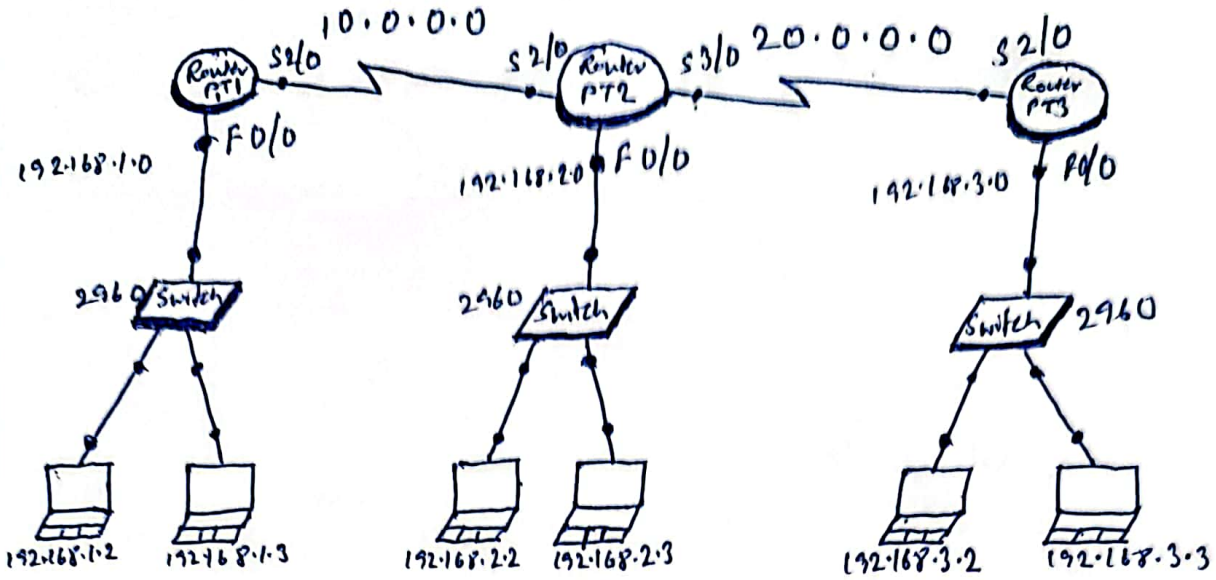
ASSIGNMENT-5

1. Static routing with 3 routers.



→ Three Router PTs are taken and are connected serially. Then router PT1 is connected to a switch (2960). The switch is connected to Two PCs with IP address 192.168.1.2 and 192.168.1.3. Same connection is done with router PT2 and the connected PCs IP address is 192.168.2.2 and 192.168.2.3. Another Router PT3 is also connected in same way with IP address 192.168.3.2 and 192.168.3.3.

→ Now in CLI of Router PT1, we have to set its IP address, mask, and route using commands.

```
Router > en
Router # config t
Router (config) # int f0/0
Router (config-if) # ip add 192.168.1.1 255.255.255.0
```

```
Router(config-if)# no sh
Router(config-if)# int s2/0
Router(config-if)# ip add 10.0.0.1 255.0.0.0
Router(config-if)# no sh
Router(config-if)# ^Z
Router# sh ip int bri
```

Interface	IP-Address	OK?	Method	Status	Protocol
Fast Ethernet 0/0	192.168.1.1	Yes	manual	up	up
Fast Ethernet 1/0	unassigned	Yes	unset	administratively down	down
Serial 2/0	10.0.0.1	Yes	manual	up	up
Serial 3/0	unassigned	Yes	unset	administratively down	down

```
Router# config t
Router(config)# ip route 192.168.2.0 255.255.255.0 10.0.0.2
Router(config)# ip route 20.0.0.0 255.0.0.0 10.0.0.2
Router(config)# ip route 192.168.3.0 255.255.255.0 10.0.0.2
```

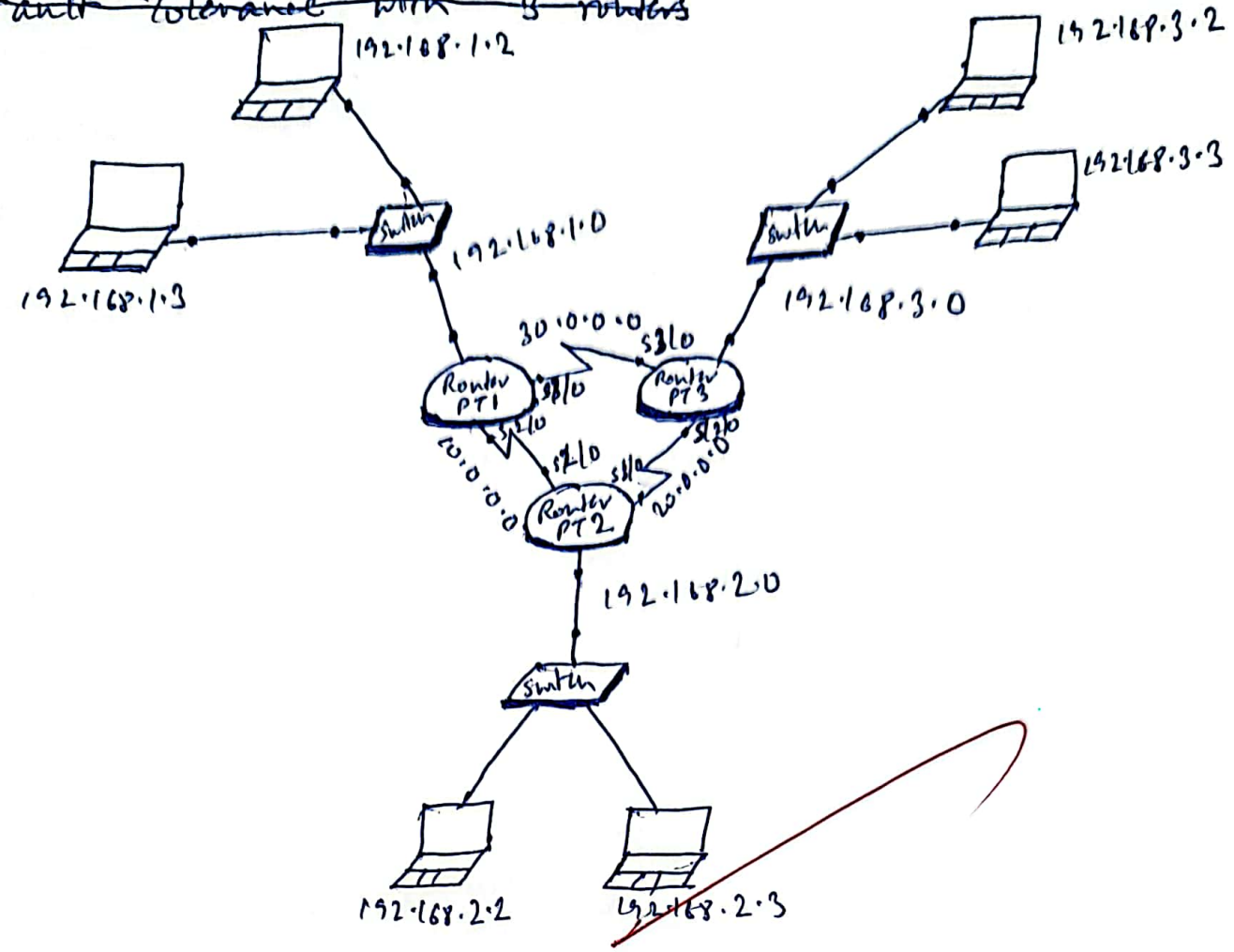
→ Now we have to change the PCs default gateway to Router PT1's IP-address.

→ Same settings and CLI have to be set on Router PT2 and Router PT3.

→ Now we can send packets from Router PT1's connected PCs to router PT2 or Router PT3 connected PCs. At first ping we will get 25% loss but at last we will get 0% loss.

2. State routing in diamond configuration with 3 routers

Aim. ~~Fault Tolerance with 3 routers~~



→ Three Router PTs are taken and are connected with each other in a circular way. Then Router PT 1 is connected to a switch (2960). The switch is connected with two PCs with IP address 192.168.1.2 and 192.168.1.3. Same connection is done with Router PT 2 and Router PT 3, the IP addresses of PCs under Router PT 2 are 192.168.2.2 and 192.168.2.3 and the IP address of PC's under Router PT 3 are 192.168.3.2 and 192.168.3.3.

→ Now in CLI of Router PT 1, we have to set its IP address, mask and ~~other settings~~ route using commands

Router > en
Router # config t

Router (config)# int f 0/0
Router (config-if)# ip add 192.168.1.1 255.255.255.0
Router (config-if)# no sh
Router (config-if)# ip int s 2/0
Router (config-if)# ip add 10.0.0.1 255.0.0.0
Router (config-if)# no sh
Router (config-if)# int s 3/0
Router (config-if)# ip add 30.0.0.1 255.0.0.0
Router (config-if)# no sh
Router (config-if)# ^Z
Router # sh ip int brief

Interface	IP-Address	OK?	Method	Status	Protocol
Fast Ethernet 0/0	192.168.1.1	Yes	manual	up	up
Serial 2/0	10.0.0.1	Yes	manual	up	up
Serial 3/0	30.0.0.1	Yes	manual	up	up

Router # config t
Router (config)# ip route 192.168.2.0 255.255.255.0 10.0.0.2
Router (config)# ip route 192.168.3.0 255.255.255.0 30.0.0.2

→ Now we have to change the PCs default gateway to Router PT 1s IP-address.

→ Same settings and CLI have to be set on Router PT2 and PT3 respectively.

→ Now we can send packets from Router PT 1's connected PCs to router PT 2 or Router PT 3 connected PCs or vice versa. At first ping we will get 25% loss but at last we will get 0% loss

Sound
14/9/23