Computer Network Laboratory

Assignment 8

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Name: Hemant Singh

Enrollment Number: 17114038

Class: 3rd year, B.Tech CSE

Course: CSN-361

Github Link: https://github.com/hemant84/CSN-361

Problem Statements:

Problem 1 :

Use CISCO packet tracer to create a network topology and configure the network with Open Shortest Path First (OSPF) protocol.

Algorithms used :

- ● Router: A router examines a packet header's destination IP address and compares it against a routing table to determine the packet's best next hop. Routing tables list directions for forwarding data to particular network destinations, sometimes in the context of other variables, like cost.
- ● Ethernet: a system for connecting a number of computer systems to form a local area network, with protocols to control the passing of information and to avoid simultaneous transmission by two or more systems.
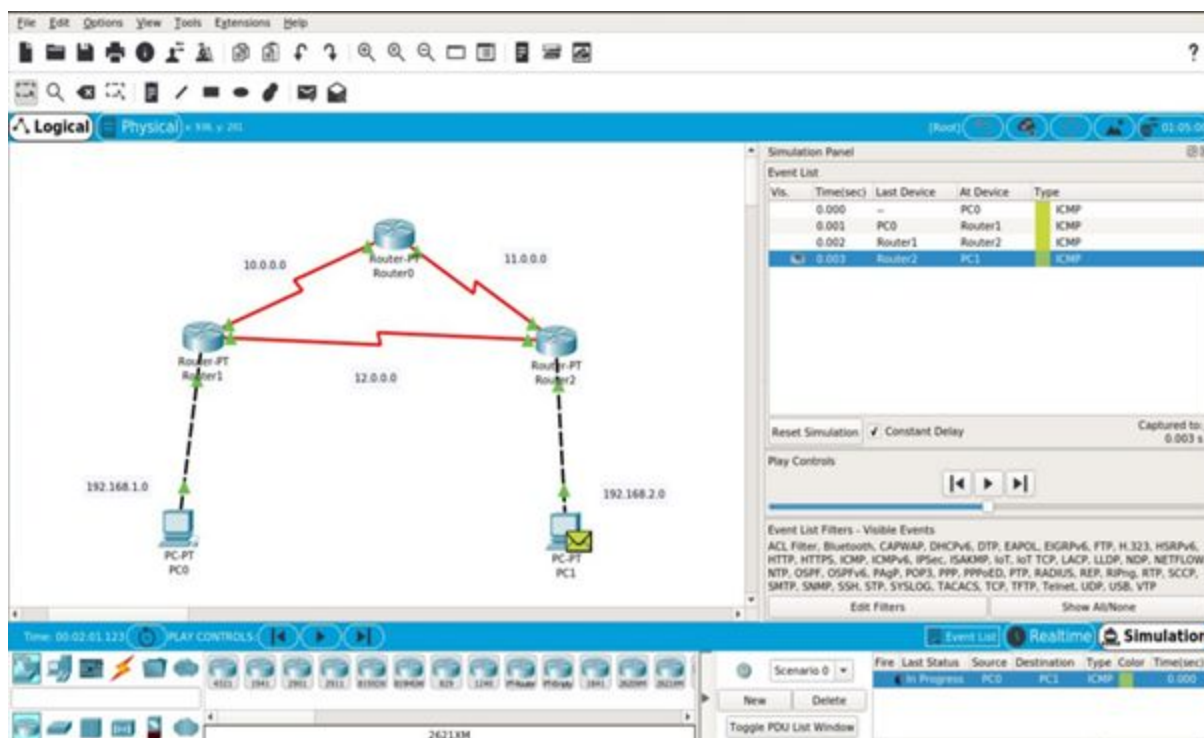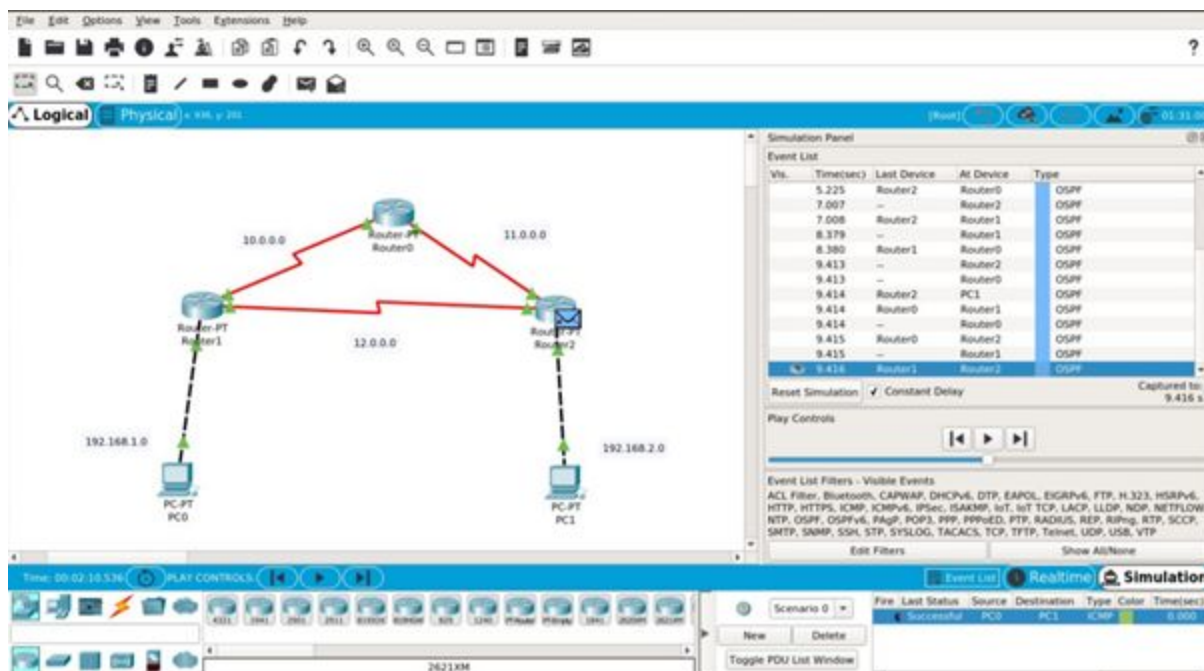
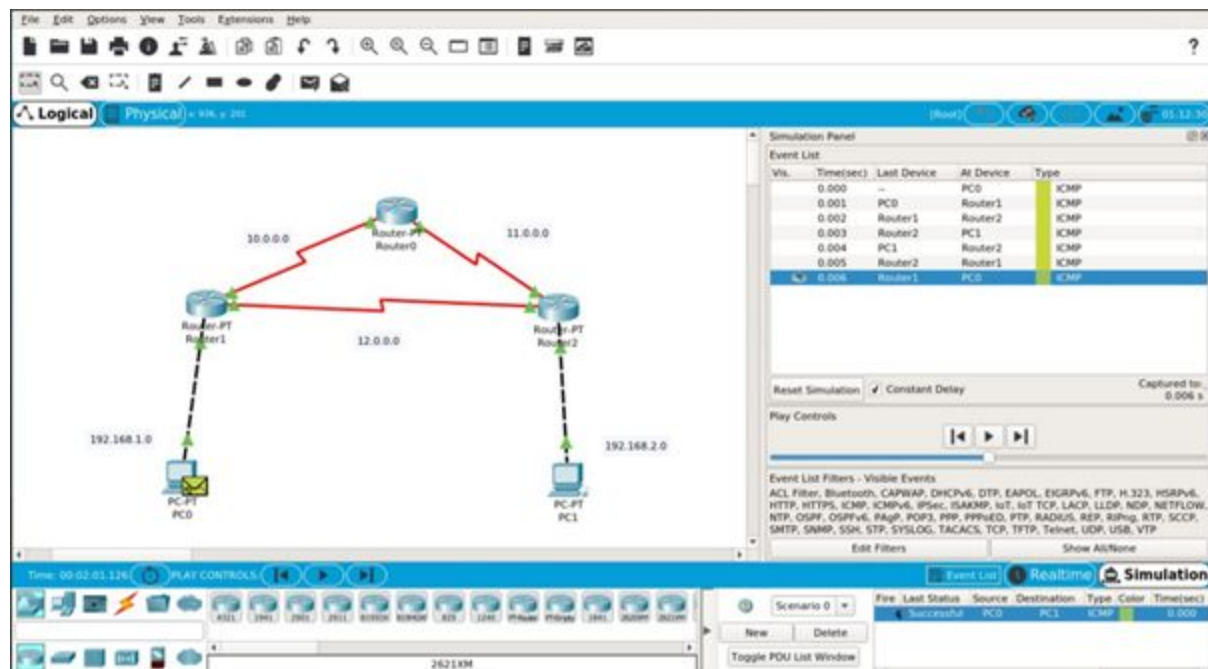**Screenshot :**
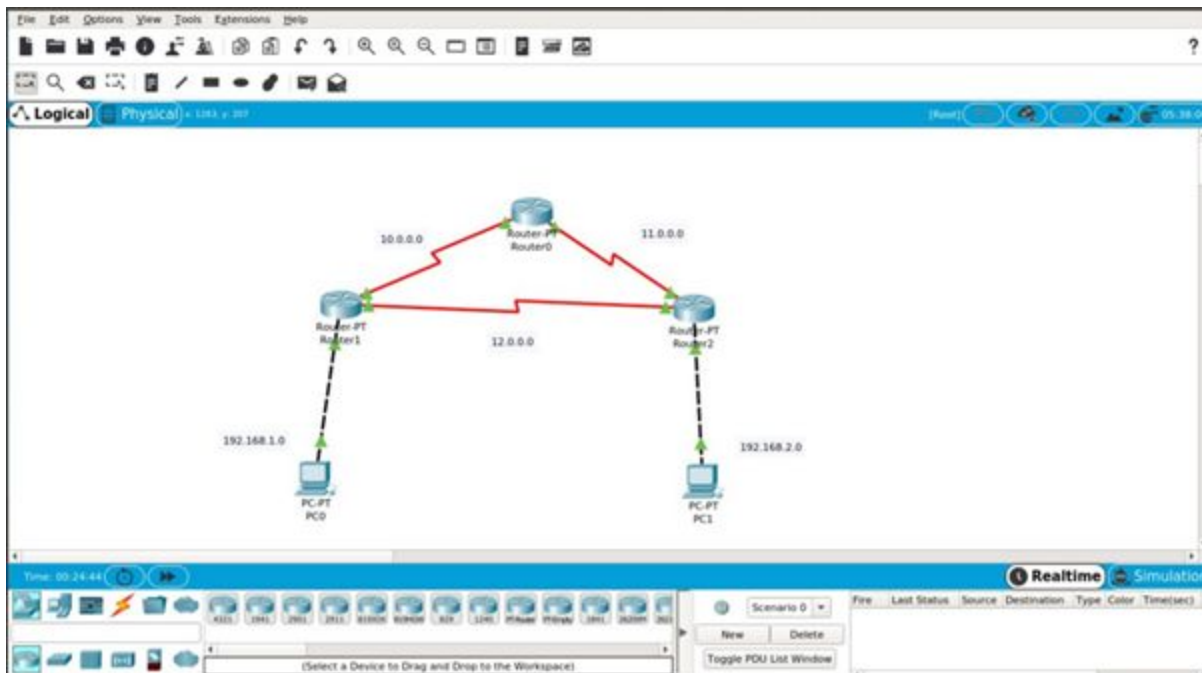
Sending ICMP packet from PC0 to PC1
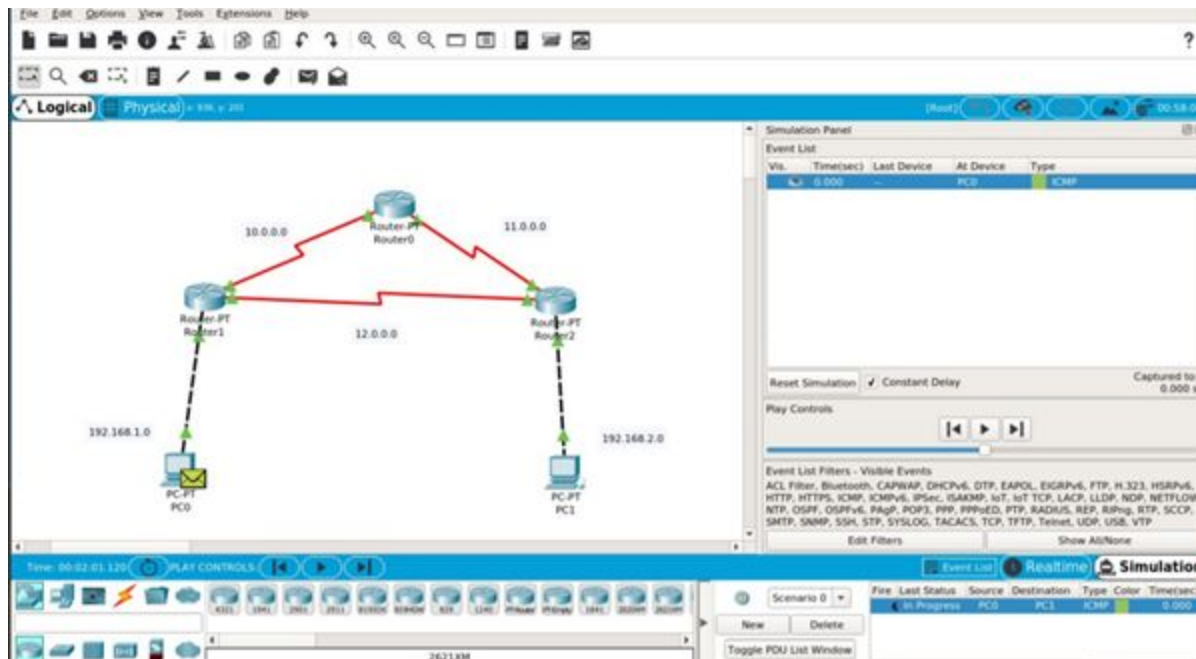
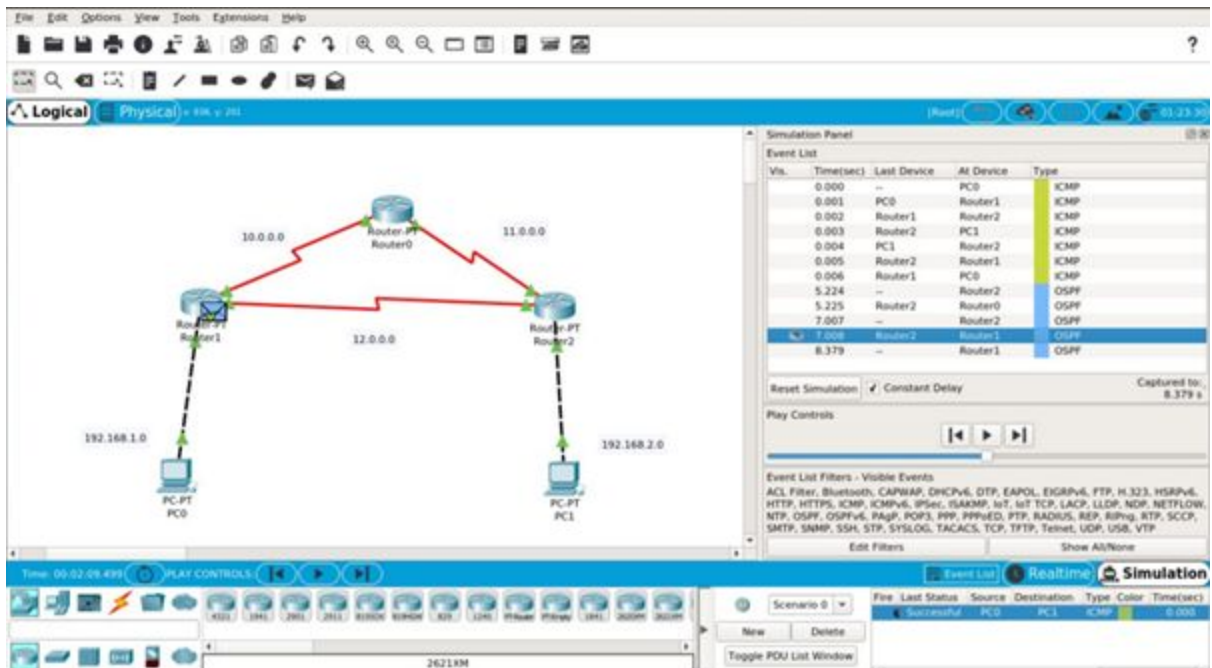Packet received by PC1 through PC0 -> Router1 -> Router2 -> PC1

Router 2 sending OSPF Hello message to Router1

PC1 sends the acknowledgement through the same route as above and PC1 accepts it


Router 2 sending OSPF Hello message to Router1

Problem 2 :

Use CISCO packet tracer to demonstrate Address Resolution Protocol (ARP) in a ring topology.

Data Structures:

• Hub: It is the most basic networking device that connects multiple computers or other network devices together. Unlike a network switch or router, a network hub has no routing tables or intelligence on where to send information and broadcasts all network data across each connection.
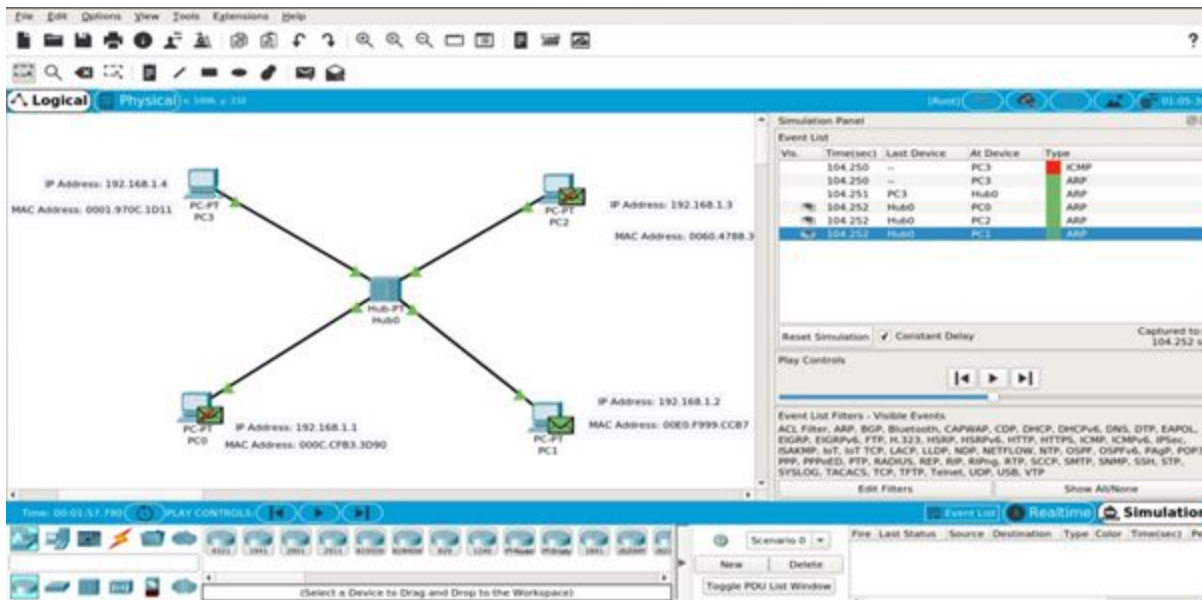
Screenshots:
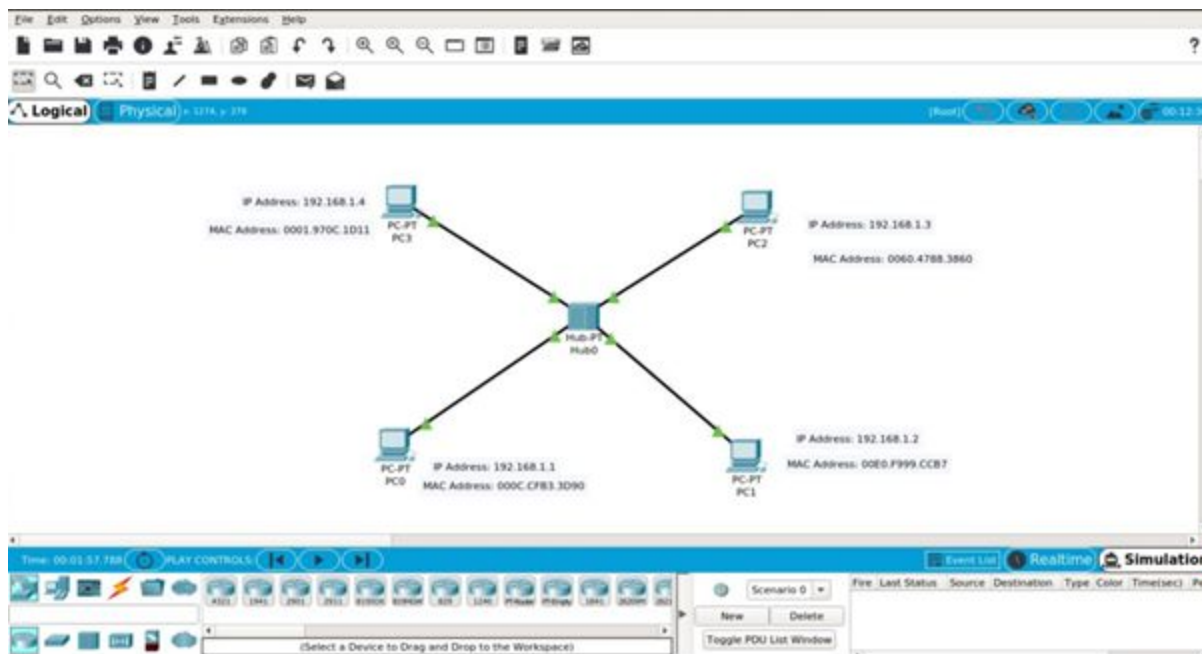
PC3 will first collecting the MAC address of the destination device by sending ARP packet.
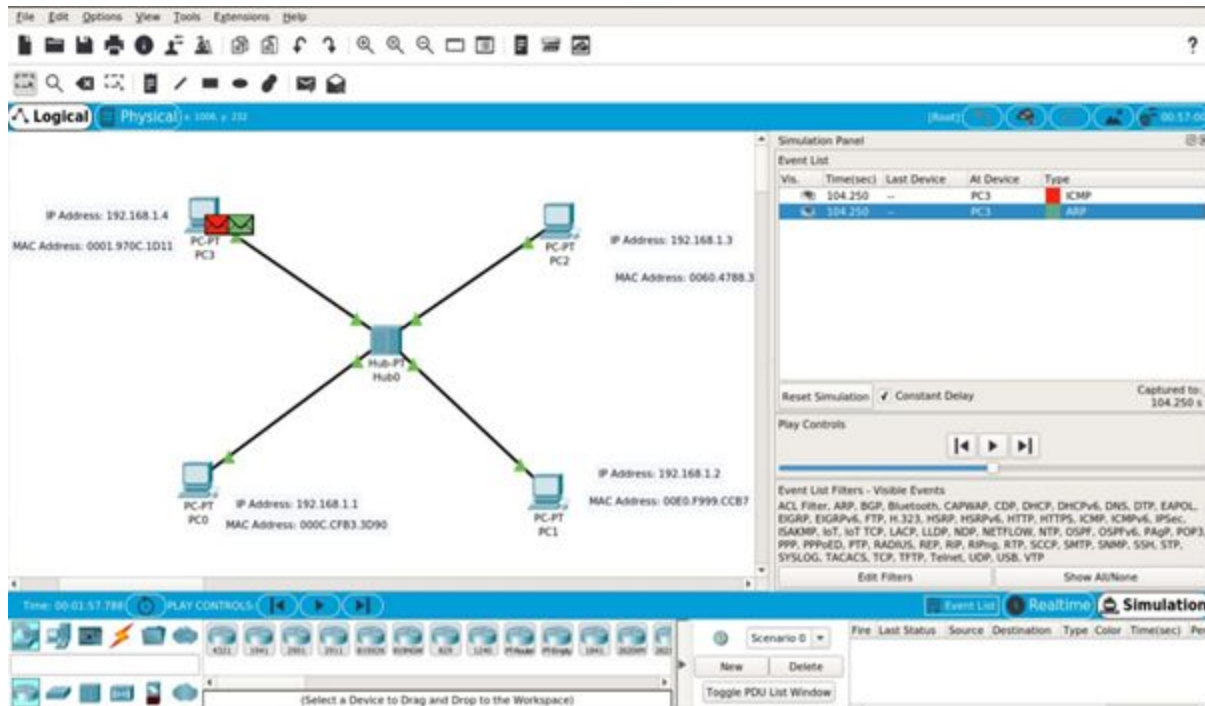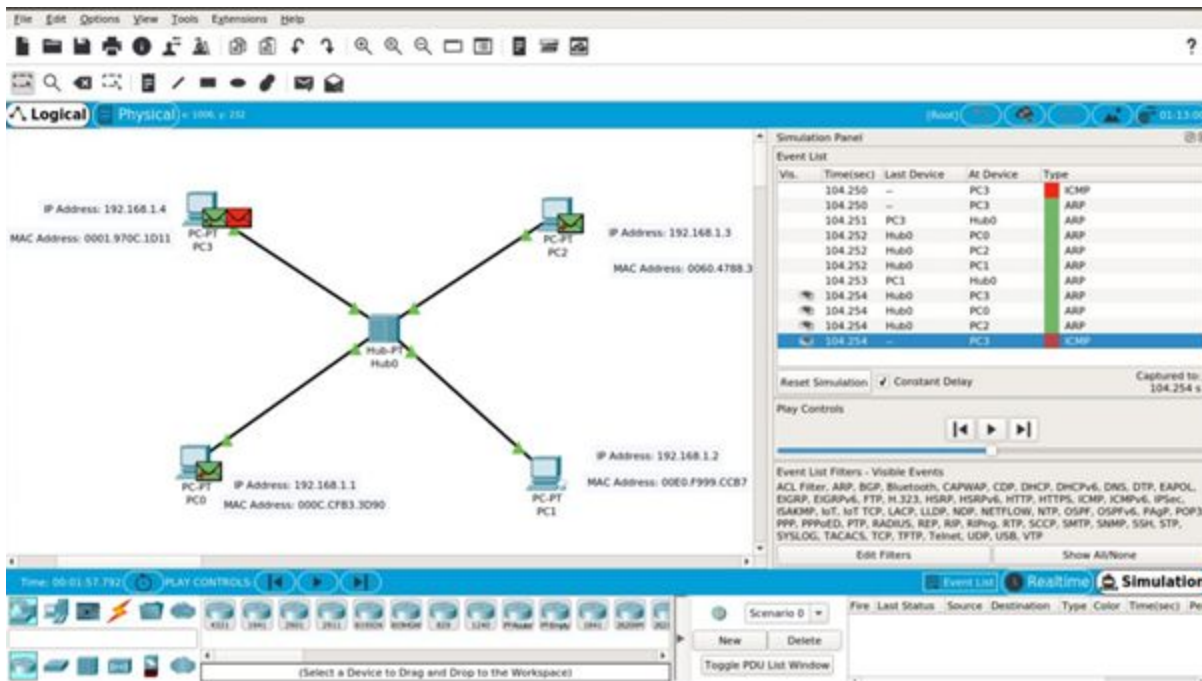

Hub transmitting the ARP packet it to every PC but only the destination PC(PC1) accepts it rest of them drops the packet.
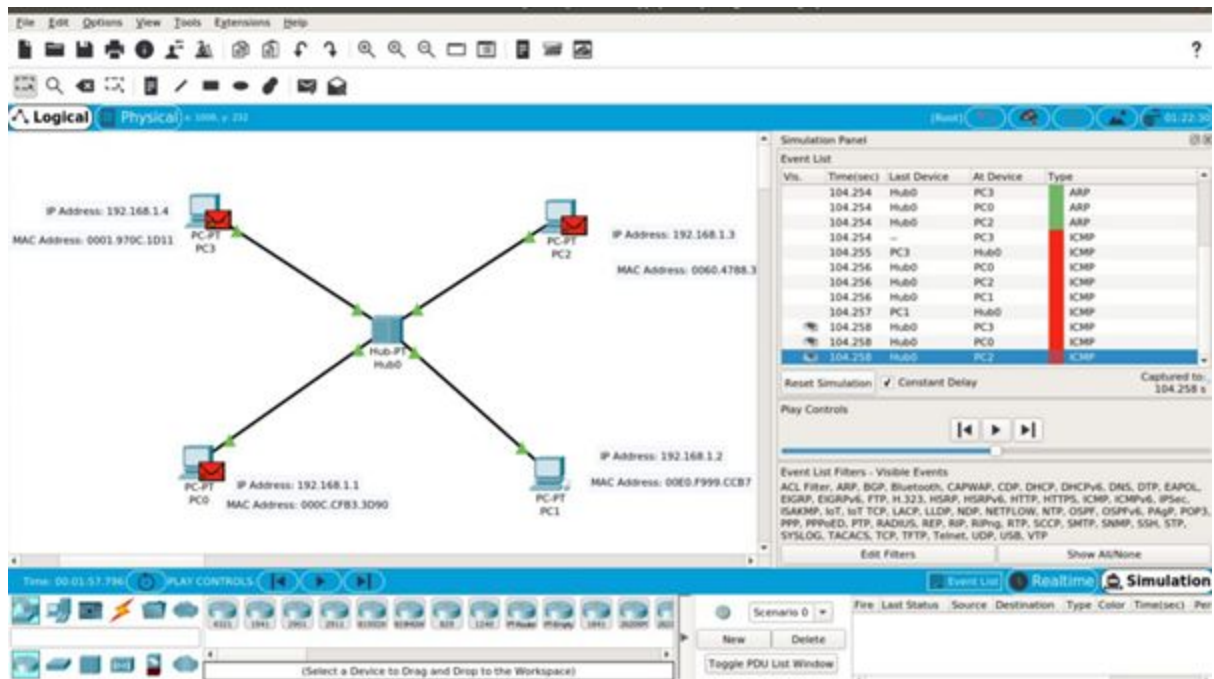
PC1 sending the acknowledgement to Hub which transmit it to every PC but accepted by only PC3

PC1 sending the acknowledgement of ICMP Packet to the hub which transmit it to every PC but accepted by only PC3.

PC3 sending the ICMP (ping) Packet to the hub which transmit it to every PC but accepted by only PC1.