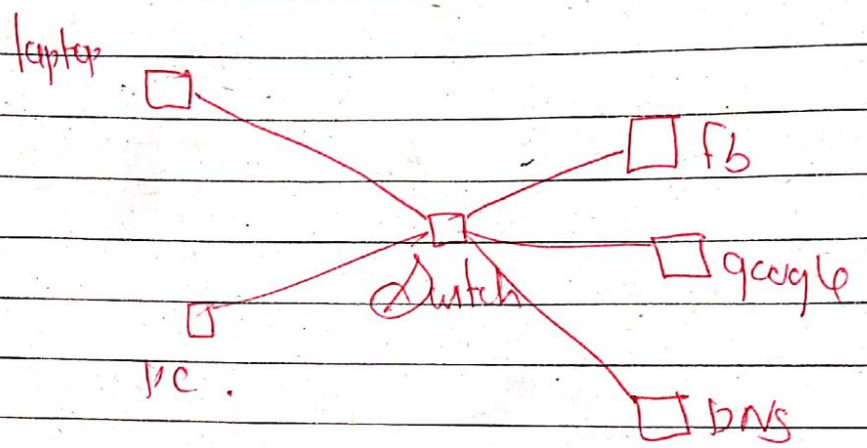
LAB-1

Inside your n/w their is one PC, one laptop 2 webserver facebook & google & one DNS server. The entire n/w belongs to.

~~20/24~~

20.0.0.0/24

The requirement is that both the PC & web server should open 'URL name'



(Change all the names)

1) Insert all the components. Connect it.
2) Set IP address of each.
3) Set DNS. - www.fb.com. & add IP also
4) www.google.com & add IP also.
4) go to fb & google server. ~~on H~~ On Http. & after that index.html add our page & after that go to DNS whether it is ON or not
5) go to client (laptop or pc) & give DNS IP ~~&~~
6) Check on web browser www.fb.com & www.google.com.

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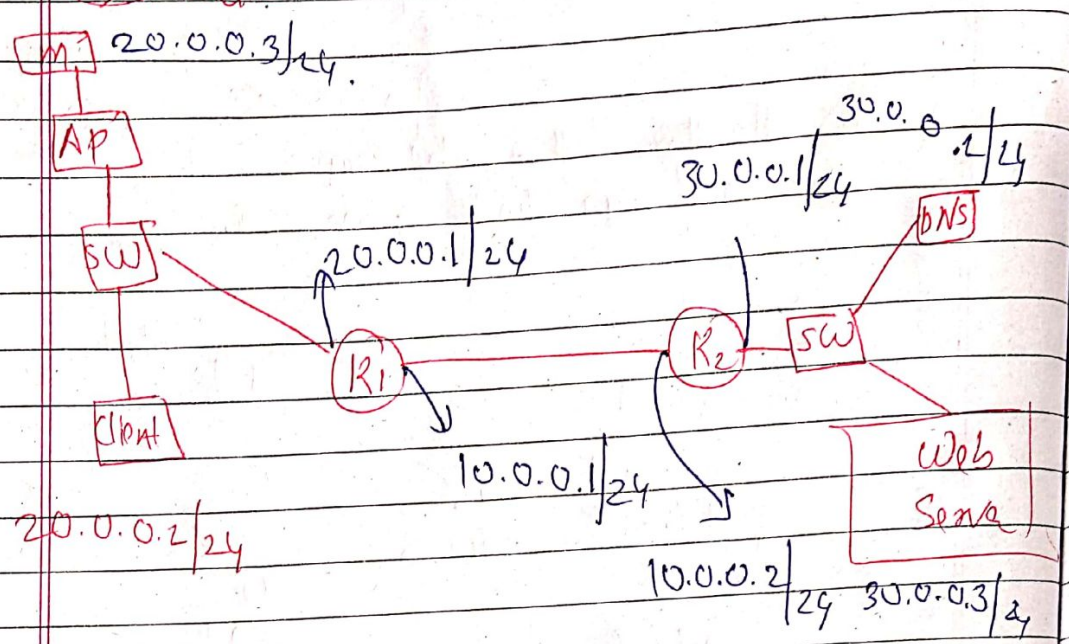
LAB-2 Routing Static.



10.0.0.0.
20.0.0.0.

missing
30.0.0.0.

10.0.0.0.
30.0.0.0
missing
20.0.0.0.

(1) Router 1 & 2

enable
configure terminal.
ip address
no shutdown
exit.

~~Config mode # interface gigabitethernet~~
~~# ip.~~

(2) Set IP of each client & Server.

(3). R1 (config) # ip route 30.0.0.0 255.255.255.0
10.0.0.2.

R2 (config) # ip route 20.0.0.0
10.0.0.1 ← 255.255.255.0

④ Give gateway.

⑤ Ping

⑥ Set DNS server if given in problem
like last Lab.

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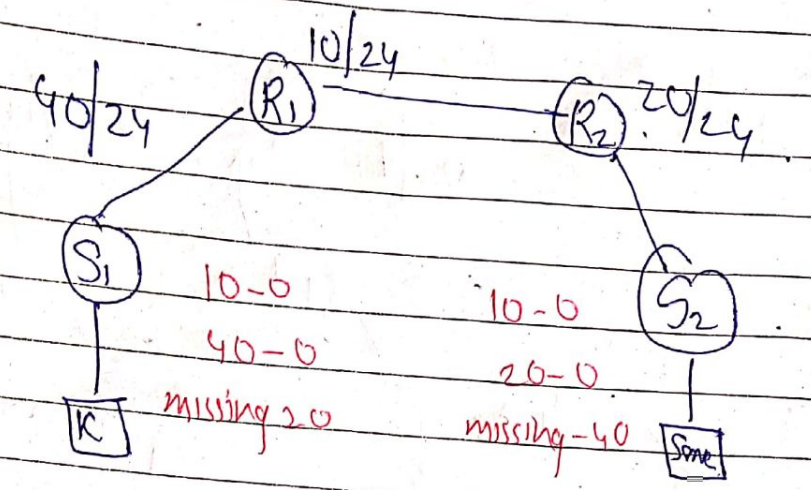
LAB-3 Dynamic Routing:-



(1) IP setting is same as previous example for router.

(2) For R_1 R_1 Config # config terminal
router rip
network 10.0.0.0
network 40.0.0.0
do write.

R_2 Config # router rip.
network 10.0.0.0.
network 20.0.0.0
do write.

(3) Give default gateway.

(4) Ping.

(5) ~~Check~~ ~~the~~ S

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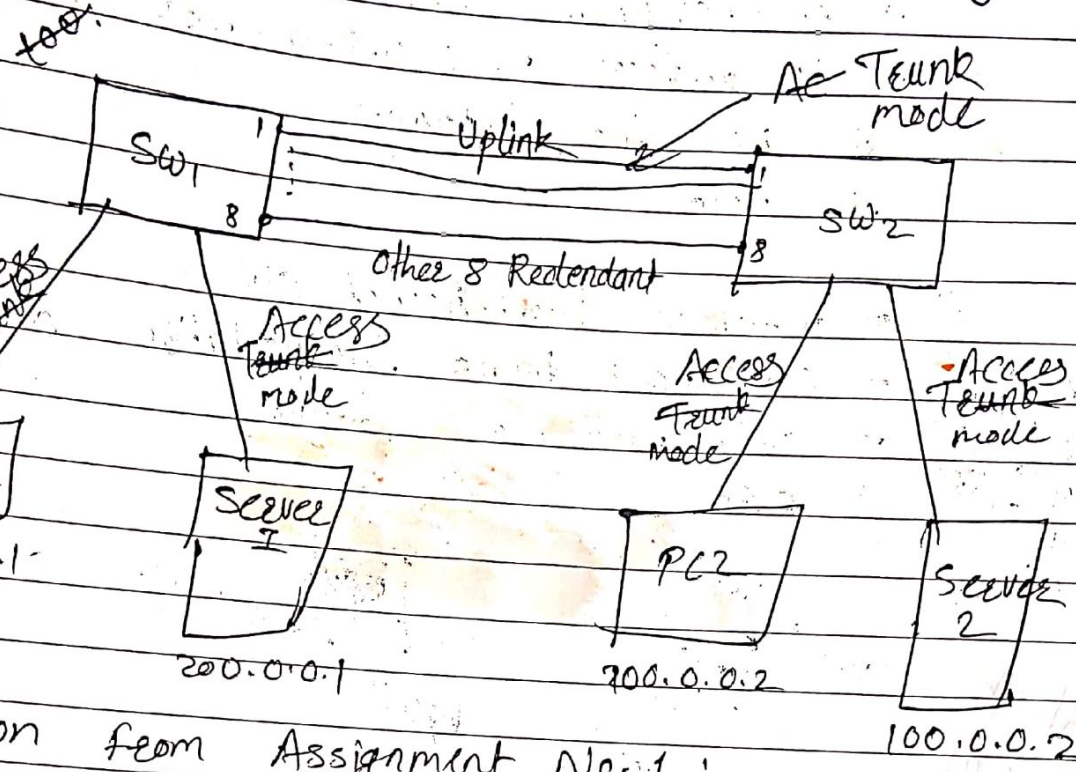
LAB-4

eklavya
PAGE NO.:
DATE: / /

Continuation from first notebook Assignment 2:



Continuation from Assignment No. 1:

for Internet LAN n/w
- To access the LAN 10.0.0.0 from 20.00.0 n/w & 20.0.0.0 from 10.0.0.0.

steps - I) Take router - 1841
II) connect ~~to~~ Router to root switch Sw1

> enable # Config-terminal
hostname R1
do write
interface fastEthernet 0/0.10
(for breaking one port of router into subport)
(config-subif) # ip address 10.0.0.254 255.255.255.0
encapsulation dot1Q 10
ip address 10.0.0.254 [illegible]

PAGE NO:
DATE: / /

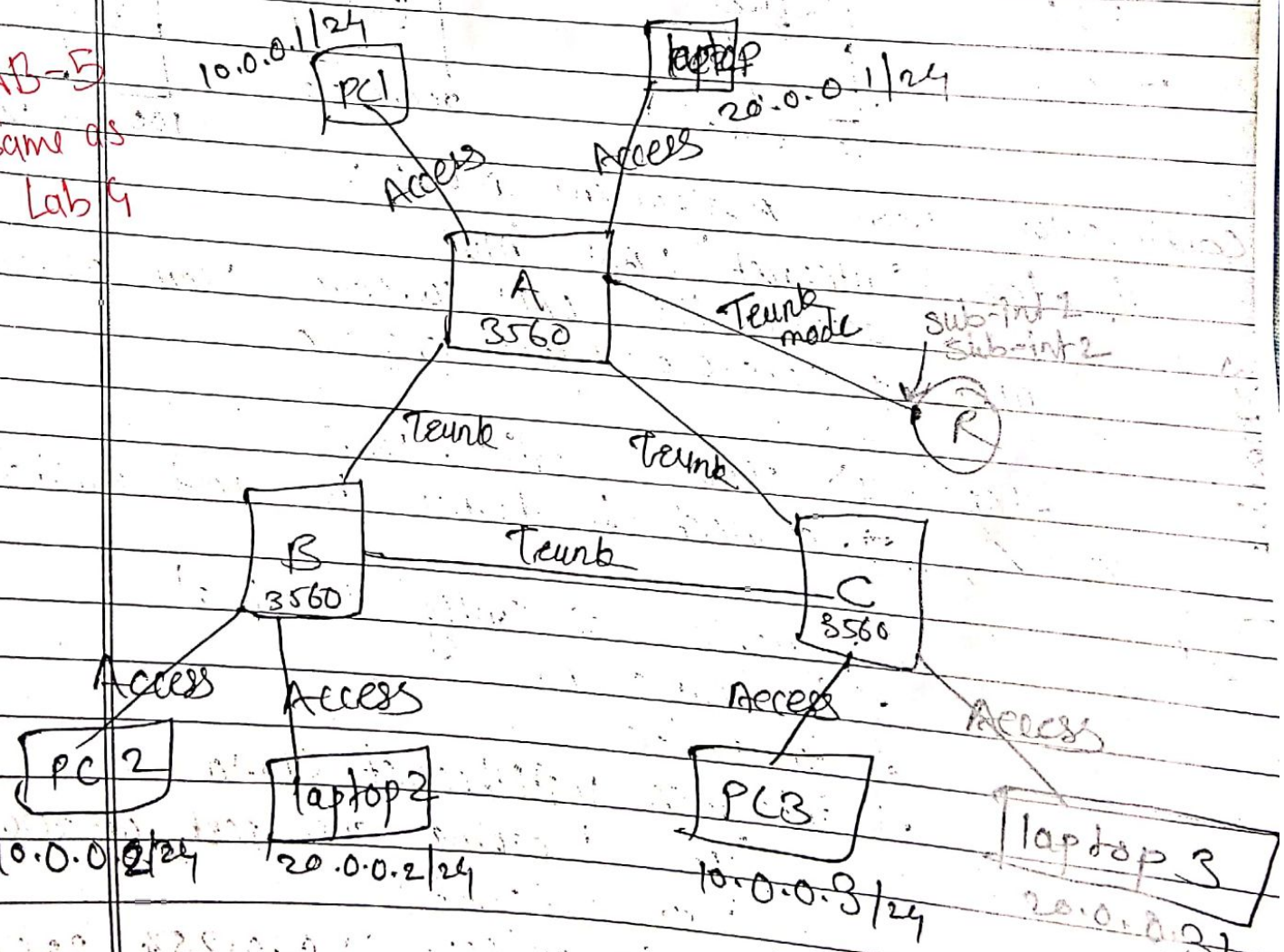
Router

```
# interface fastEthernet 0/0.20
# encapsulation dot1Q 20
# ip address 20.0.0.254 255.255.255.0
# no ~~sut~~ shutdown
# exit
```

Trunk mode cond should be ~~ho~~ type in switch CLI

```
# interface fastEthernet 0/3
# switchport trunk encapsulation dot1q
# switchport mode trunk
# exit
```

LAB-5
Same as Lab 4



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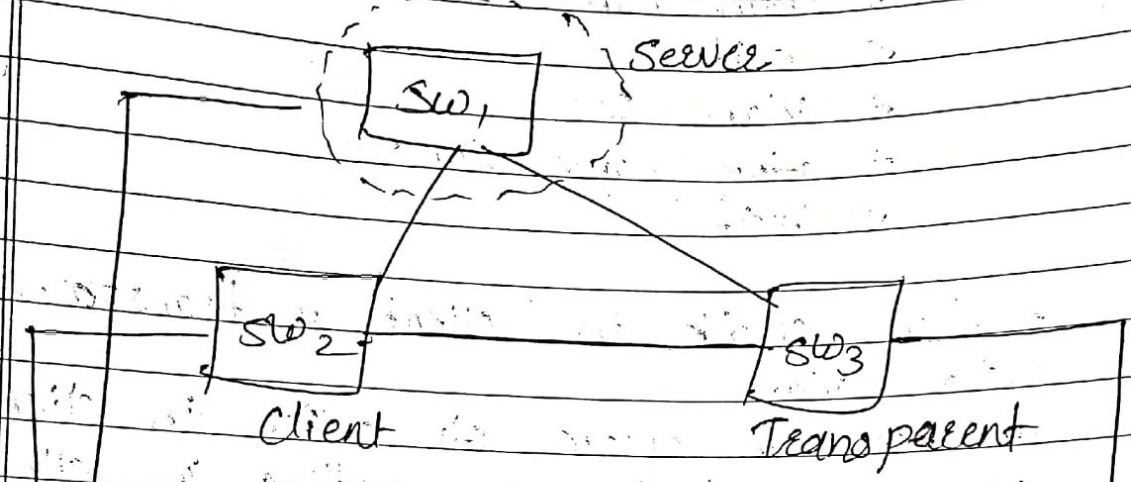
VTP (V-LAN Trunking Protocol) :-

LAB-6




```
>enable
# Config-terminal
# vtp domain hpcsa
# vtp mode server
# Exit

>enable
# Config-terminal
# vtp mode client
# Exit

>enable
# config-terminal
# vtp mode transparent
# Exit
```

prev: ~~# show vtp~~
> show vtp ~~status~~

Now, creation & change can be done only in server switch.

PAGE NO.:
DATE:

vlan 500
~~vlan~~ name vlan1
exit
vlan 600
~~vlan~~ name vlan2
exit

- Then check in client & transparent switch show vlan.
- When we create ct switch in client mode we can not change anything in client switch.

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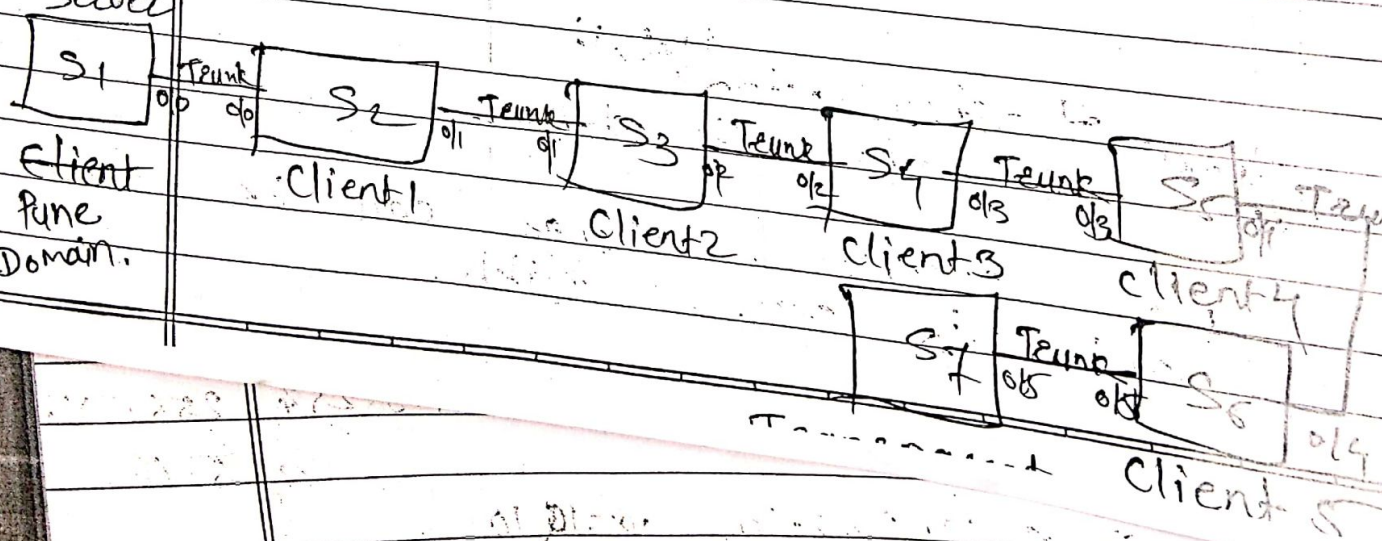
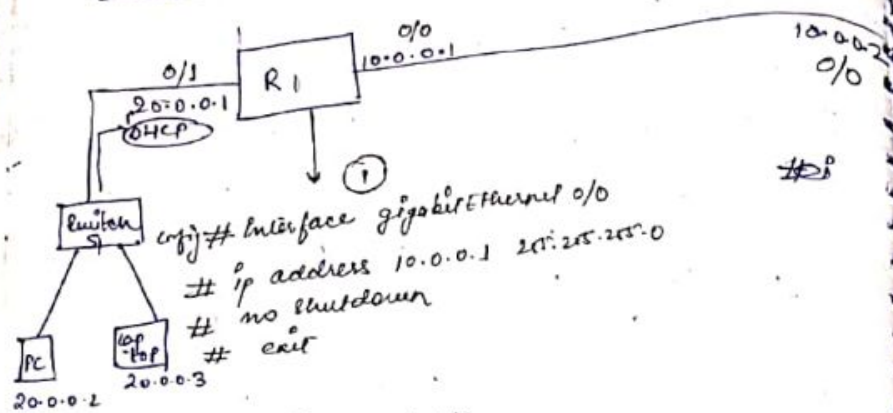
switch.

LAB: Assignment No. 8 Same as LAB - 4, 5

*7 switches connected to each other
1 - server, 5 - client, 1 - Transparent
you have given task create 3 VLAN, i.e.
VLAN 25, VLAN 50 & VLAN 75
all the inform should be synchronized
on client & also create a local VLAN
on Transparent switch. i.e. VLAN 100
-The domain name of switches will be in pune



PROGRAM



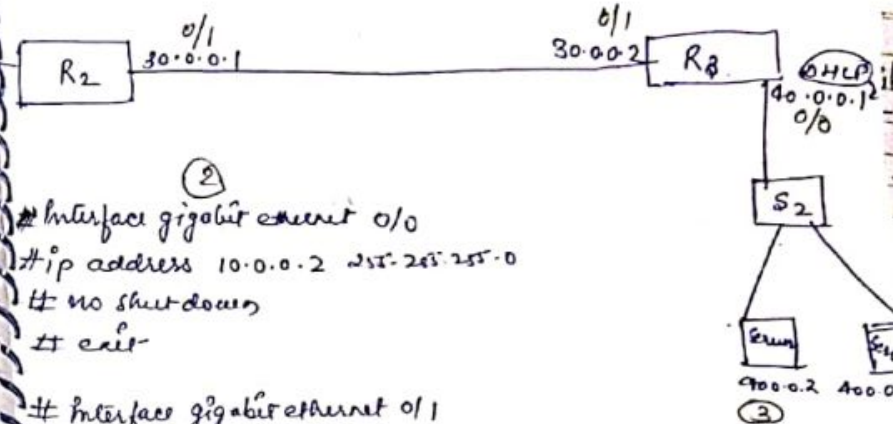
(1)

config # Interface gigabitEthernet 0/0
ip address 10.0.0.1 255.255.255.0
no shutdown
exit

config # Interface gigabit Ethernet 0/1
ip address 20.0.0.1 255.255.255.0
no shutdown
exit

ip dhcp pool hpcsa1
network 20.0.0.0 255.255.255.0
dns-server 8.8.8.8
default-router 20.0.0.1
do write
exit

privilege
show VLAN
router rip
network 10.0.0.0
network 20.0.0.0



(2)

Interface gigabit ethernet 0/0
ip address 10.0.0.2 255.255.255.0
no shutdown
exit

Interface gigabit ethernet 0/1
ip address 30.0.0.1 255.255.255.0
no shutdown
exit

router rip
network 10.0.0.0
network 30.0.0.0

(3)

Interface gigabitethernet 0/1
ip address 30.0.0.2 255.255.255.0
no shutdown
exit

Interface gigabitethernet 0/0
ip address 40.0.0.1 255.255.255.0
no shutdown
exit

ip dhcp pool hpcsa2
network 40.0.0.0 255.255.255.0
dns-server 8.8.8.8
default-router 40.0.0.1
do write
exit
router rip
network 30.0.0.0
network 40.0.0.0

(4)

Server → services → DHCP → on
set default gateway → 40.0.0.1
DNS server → 8.8.8.8
Start IP Address → 40.0.0.0
Subnet Mask → 255.255.255.0
Save

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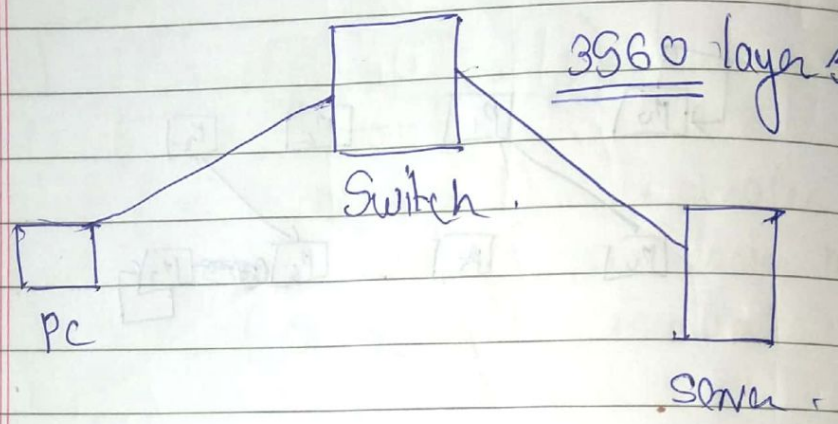
LAB - ~~1.5~~

Switch Virtual Interface.



ip routing

ip & gateway	ip & gateway
10.0.0.1	20.0.0.1
10.0.0.254.	20.0.0.254.

— enable
~~configure~~ Configure terminal
hostname S1
do write
vlan 10
name PC
exit
vlan 20
name server exit.

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— interface fastethernet 0/10
switchport access 10.
switchport access vlan
exit mode
Same for 0/20.

— Server DNS on.

Server DNS www.cdac.in 20.0.0.1
& same in edit http.

& after that in pc.
DNS Server.

— ip routing

interface vlan 10. (up.)

ip address 10.0.0.254 255.255.255.0.

no shutdown → exit

Same for 20.

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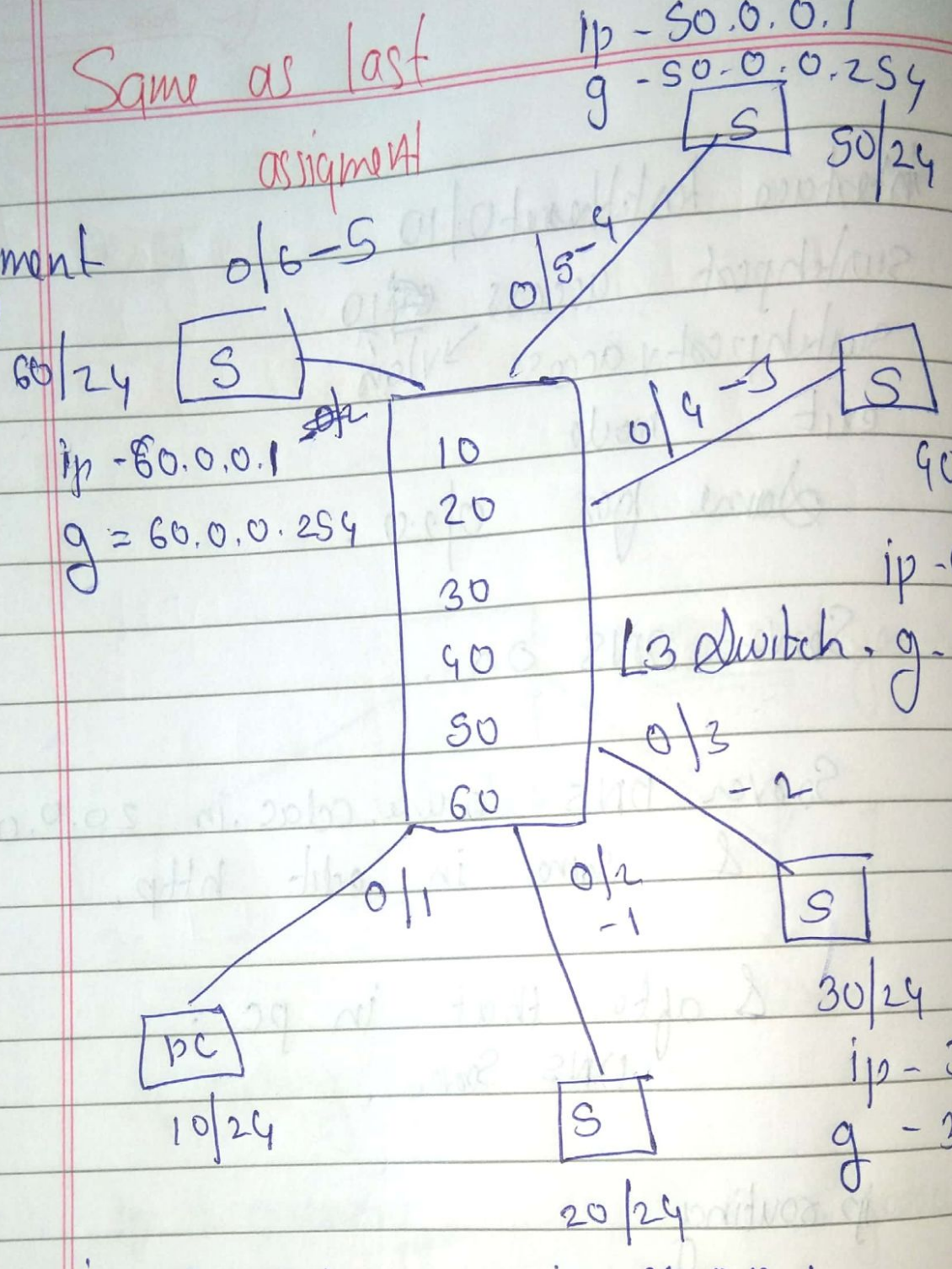
Same as last assigment

Assigment



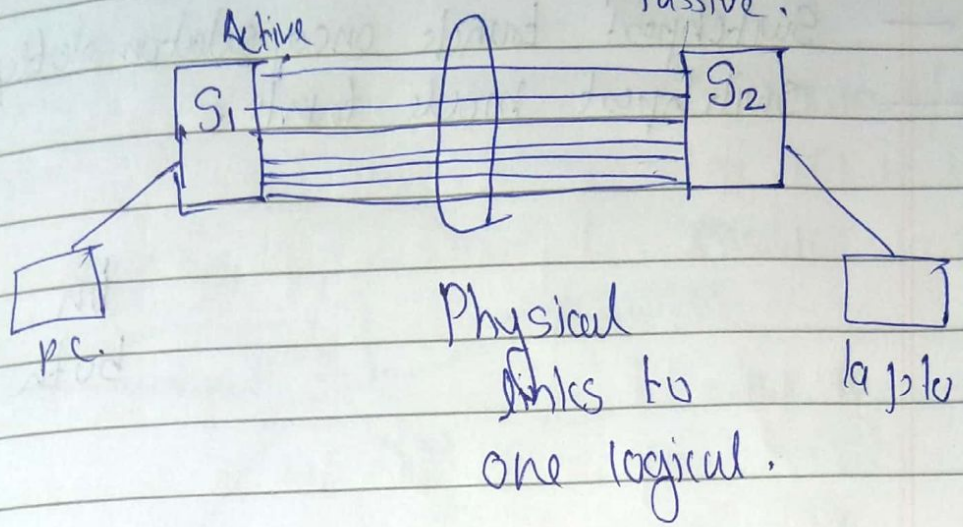
ip - 10.0.0.1
gateway
- 10.0.0.254

ip - 20.0.0.1
gateway
- 20.0.0.254

imp * We cannot take 0/30 because we do not have 30 port in switch.

LAB -

imp assigment:- (To overcome a loss of link we use this lab.



LACP (IEEE certified)
PAGP.

3560 Switch:-
give ip address to PC & laptop.
en
config
hostname LCAP.
do write.
interface range fastethernet 0/1-7.
channel-group 1 mode.
channel-group 1 mode active.
&

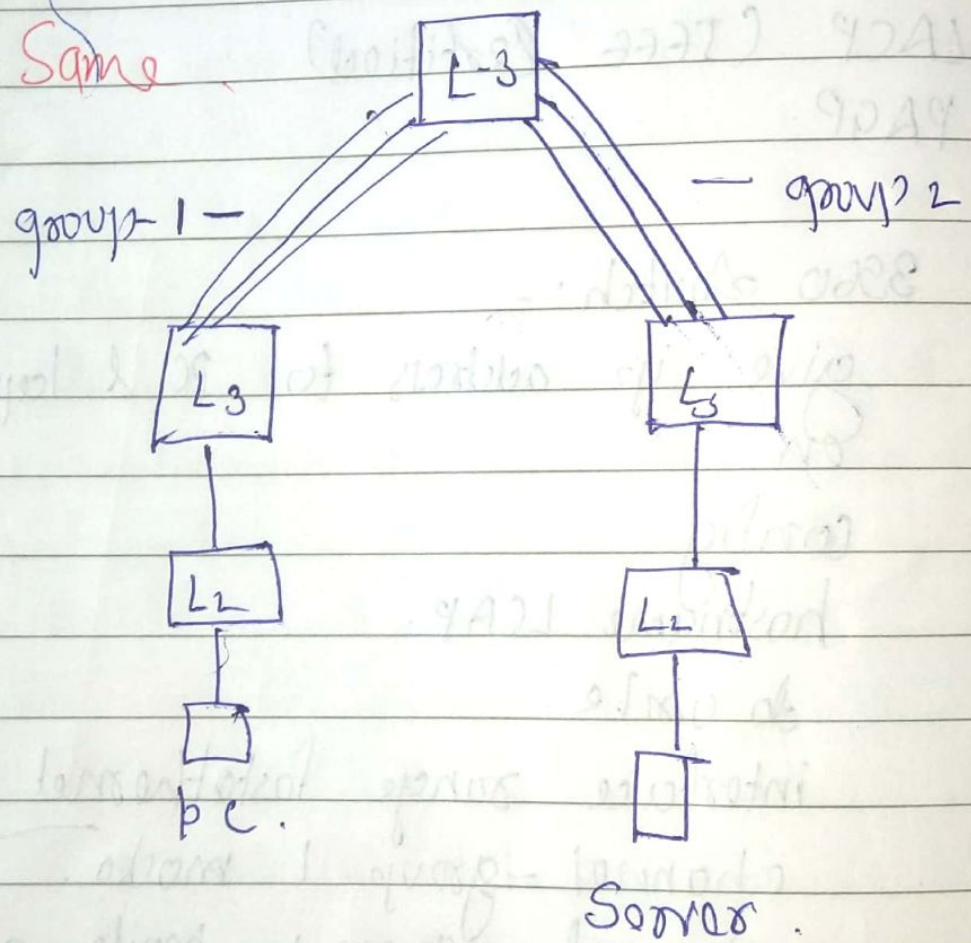
on second switch → Same for passive.

channel-group 1 mode ?

— interface port-channel 1
— switchport trunk encapsulation dot1q
— switchport mode trunk.

by both.

* Same



10.0.0.0 | 30.

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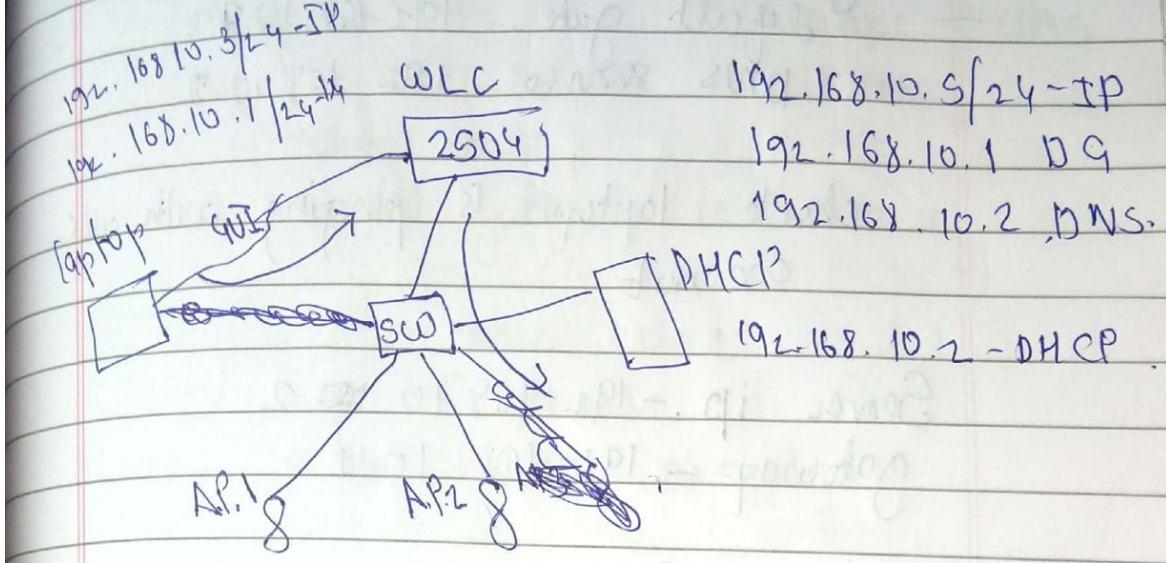
LAN.

WLC - Wireless lan Controller.



wireless device WLC - 2504

2960 switch S1
connect it

LAP - PT (light wt access pnt)
Server -

laptop - L1
Power button in AP plugged on.

WLC :→
Config.
Mangment
ip. - 192.168.10.5.
Sub 255.255.255.0.
Default - 192.168.10.1
DNS - 192.168.10.2

— give ip to laptop
— default gate 192.168.10.1.
DNS service, 192.168.10.2.

check laptop is pinging with WLC or not

Server ip. - 192.168.10.2
gateway - 192.168.10.1

→ DHCP - Service on.
192.168.10.1
DNS - 192.168.10.2.
Start ip address 192 168 10 150.
Max. No. of user 50.
WLC address - 192.168.10.5.
save it
access port :- Config
~~global~~ gigabit ethernet
DHCP → service on

---

add third & plugged in power.

Laptop - 192.168.10.5. web browser

create username & password.

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Name:- WLC.

Management ip — dhpc & dns

192.168.10.5. — same.

Subnet mask

default gateway 192.168.10.1

N/w name cdac

Passphrase

save - save - apply.

ping to WLC by laptop.

L1 - web.

192.168.10.5.

Wireless - 3.

- Connect the smartphone to access pnt

- Config

- wireless.

- SSID will be same as.

N/w name cdac

WPA2 - PSK - password.

connect 2 smartphon.

check. on laptop check.

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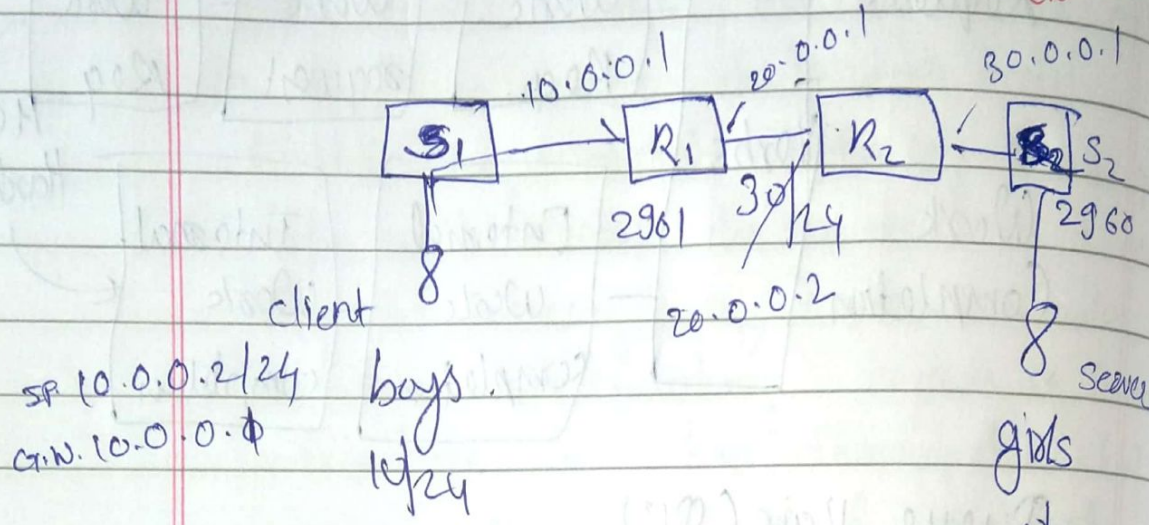
* LAB

ACL (access control list) — std / extended



L3 & L4.

- gives IP
  - client - 10.0.0.2/24
    - G.W. - 10.0.0.1
  - server - 30.0.0.2/24
    - G.W. 30.0.0.1

> en # config terml # hostname # do we
exit.
interface gigaeth 0/0
ip address 10.0.0.2 255.255.255.0
no shutdown.

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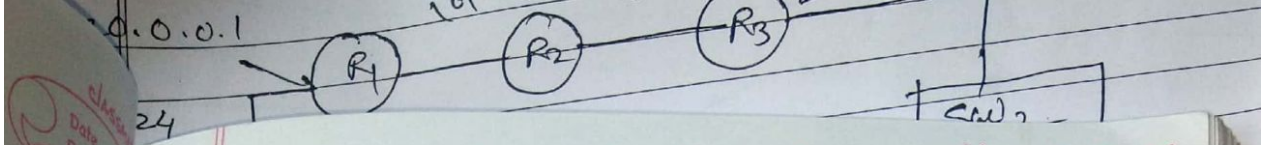

wildcard mask is just opposite to S.M.

if S.M. = 255.255.255.0
WM = 0.0.0.255

same for O/1 & Router 2.

Static Routing.

```
# ip route 30.0.0.0 255.255.255.0
                    20.0.0.2
# no shutdown
# exit.
```

(same for Router R2)

Standard ACL

⇓ Access control to check the packets.

To access

```
# ip access-list standard 10
# permit 20.0.0.0 0.0.0.255
```
wildcard mask.

```
# exit.
```

To blocking the packet

```
# interface gigabitethernet 0/0
# access-group 10 ~~inbou~~ in
# exit.
```

To remove the access -

```
# no ip access-list standard 10
```

extended ACL

Router-2

```
# ip access-list extended 150
# permit ~~ip~~ tcp 10.0.0.0 0.0.0.255
```
↳ wildcard mask

```
~~# no~~ # Permit ~~tcp~~ tcp 10.0.0.0. 0.0.0.255
host 30.0.0.2. eq 80
# in I gigaEthernet 0/0.
ip access-group 1.?
```

~~you~~

ip access-group 150 in.

To remove access control.

no ip access-group 150 in

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