10/10/25 Routing at Network Layer.

(a) Static Routing Configuration using CISCO Packet Tracer.

AIM: To simulate & verify static routing config. in Cisco Packet Tracer.

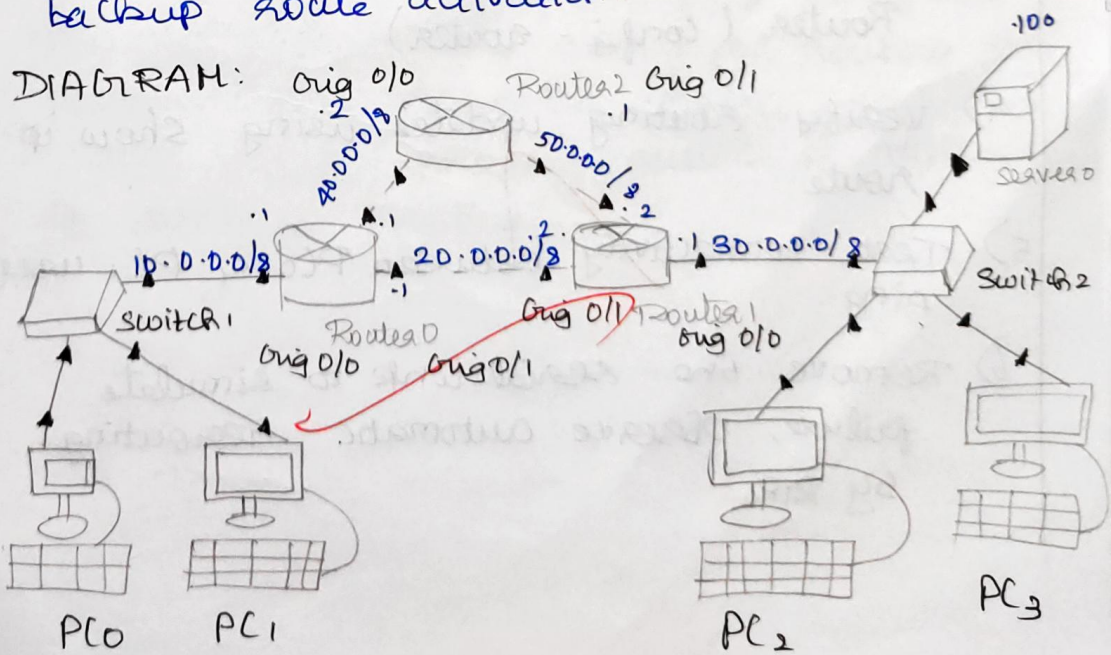
PROCEDURE:

1) Connect 3 routers (R0, R1, R2) with respective networks.
2) Configure IP addresses on all router interfaces
3) On Router0, add static routes:

Router (config)# ip route 30.0.0.0 255.0.0.0 20.0.0.2
Router (config)# ip route 30.0.0.0 255.0.0.0 40.0.0.220
Router (config)# ip route 50.0.0.0 255.0.0.0 40.0.0.210

4) Similarly, configure static routes on Router1 & 2 for their unreachable networks.
5) Use show ip route static to verify routing entries.
6) Test connectivity using ping & tracert.
7) Delete or disable a link to observe backup route activation.

DIAGRAM:



RESULT: Static routing configured & verified. The routers used main routes for communication & backup routes were activated automatically when the main route failed.

EXP: 11(b) RIP configuration using CISCO Packet Tracer.

AIM: To simulate RIP in CISCO Packet Tracer & verify dynamic routing.

PROCEDURE:

1) Connect 3 Routers & assign IP addresses to FastEthernet & Serial interfaces as per the topology.

2) Enable interfaces.

Router (config-if)

3) Configure RIP on all routers

Router (config)

Router (config-router)

Router (config-router)

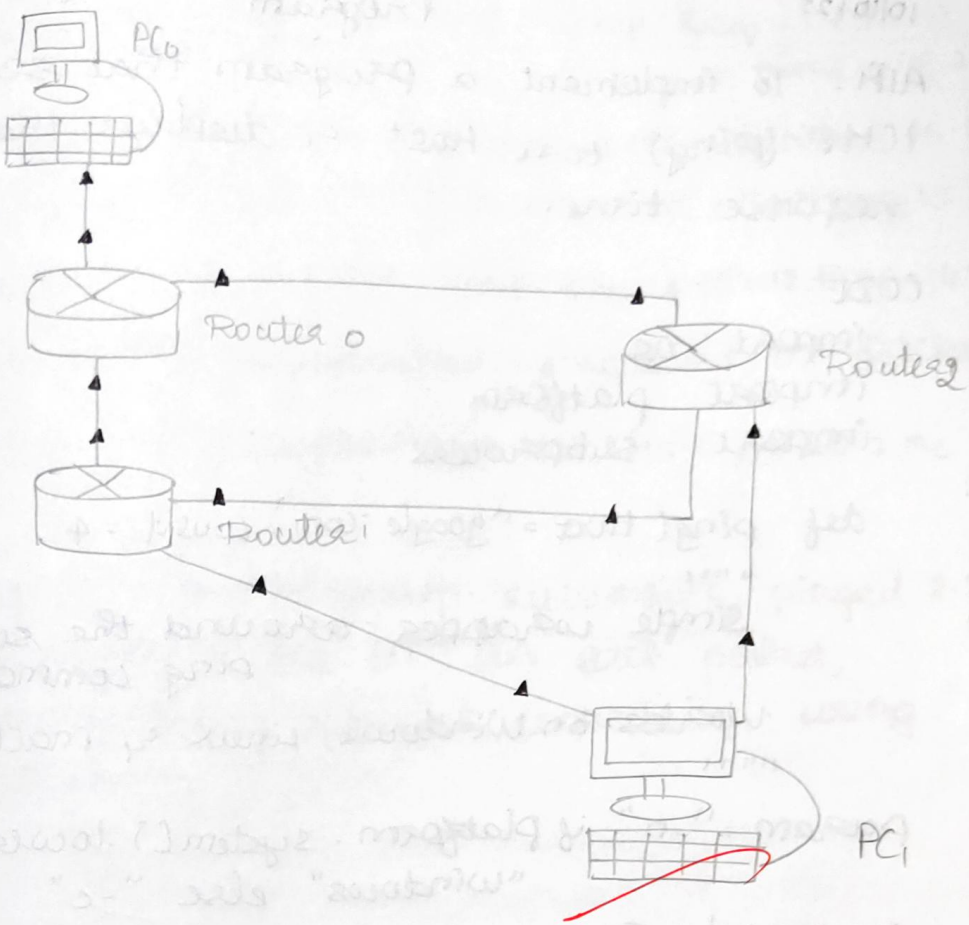
Router (config-router)

4) Verify routing updates using show ip route

5) Test connectivity between PC0 & PC1 using ping.

6) Remove one serial link to simulate failure, Observe automatic rerouting by RIP.

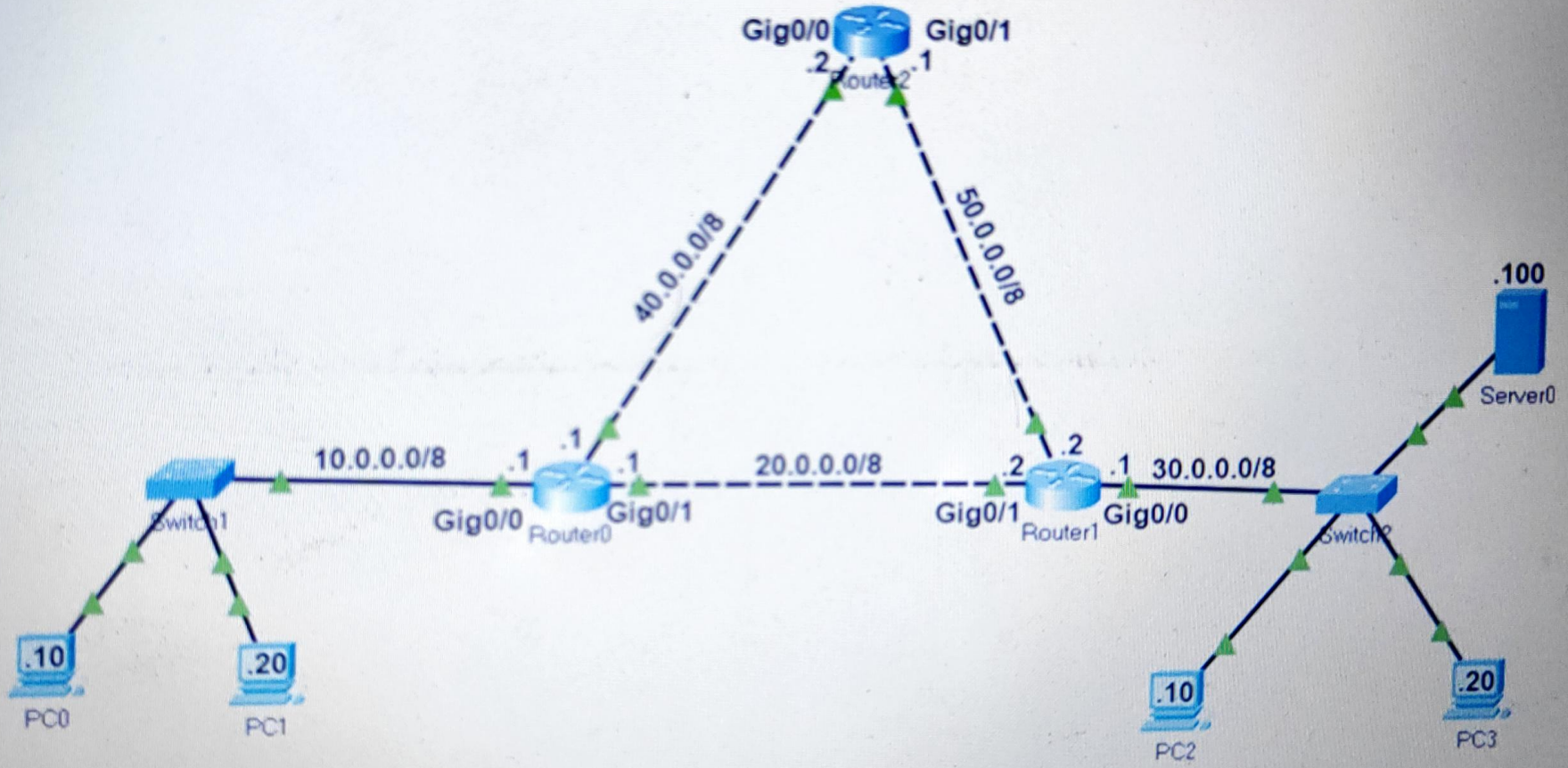
DIAGRAM:



RESULT:

13/X/25 10/10

RIP protocol was successfully configured. Routers dynamically exchanged routing info & automatically rerouted traffic when a link failed, proving successful implementation of dynamic routing.


Gig0/0
Gig0/1
.2
.1
Router2
40.0.0.0/8
50.0.0.0/8
.100
Server0
10.0.0.0/8
.1
.1
.1
.2
20.0.0.0/8
.2
.1
30.0.0.0/8
Switch1
Gig0/0
Router0
Gig0/1
Gig0/1
Router1
Gig0/0
Switch2
.10
.20
PC0
PC1
.10
.20
PC2
PC3