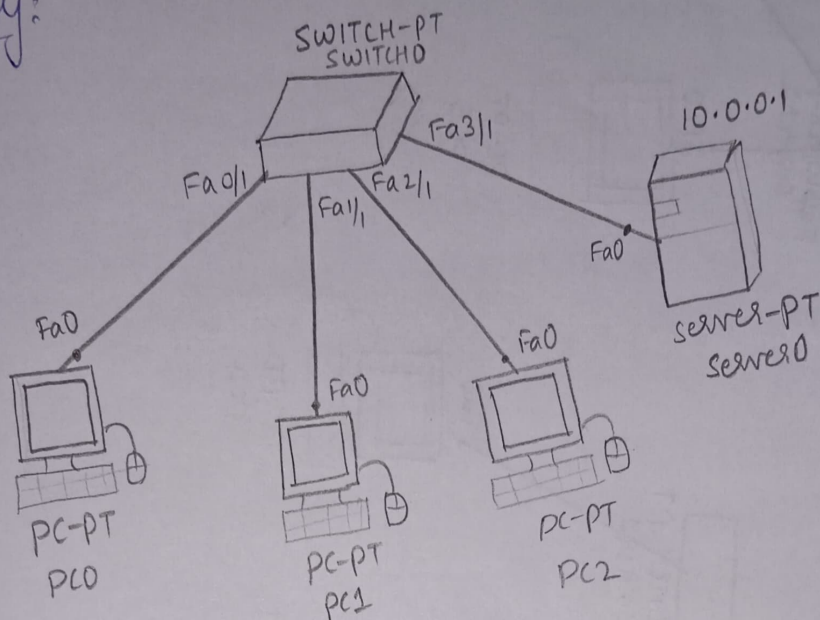


DHCP within LAN and Outside LAN

Aim: To configure DHCP within LAN.

Topology:



procedure:

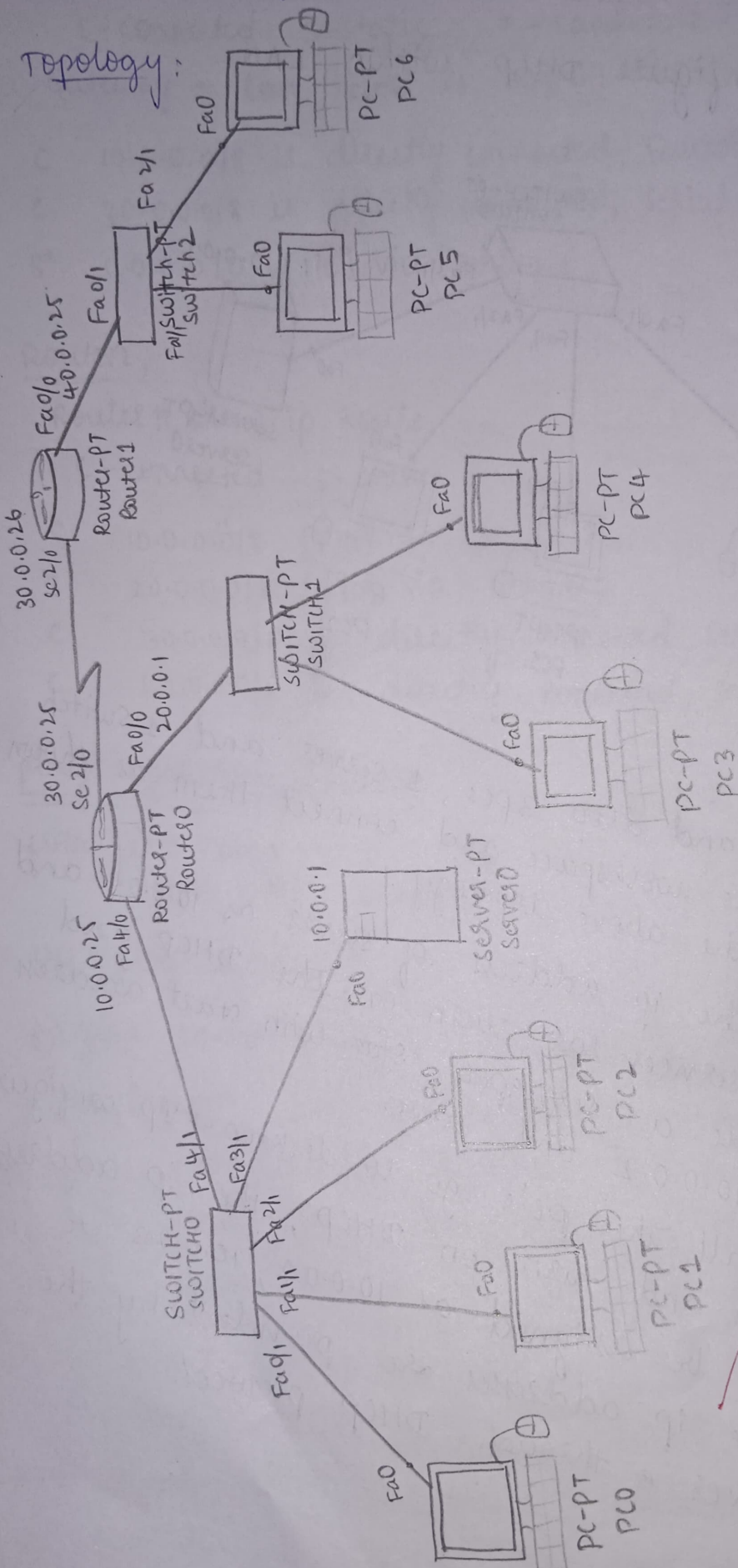
step 1: Drag and drop 3 PCs, 1 server and 1 switch to the workspace and connect them as shown in the above topology.

step 2: Set the IP address of server as 10.0.0.1 and in services tab, turn on the DHCP and create a serverpool star with start address as 10.0.0.2 and save.

step 3: In all the PC's go to desktop → IP configuration and turn on DHCP, the IP address will be assigned as 10.0.0.2, 10.0.0.3 etc., These IP addresses are provided by the server through DHCP protocol.

Aim: TO configure DHCP outside the LAN

Topology ..





## procedure:

step 4: To the previous topology, connect 2 routers, 2 switches and 4 PCs as shown in above topology and set the gateway of server as 10.0.0.25

step 5: Configure the router0 by using following commands -

```
router > enable
```

```
router # config t
```

```
router (config) # interface fastethernet 4/0
```

```
router (config-if) # ip address 10.0.0.25 255.0.0.0
```

```
router (config-if) # no shut
```

```
router (config-if) # exit
```

```
router (config) # interface fastethernet 0/0
```

```
router (config-if) # ip address 20.0.0.1 255.0.0.0
```

```
router (config-if) # no shut
```

```
router (config-if) # exit
```

```
router (config) # interface serial 2/0
```

```
router (config-if) # ip address 30.0.0.25 255.0.0.0
```

```
router (config-if) # no shut
```

```
router (config-if) #
```

step 6: Configure the router1 by using following commands -

```
router > enable
```

```
router # config t
```

```
router (config) # interface serial 2/0
```

```
router (config-if) # ip address 30.0.0.26 255.0.0.0
```

```
router (config-if) # no shut
```

```
router (config-if) # exit
```

```
router (config) # interface fastethernet 0/0
```

```
router (config-if) # ip address 40.0.0.25 255.0.0.0
```

```
router (config-if) # no shut
```

```
router (config-if) # exit
```

Step 7: Since router0 knows only 10.0.0.0, 20.0.0.0 and 30.0.0.0 networks, we have to perform static routing to connect with 40.0.0.0 network by using following commands.

router0

```
router > enable
```

```
router # config t
```

```
router (config) # ip route 40.0.0.0 255.0.0.0 30.0.0.0
```

```
router (config) # exit.
```

Step 8: For router1 perform default routing by using following commands.

router1

```
router > enable
```

```
router # config t
```

```
router (config) # ip route 0.0.0.0 0.0.0.0 30.0.0.0
```

```
router (config) # exit.
```

Step 9: For router0 and router1 <sup>configure</sup> set the ip helper address as ~~server's~~ address.

router0

```
router (config) # interface fastethernet 0/0
```

```
router (config-if) # ip helper-address 10.0.0.1
```

```
router (config-if) # exit
```

router1

```
router (config) # interface fastethernet 0/0
```

```
router (config-if) # ip helper-address 10.0.0.1
```

```
router (config-if) # exit.
```

Step 10: create 2 more serverpools in the server with starting addresses 20.0.0.2 and 40.0.0.2 and gateway 10.0.0.25. And check all pc's ip configuration window by setting to DHCP. the dynamic ip's will be assigned.

## observation:

Ip addresses will be assigned to PCs dynamically by the server through DHCP protocol.

Write about default gateway

10/10

KL  
17/7/23

