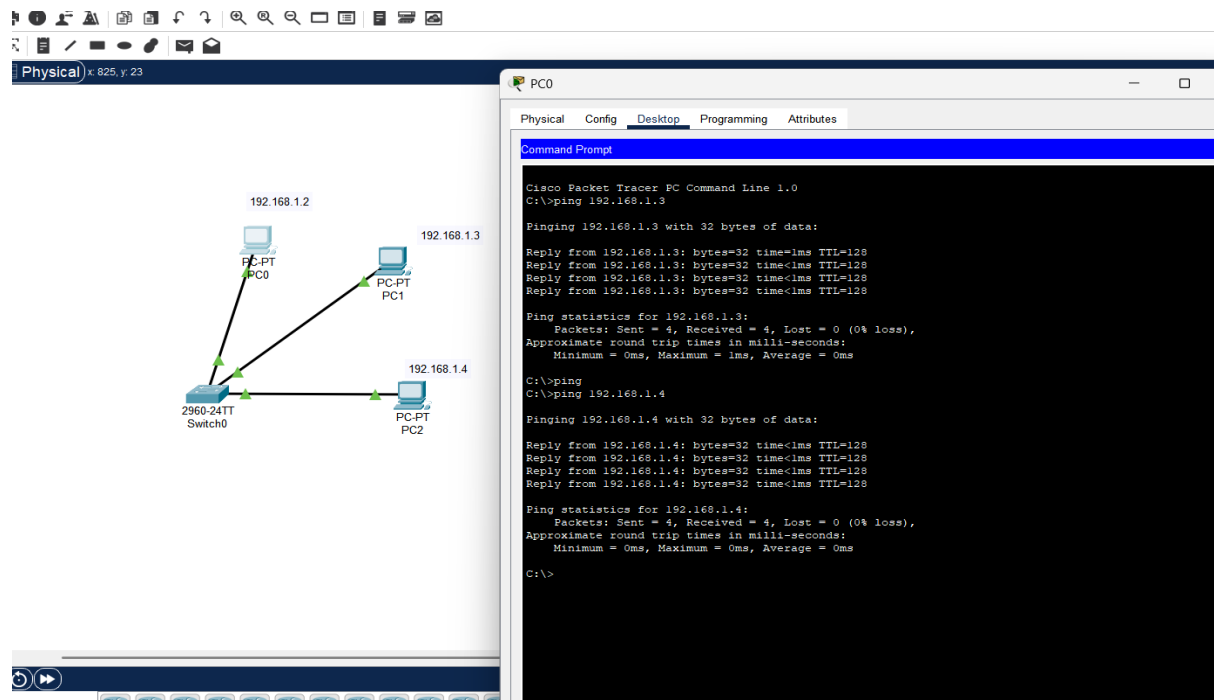
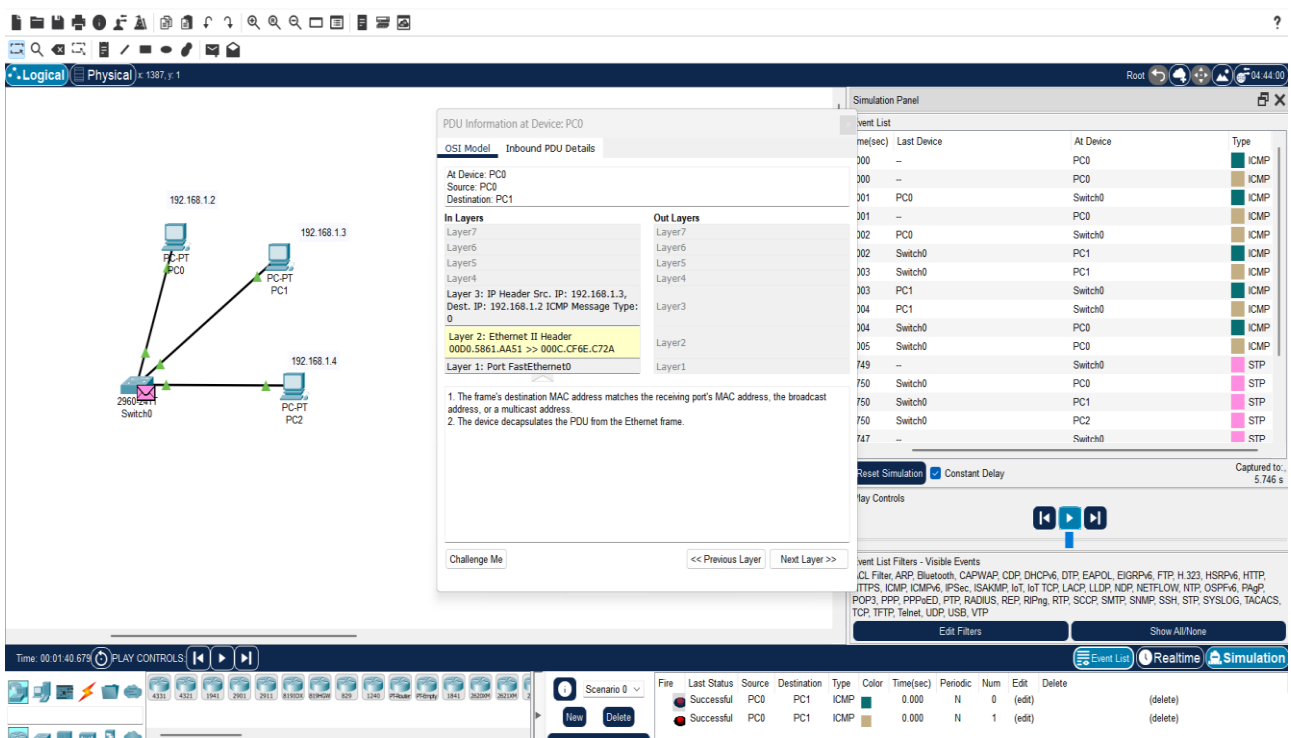


**Q1. Simulate a small network with switches and multiple devices. Use ping to generate traffic and observe the MAC address table of the switch. Capture packets using Wireshark to analyze Ethernet frames and MAC addressing.**

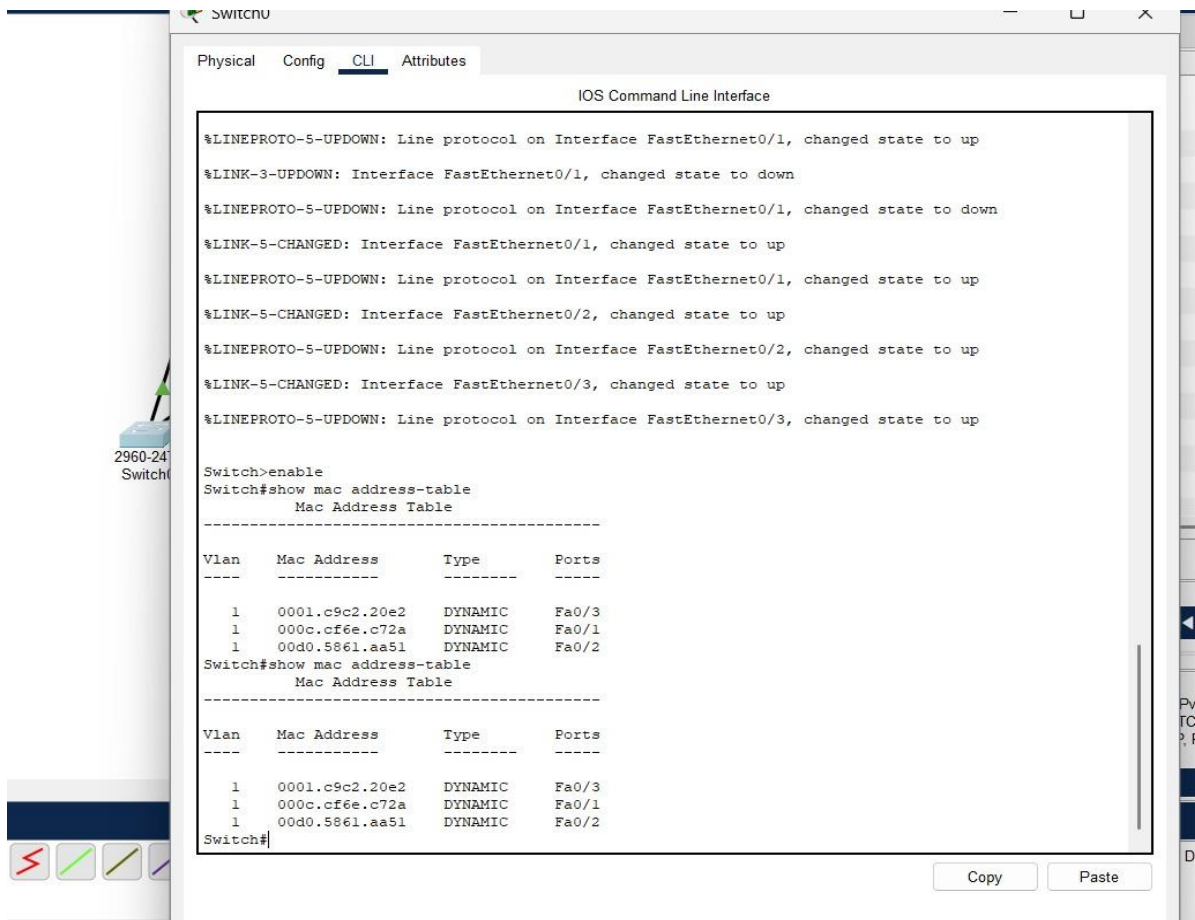
**Pinging pc0 -> pc1 and pc0 -> pc2**



**Capturing Packets in Simulation mode : Wireshark-like packet analysis in Cisco Packet tracer Simulation Mode**



## MAC address table of the switch



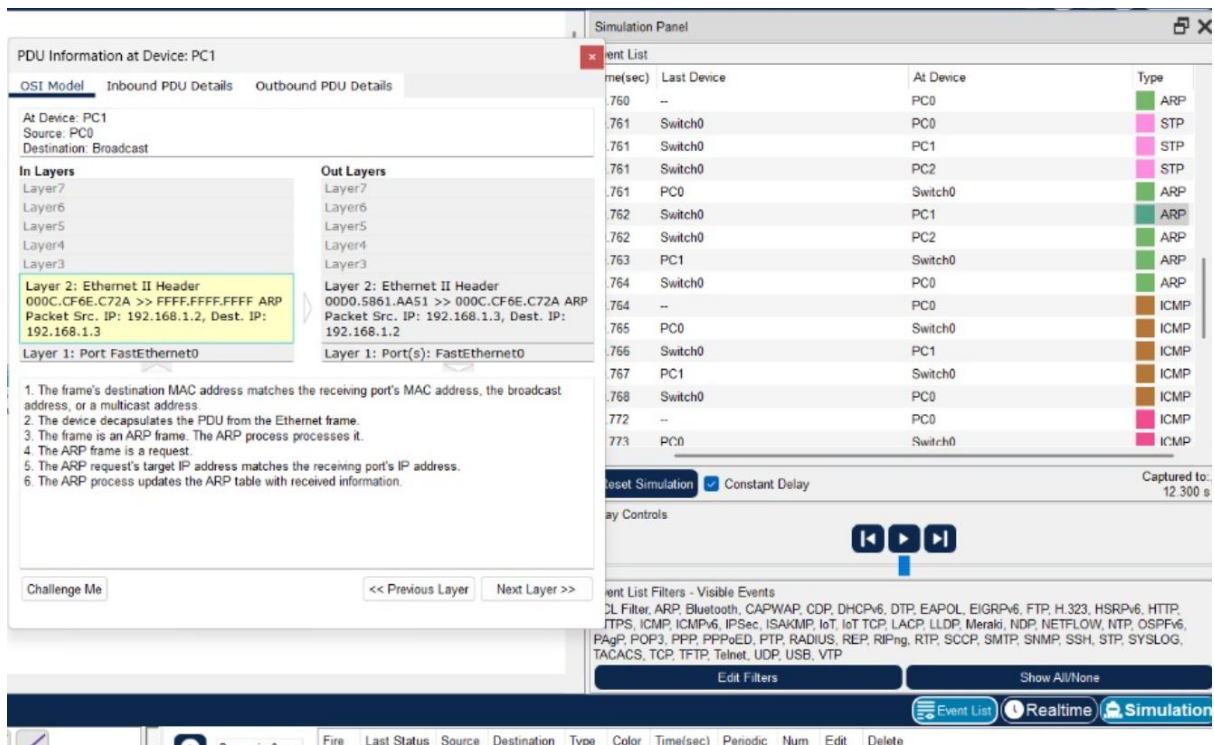
The screenshot shows a network switch interface with the following commands and output:

```
Switch>enable
Switch#show mac address-table
      Mac Address Table
-----
Vlan    Mac Address      Type      Ports
----    -
1       0001.c9c2.20e2   DYNAMIC   Fa0/3
1       000c.cf6e.c72a   DYNAMIC   Fa0/1
1       00d0.5861.aa51   DYNAMIC   Fa0/2
Switch#show mac address-table
      Mac Address Table
-----
Vlan    Mac Address      Type      Ports
----    -
1       0001.c9c2.20e2   DYNAMIC   Fa0/3
1       000c.cf6e.c72a   DYNAMIC   Fa0/1
1       00d0.5861.aa51   DYNAMIC   Fa0/2
Switch#
```

Below the CLI output, there is a table summarizing the MAC address table entries:

| Vlan | Mac Address    | Type    | Ports |
|------|----------------|---------|-------|
| 1    | 0001.c9c2.20e2 | DYNAMIC | Fa0/3 |
| 1    | 000c.cf6e.c72a | DYNAMIC | Fa0/1 |
| 1    | 00d0.5861.aa51 | DYNAMIC | Fa0/2 |

## Frame Analysis



The screenshot shows a network simulation interface with the following components:

**PDU Information at Device: PC1**

- At Device: PC1
- Source: PC0
- Destination: Broadcast

**In Layers**

- Layer7
- Layer6
- Layer5
- Layer4
- Layer3

**Out Layers**

- Layer7
- Layer6
- Layer5
- Layer4
- Layer3

**Layer 2: Ethernet II Header**

000C.CF6E.C72A >> FFFF.FFFF.FFFF ARP  
Packet Src. IP: 192.168.1.2, Dest. IP: 192.168.1.3

**Layer 1: Port FastEthernet0**

**Layer 2: Ethernet II Header**

00D0.5861.AA51 >> 000C.CF6E.C72A ARP  
Packet Src. IP: 192.168.1.3, Dest. IP: 192.168.1.2

**Layer 1: Port(s): FastEthernet0**

**Event List**

| Time(sec) | Last Device | At Device | Type |
|-----------|-------------|-----------|------|
| 760       | --          | PC0       | ARP  |
| 761       | Switch0     | PC0       | STP  |
| 761       | Switch0     | PC1       | STP  |
| 761       | Switch0     | PC2       | STP  |
| 761       | PC0         | Switch0   | ARP  |
| 762       | Switch0     | PC1       | ARP  |
| 762       | Switch0     | PC2       | ARP  |
| 763       | PC1         | Switch0   | ARP  |
| 764       | Switch0     | PC0       | ARP  |
| 764       | --          | PC0       | ICMP |
| 765       | PC0         | Switch0   | ICMP |
| 766       | Switch0     | PC1       | ICMP |
| 767       | PC1         | Switch0   | ICMP |
| 768       | Switch0     | PC0       | ICMP |
| 772       | --          | PC0       | ICMP |
| 773       | PC0         | Switch0   | ICMP |

**Simulation Panel**

Reset Simulation ☒ Constant Delay

Captured to: 12.300 s

Event List Filters - Visible Events

CL Filter, ARP, Bluetooth, CAPWAP, CDP, DHCPv6, DTP, EAPOL, EIGRPv6, FTP, H.323, HSRPv6, HTTP, HTTPS, ICMP, ICMPv6, IPSec, ISAKMP, IoT, IoT TCP, LACP, LLDP, Meraki, NDP, NETFLOW, NTP, OSPFv6, PAgP, POP3, PPP, PPPoE, PTP, RADIUS, REP, RIPng, RTP, SCCP, SMTP, SNMP, SSH, STP, SYSLOG, TACACS, TCP, TFTP, Telnet, UDP, USB, VTP

Edit Filters Show All/None

Event List Realtime Simulation