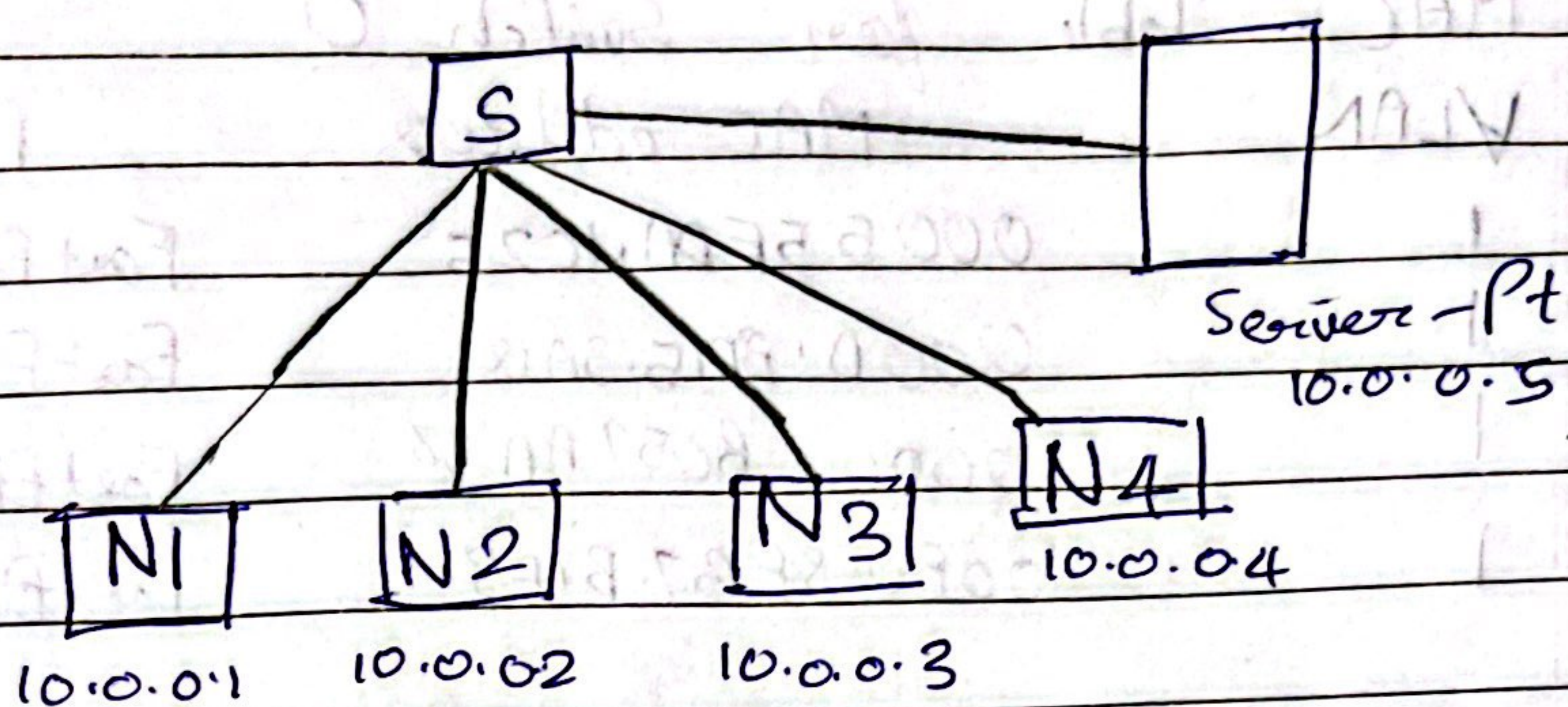


Construct Simple LAN and understand the concept and operations of address resolution Protocol (ARP)

## Topology



## Procedure :-

- 1) Create a topology of 4 PCs and a Server.
- 2) IP address assigned to all
- 3) Connect them through a switch
- 4) Use the inspect tool to click click on PC to see ARP table
- 5) Initially the ARP table is empty
- 6) In CLI of switch → show MAC address table can be given on every transaction to see how the switch learns from transactions and build the address table.
- 7) Use the ~~capture~~ button to see the process step by step.

## Result :-

PC > arp -a

4



Internet address	Physical address
10.0.0.2	000d.bd15.3a18
10.0.0.3	00e0.8fb7.b7e8
10.0.0.4	00d0.bc97.aa38

Type  
dynamic  
dynamic  
dynamic

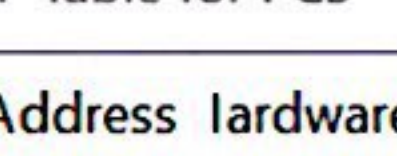
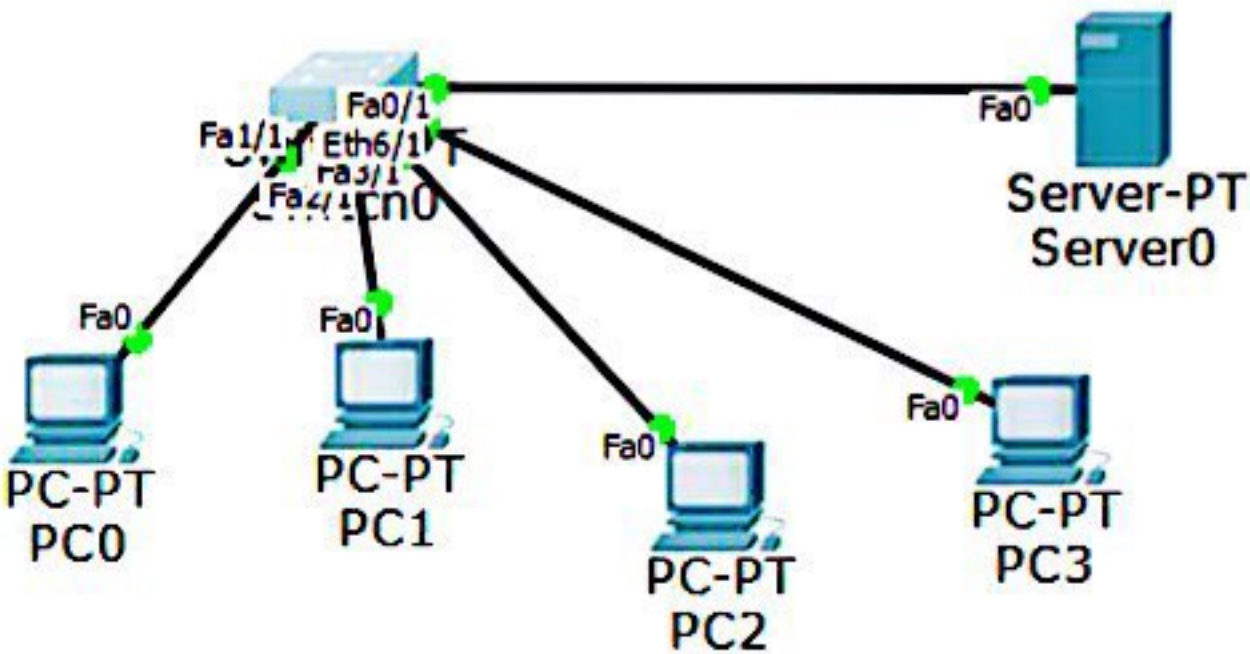
MAC Table for Switch 0	
VLAN	MAC address Port
1	0005.5E0A.1C25 Fast Ethernet 0/
1	000D.BD15.3A18 Fast Ethernet 2/
1	00D0.BC57.AA38 Fast Ethernet 1/
1	00E0.8FB7.B7E8 Fast Ethernet 3/

Observation :-







ARP is a protocol that uses IP address to find out the physical address / MAC address

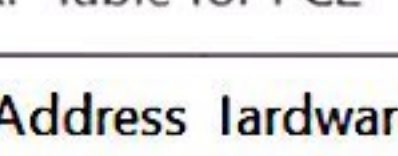
N  
19/12/2023





IP Address	Hardware Address	Interface
10.0.0.1	0090.21CE.43D7	FastEthernet0/24

Simulation Panel					
Event List					
Vis.	Time(sec)	Last De	At Dev	Type	Info
	0.016	Switch0	Serve...	ARP	
	0.016	Switch0	PC1	ARP	
	0.016	Switch0	PC2	ARP	
	0.016	Switch0	PC3	ARP	
	0.017	Server0	Switc...	ARP	



IP Address	hardware Address	Interface
10.0.0.1	0090.21CE.43D7	FastEthernet0/24

IP Address	Hardware Address	Interface
10.0.0.1	0090.21CE.43D7	FastEthernet0/24

```
Switch0
Physical Config CLI
IOS Command Line Interface
%LINEPROTO-5-UPDOWN: Line protocol on Interface
Ethernet6/1, changed state to up

Switch>show mac address-table
      Mac Address Table
-----
Vlan    Mac Address      Type    Ports
----    -
1       000c.8566.e0dc    DYNAMIC Fa2/1
1       0090.21bc.4006    DYNAMIC Fa3/1
1       0090.21ce.43d7    DYNAMIC Fa1/1
1       00e0.b048.bcc3    DYNAMIC Eth6/1
1       00e0.f78b.ac89    DYNAMIC Fa0/1

Switch>
```