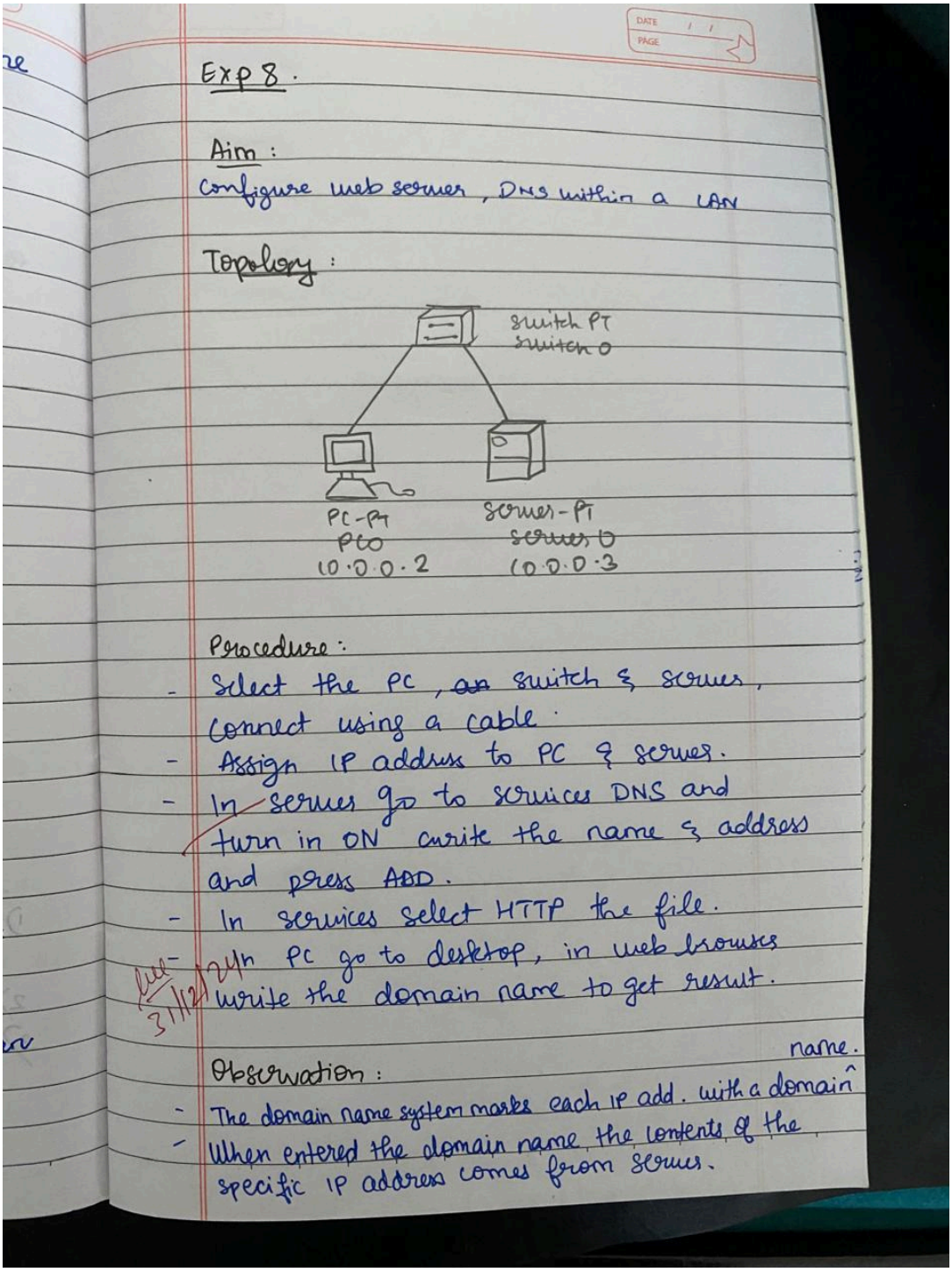
Lab 8 - 18/12/24
Experiment 8



Exp 8.

Aim:
Configure web server, DNS within a LAN

Topology:

Procedure:
- Select the PC, ~~an~~ switch & server, connect using a cable.
- Assign IP address to PC & server.
- In server go to services DNS and turn in ON write the name & address and press ADD.
- In services select HTTP the file.
- In PC go to desktop, in web browsers write the domain name to get result.

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Observation:
- The domain name system marks each IP add. with a domain name.
- When entered the domain name the contents of the specific IP address comes from server.

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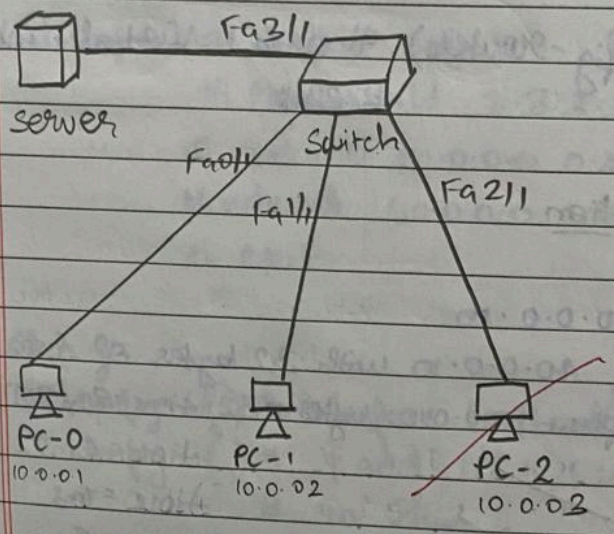
LAB 8

Exp 9

Aim : To construct simple LAN and understand the concept & operation of ARP.

Topology :



Procedure :

Create a topology as shown above.
Assign ip addresses to all
Use the inspect tool to click on a PC to see the ARP table.
command in CLI is arp -a
initially ARP table is empty

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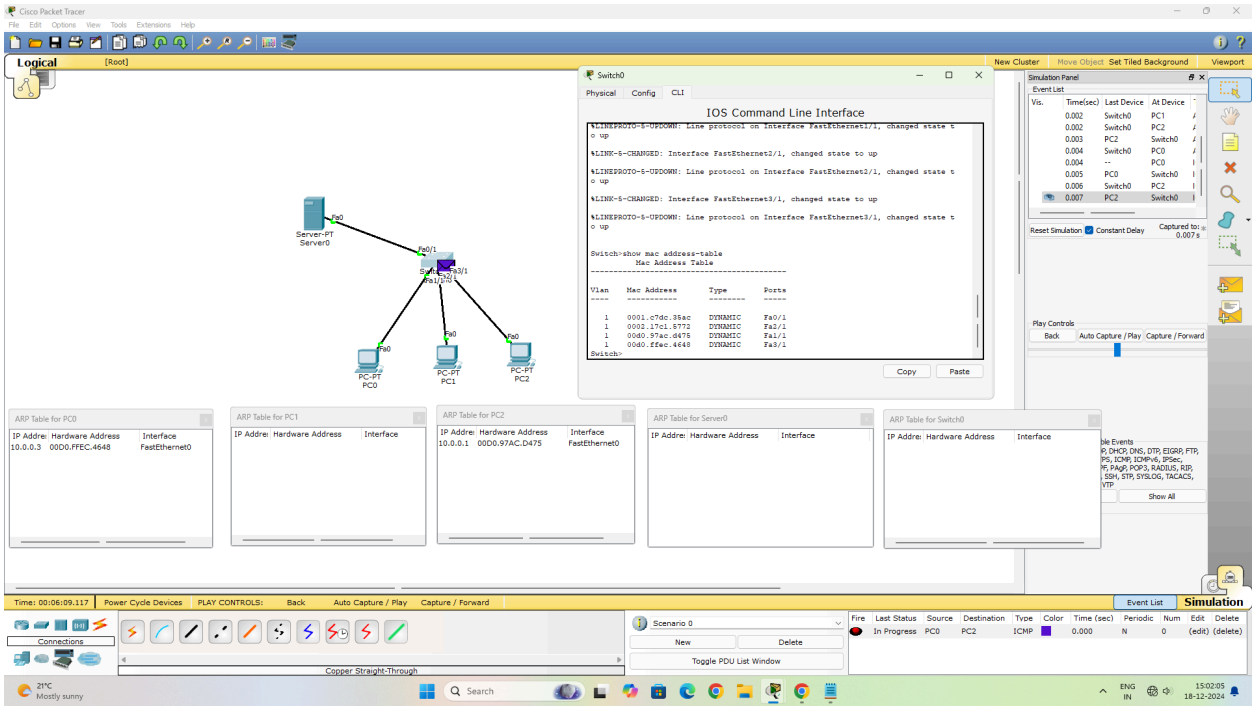
In CLI of switch, the command - show mac address-table on every transaction to see how switch learns from transactions & builds address-table.

Go to simulation & use capture button so ARP changes are seen step by step.

Add simple PDU select between 2 pcs and switch & PC. [capture / forward we can see IP add. of each table.]

Observation:
We can see that through ARP protocol server has resolved the address of all PC's and sent next message to an from having MAC table.

VLAN	MacAddress	Port
1	0001.6420.CC0A	Fast ethernet 1/1
1	0021.9738.C6E0	Fast ethernet 2/1
1	0002.4A1C39.3B7A	Fast ethernet 3/1
1	000C.CF04.C562	Fast ethernet 0/1



Experiment 10

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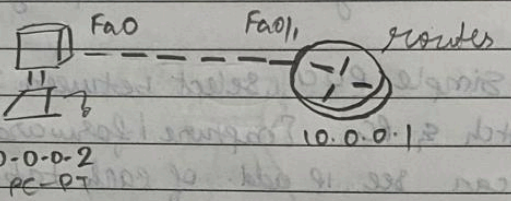
Exp 10

Aim:

To understand the operation of TELNET by accessing the router in server room from a PC in IT office.

Topology:



Procedure

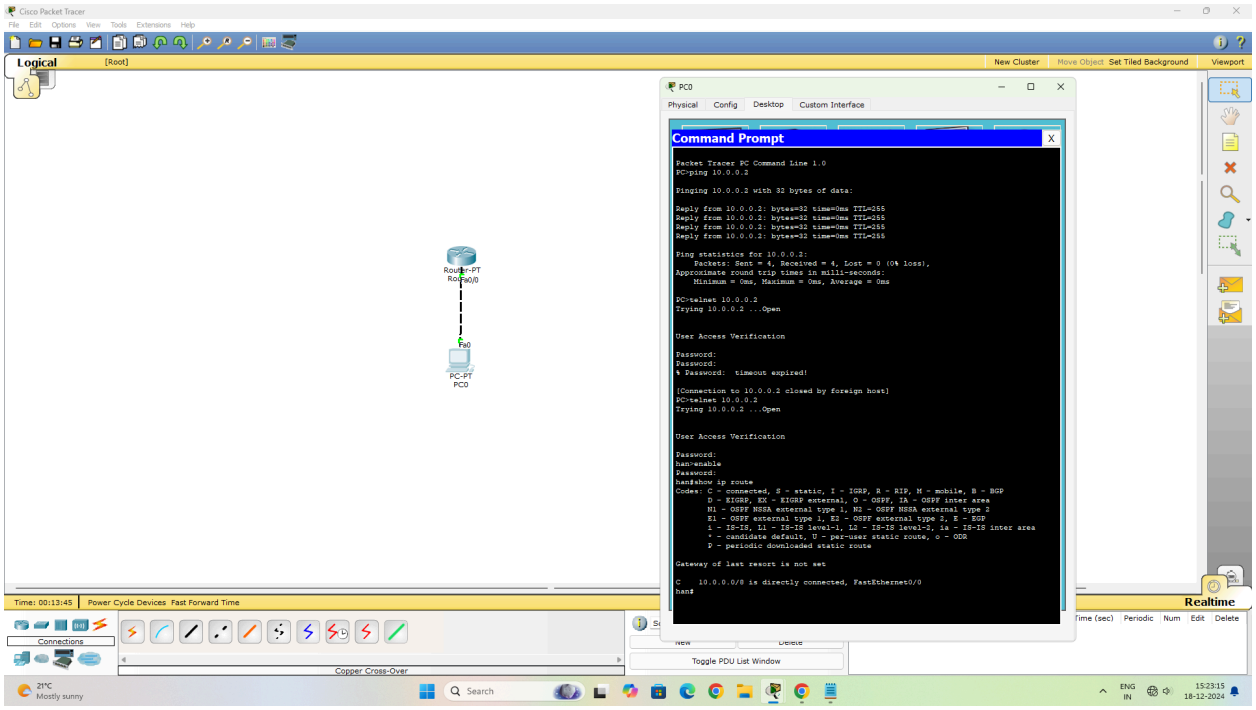
- Connect a PC to router and assign IP address to each.
- configure router

```
# interface fastethernet 0/0
# ip address 10.0.0.1 255.0.0.0
# no shut
Then command
# enable
# config terminal
# hostname R1
# enable secret P1
# interface fastethernet 0/0
# ip address 10.0.0.1 255.0.0.0
# no shut
# line vty 0 5
```

login
password p0
exit
exit
R1 # wr

Observations:
It is observed that through the telnet the hostname & password is given to CLI & router in any other device.
- In pc type ping to know its connected.
telnet 10.0.0.1 command access to R1 host in PC 0

User access verification
Password : p0
R1 > enable
Password : p1
R1 #



Experiment 11

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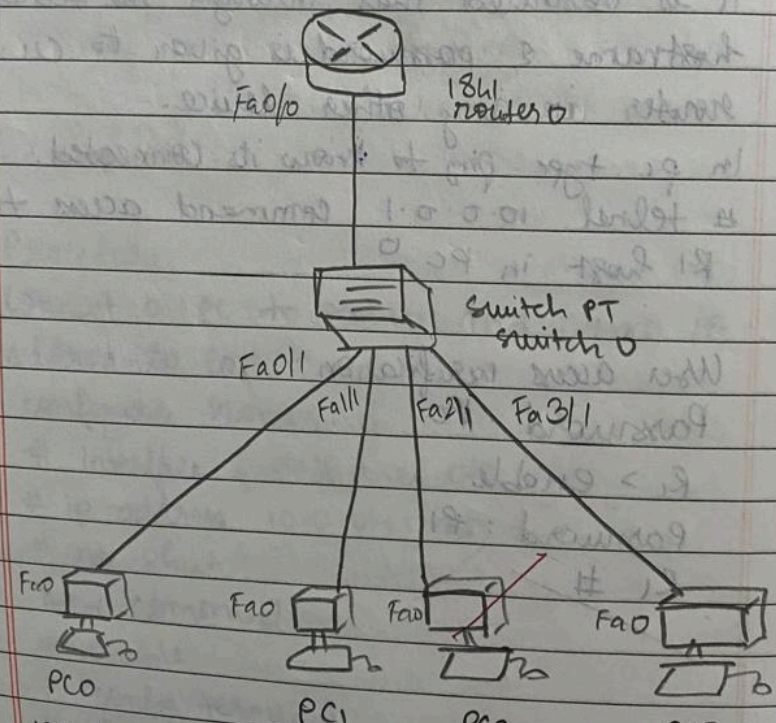
Exp 11

Aim:

To construct a VLAN and make the PC's communicate among a VLAN

Topology:



	PC0	PC1	PC2	PC3
ip	192.168.1.2	192.168.1.3	192.168.2.2	192.168.2.3
gateway	192.168.1.1	192.168.1.1	192.168.2.1	192.168.2.1

1)
2)
3)
4)
5)
6)
7)
8)
9)

Procedure:

1) Take a router connect it to a switch & connect 4 PCs to switch - PT 0.
2) Configure ip address & gateways as shown in topology.
3) Go to router configure or fix 2 PCs in the router command.
   # enable
   # config terminal
   # interface fastethernet 0/0
   # ip address 192.168.1.1 255.255.255.0
   # no shut
   # exit
4) Then select switch, go to config, select VLAN database.
5) Set VLAN number to 2 and name, press add.
6) Do VLAN trunking
7) Go to fastethernet 0/1 select Trunck
8) Go to fastethernet 2/1 select the VLAN trunk
9) In ~~trunk~~ select VLAN database and enter the number & name of VLAN created.

Go to CLI - commands.
Router (VLAN) # exit
Router # config terminal
interface fastethernet 0/0.1

Router(config-subif)# encapsulation dot1q 2
ip address 192.168.2.1 255.255.255.0
no shut
exit
exit

10) Ping from two routers to other two.

Observation:

VLAN trunking allows switches to forward from different VLAN, over single linked cable trunk.
This is done by adding an additional header information called tag to the ethernet frame. The process of adding this is is called VLAN tagging.
It makes switch understand NEW VLAN.

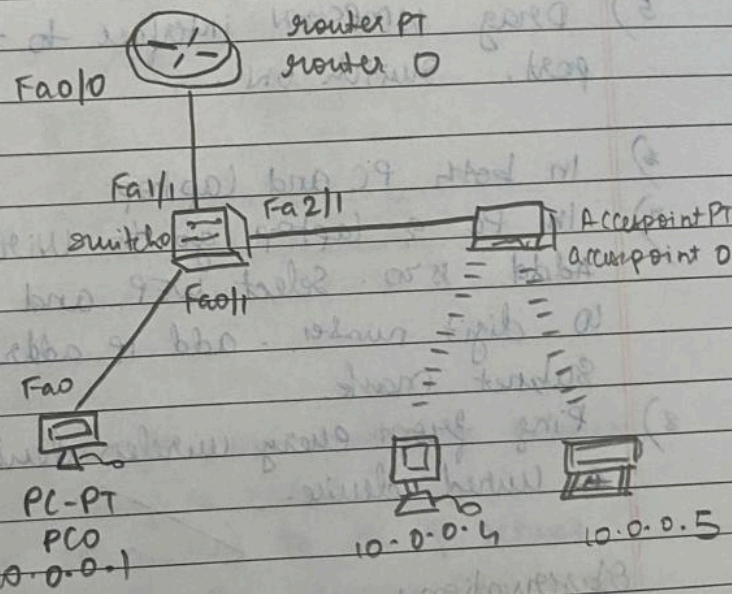
Experiment 12

Exp 12

Aim:

To construct a WLAN and makes the nodes communicate wirelessly.

Topology:



Procedure:

1) Set a routes connect it to a switch
Connect it to a PC.
2) Configure IP address & routes configuration.
3) Select Accesspoint - PT and PC & laptop.

4) Configure access point - port 1 name any name select WEP and give 10 digit hex key in port 1.
Configure PCs and laptop with wireless.
- Go to PC4, switch off the device, drag PT-host-NM-1AM to LH1 component

5) Drag WMP300N interface to the empty port, switch ON.

6) In both PC and laptop
7) In PC & laptop go to Wireless 0 Addd ssid. Select WEP and add 10 digit number. add IP address & subnet mark.
8) Ping from every wireless device to a wired device.

Observation:

1) Wireless LAN uses WEP protocol
2) It requires SSID and key to be present
3) It uses accesspoint to establish wireless connection.
4) The wireless device & wired device can communicate with each other.