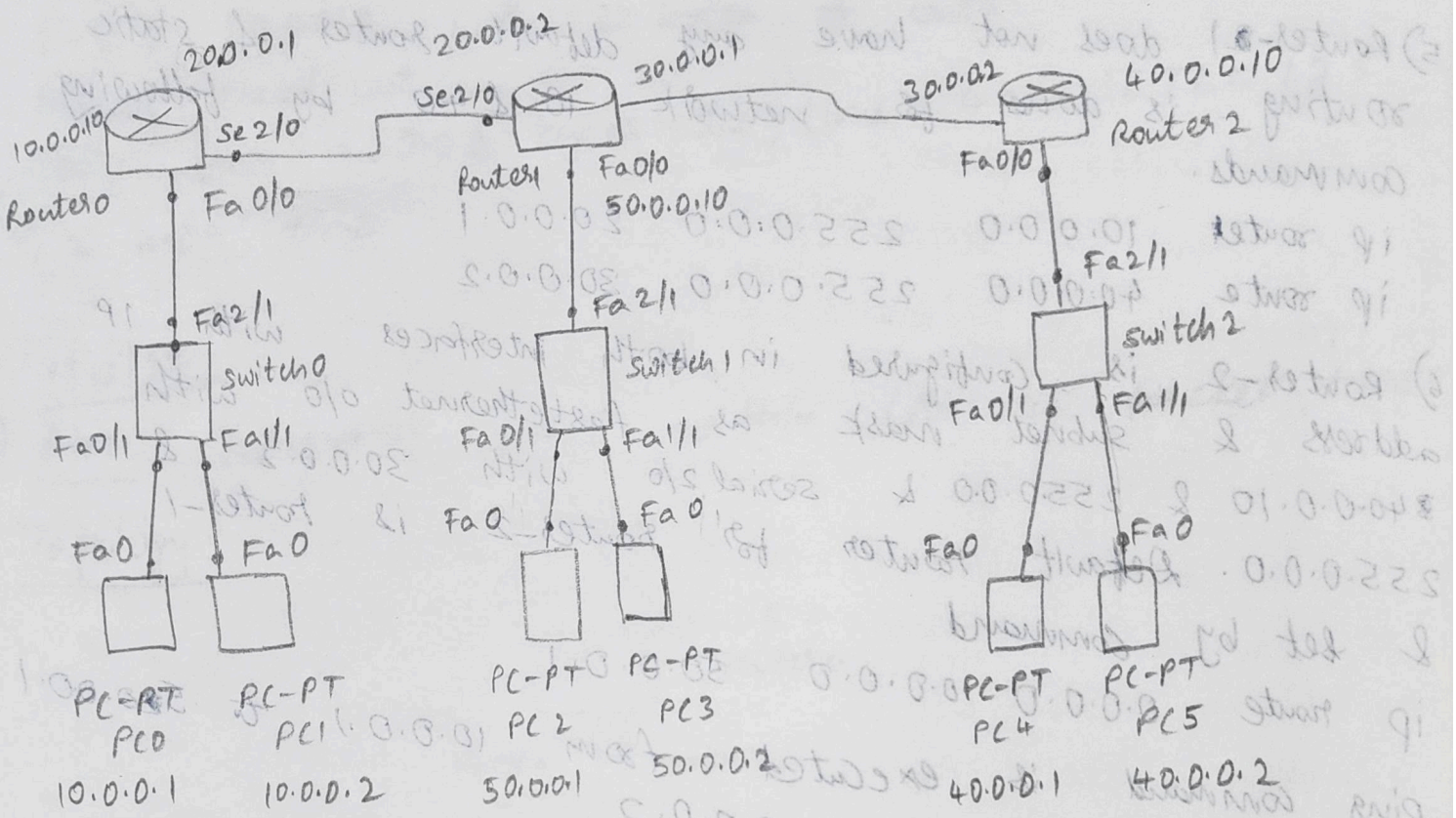
25/11/22

3) Aim: Configuring default route to router

Topology:



Procedure: 1) First, Put 6 PC's, 3 switches & 3 routers & Connect two PC's to each switch with copper straight through wire and each switch is connected to One router with copper straight through wire, & three routers are connected by serial cables and nodes are placed for all devices & networks.

2) A PC is clicked to set attributes for PC & each PC has 3 attributes which are IP address subnet mask & gateway & all three are set according to nodes placed. This process is done for all PC's.

3) For router-0, configurations are done in CLI. IP address & subnet mask are set for both interfaces - fast ethernet 0/0 as 10.0.0.10 & 255.0.0.0 & serial 2/0 as 40.0.0.1 and 255.0.0.0. Router-01 is default router for router-0 & this is done by command ip route 0.0.0.0 0.0.0.0 20.0.0.2.

4) For Router-1, IP address & Subnet mask are set for all three interfaces - fastethernet 0/0 as 50.0.0.10 & 255.0.0.0 & serial 2/0 as 20.0.0.2 & 255.0.0.0 & serial 3/0 as 30.0.0.1 & 255.0.0.0.

5) Router-1 does not have any default router & static routing - is done for network 10 & 40 by following commands.

ip route 10.0.0.0 255.0.0.0 20.0.0.1
ip route 40.0.0.0 255.0.0.0 30.0.0.2

6) Router-2 is configured in both interfaces with IP address & subnet mask as fastethernet 0/0 with 40.0.0.10 & 255.0.0.0 & serial 2/0 with 30.0.0.2 & 255.0.0.0. Default router for router-2 is router-1 & set by command

ip route 0.0.0.0 0.0.0.0 50.0.0.1

Ping command is executed from 10.0.0.1 to 50.0.0.1 & from 10.0.0.1 to 40.0.0.2

Observations:

Learning Outcomes:

- One router can't have 2 default routers
- Default router for first router is middle routers as any packets which have to be delivered will go to middle routers.
- Default router for right router is middle routers for the same reason
- Middle router doesn't have any default router as if one of the routes is made default then there is a chance that packets which are to be sent to switch may send to router.

Result:

Ping 50.0.0.1

Pinging 50.0.0.1 with 32 bytes of data

Reply from 50.0.0.1 : bytes = 32, time = 1ms, TTL = 126
↳[2 more times

Ping 40.0.0.2
Pinging 40.0.0.2 with 32 bytes of data
Request timed out
Reply from 40.0.0.2 : bytes = 32, time = 4ms, TTL = 125
↳[2 more times