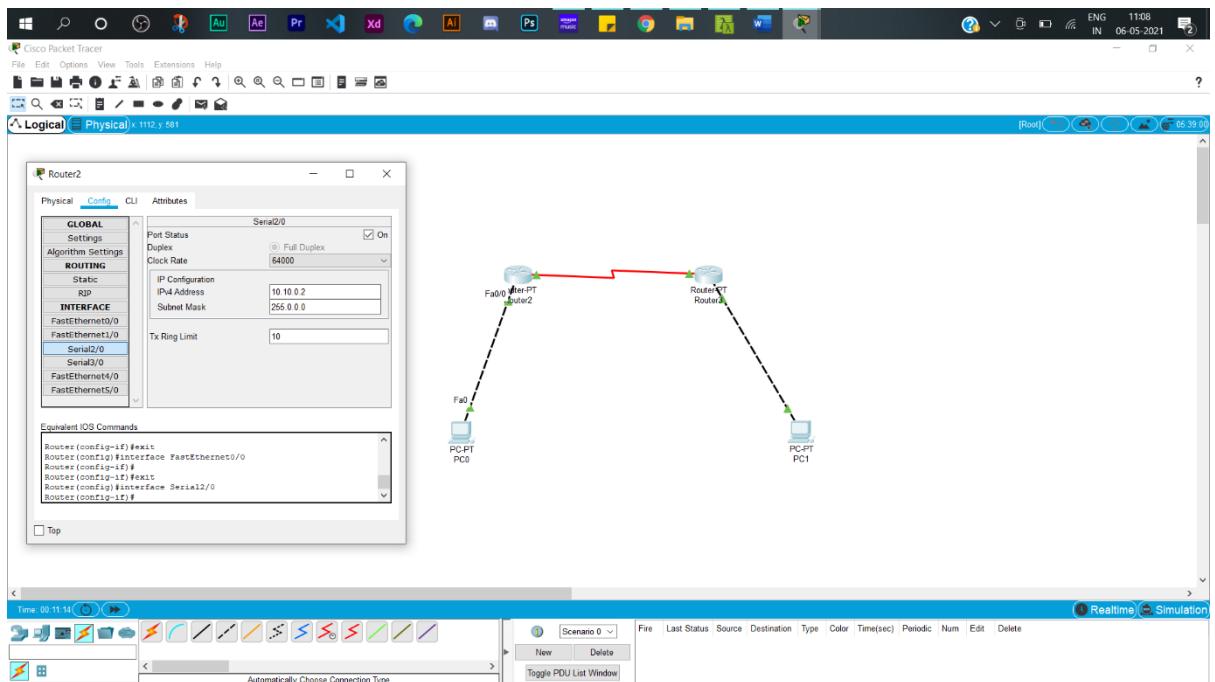


Assign IP address and switch on

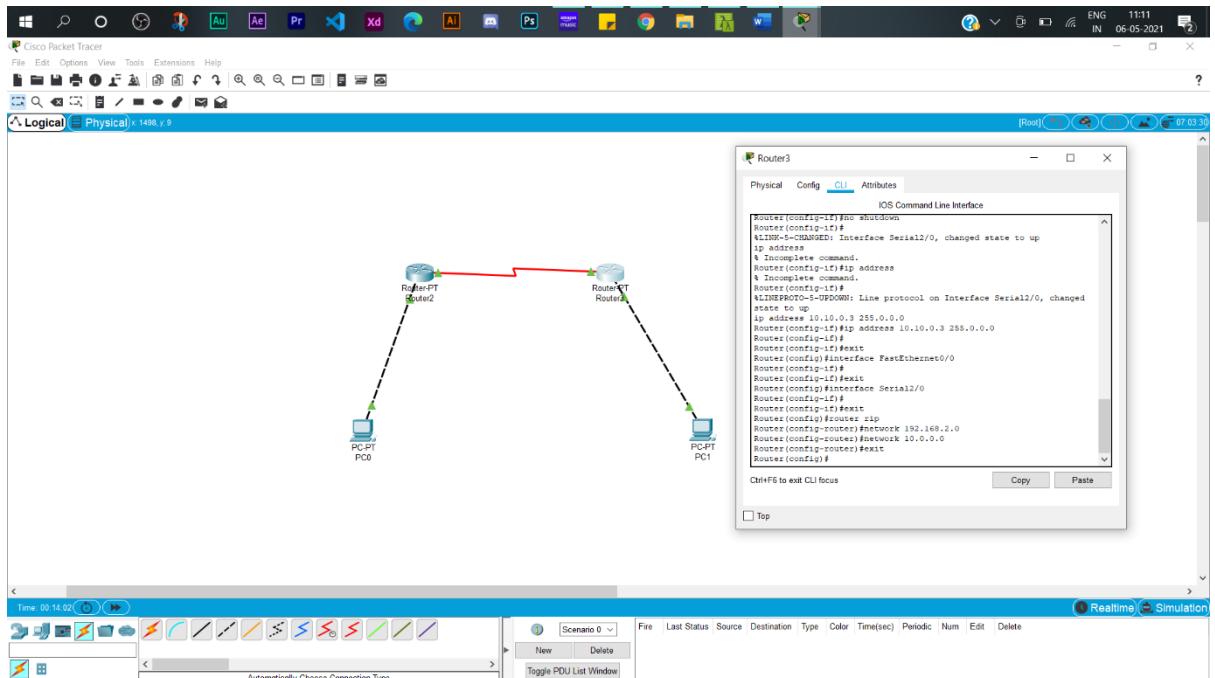


Set timer

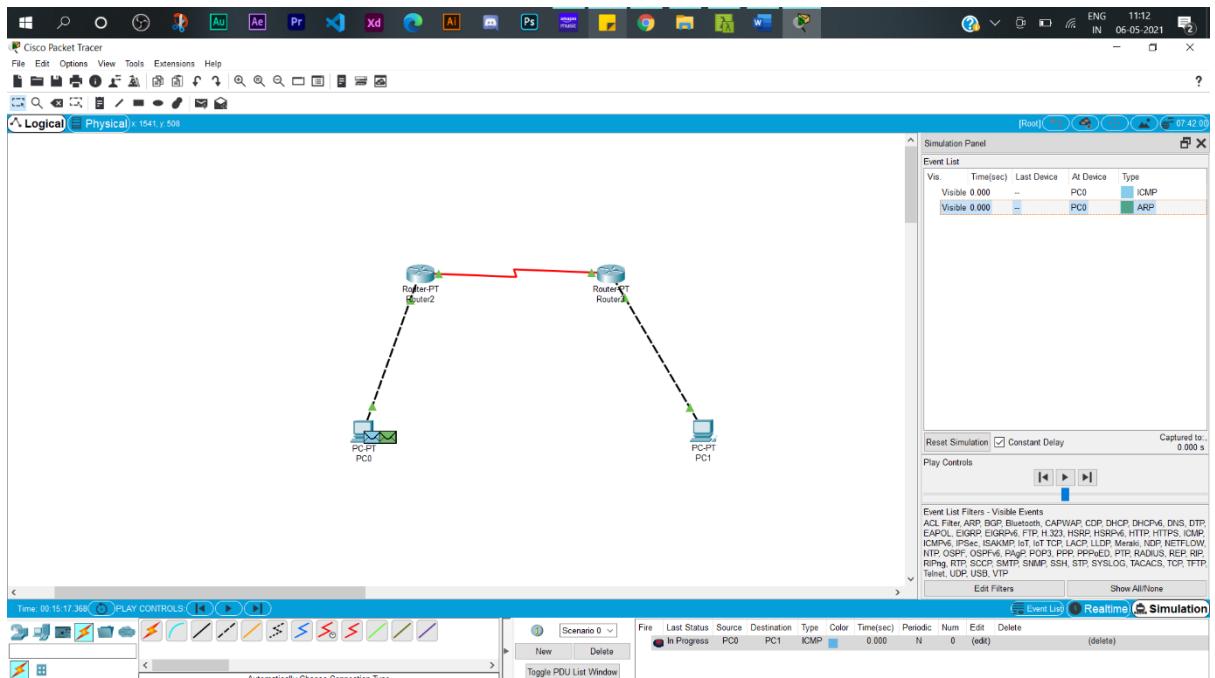




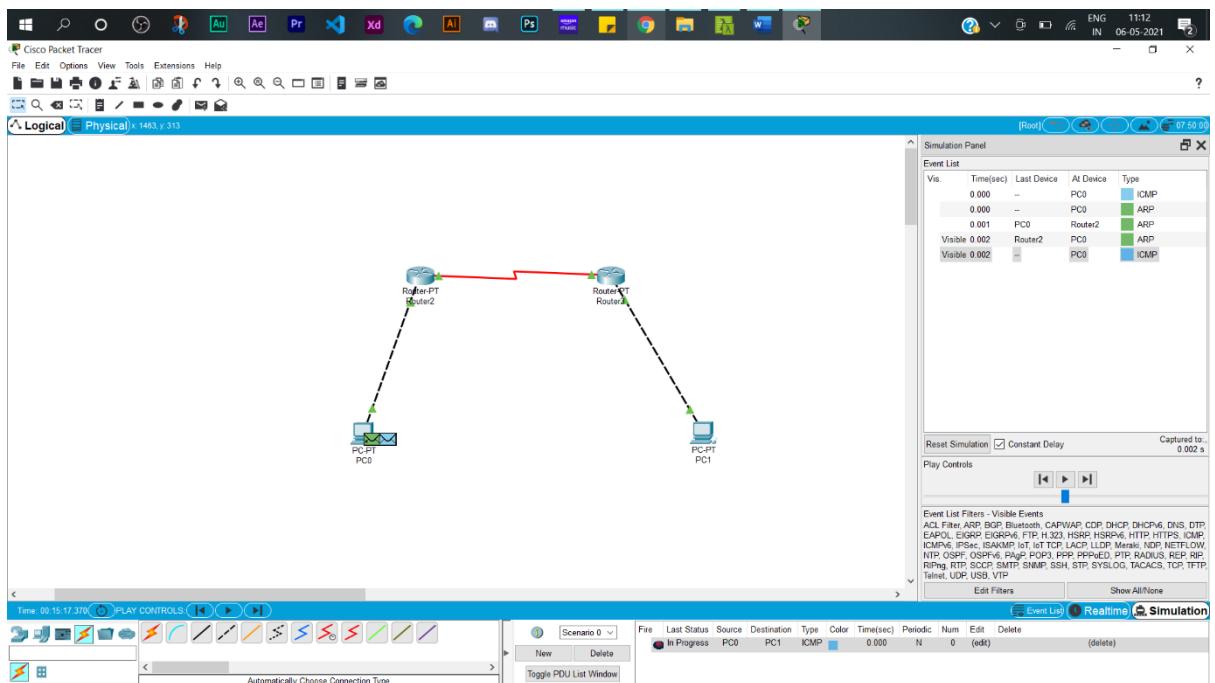
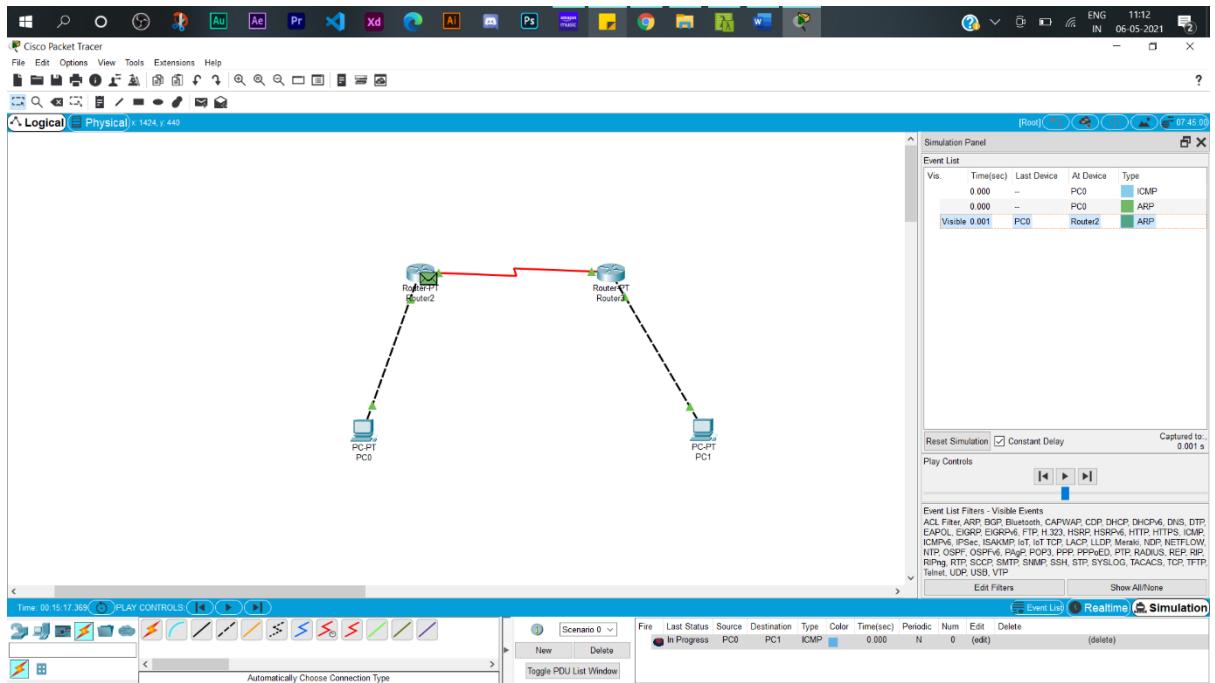
Add IP address to RIP

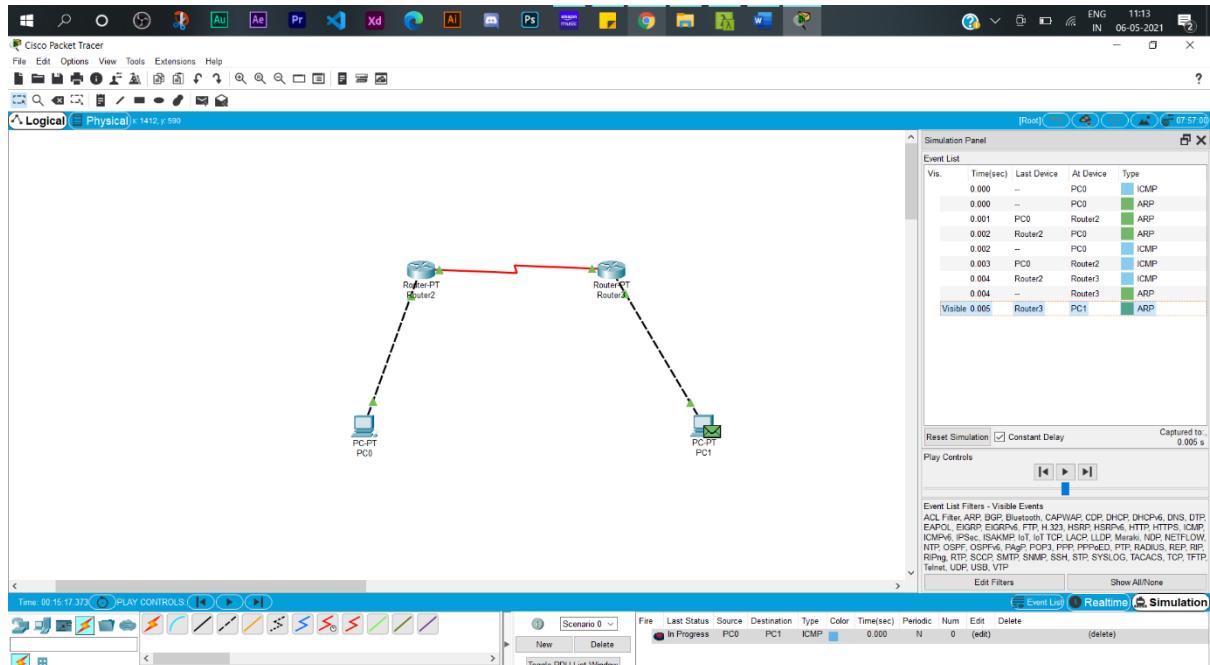
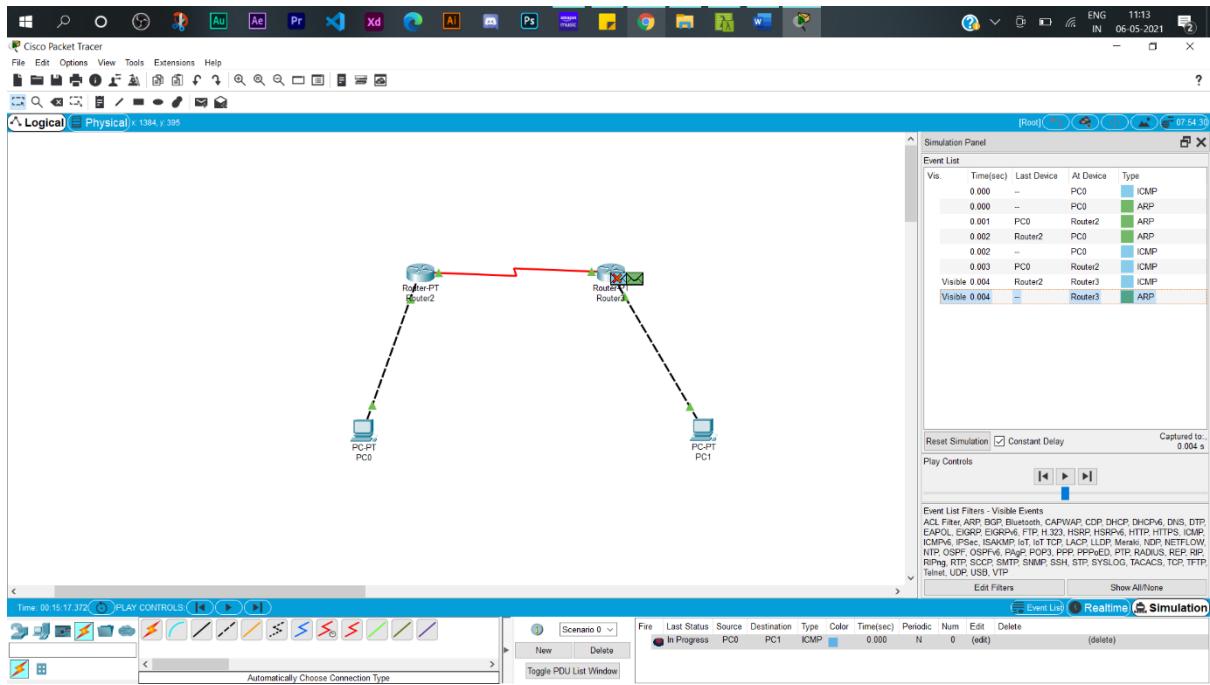


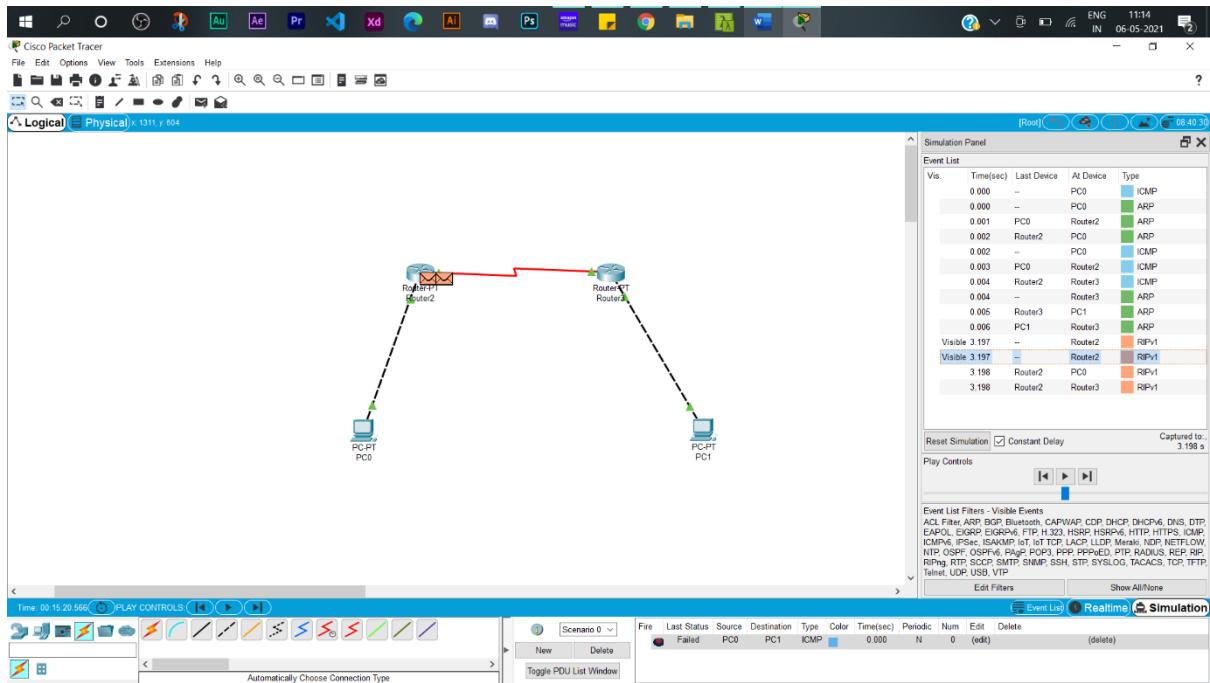
Add IP addresses to RIP using command line



Simulating to send ping







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