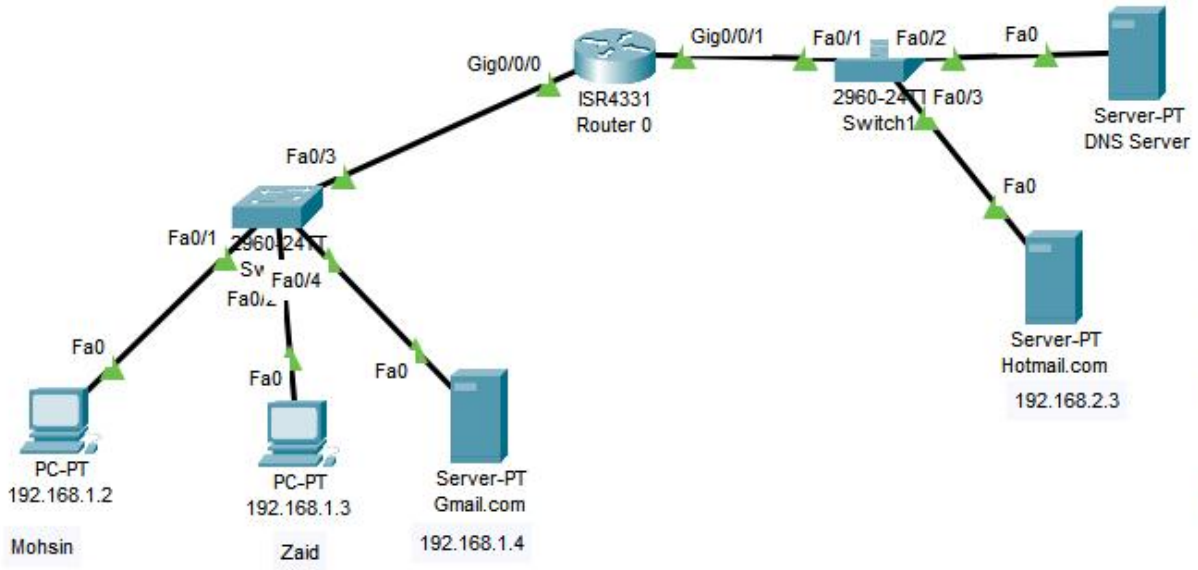


First Setup DNS Server
1.Go to Services
1. Name of website
2. Website's Device IP

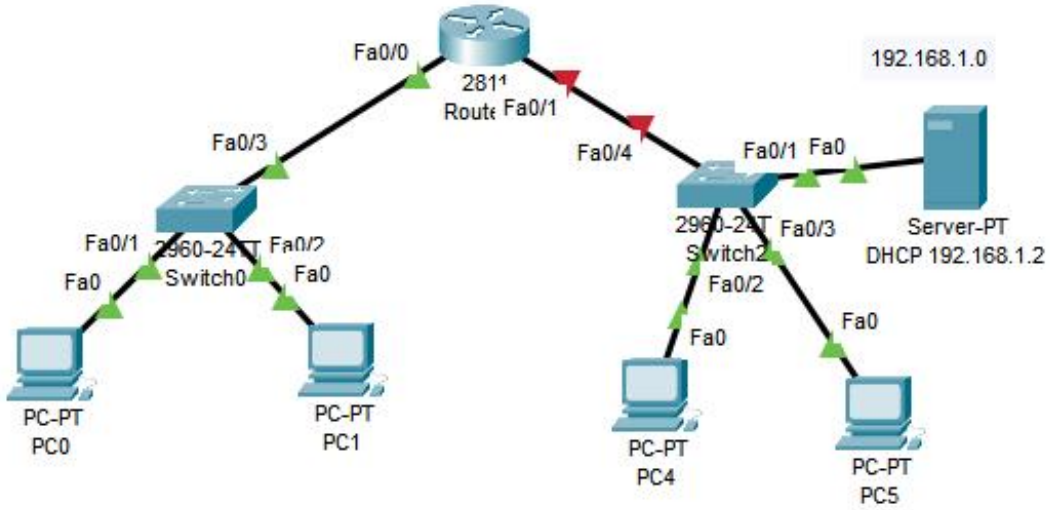
Use this server for Gmail.com and Hotmail.com configure in the same way

For SMTP
1.Make Sure your gmail.com is setup at DNS
2. Go to gmail.com "Server" and go to SMTP

3. add gmail.com
username mohsin
pass mohsin

4.add gmail.com
username zaid
pass zaid

5.Open The Client
6. Go to email
mohsin
mohsin@gmail.com
gmail.com
gmail.com
mohsin
mohsin

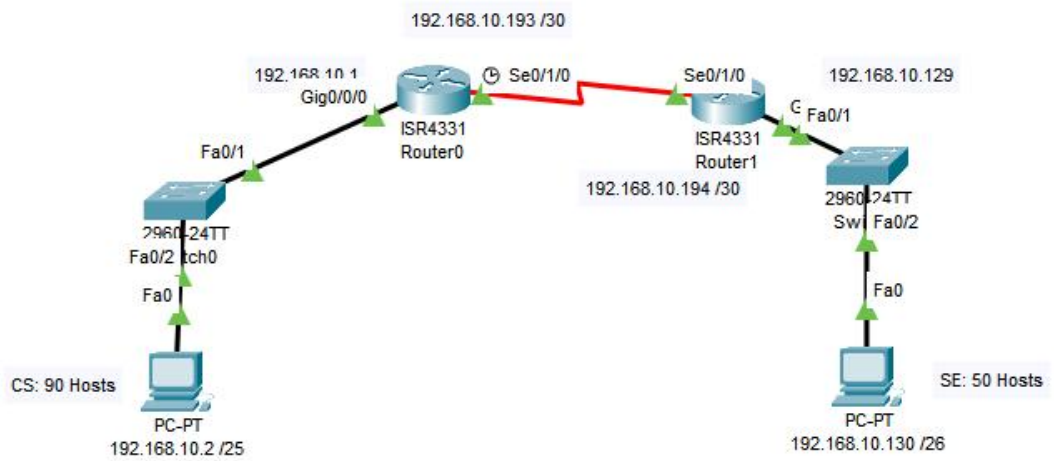


DHCP via Server
Go to Services
then do settings

DHCP via Router
Router(config)#ip dhcp pool hello
Router(dhcp-config)#network NETWORK_ADD SUBNET
Router(dhcp-config)#default-router ROUTER_IP
Router(dhcp-config)#dns-server DNS_IP
Router(dhcp-config)#ex
Router(config)#ip dhcp excluded-address START_IP END_IP

show ip dhcp binding

Ip address of Router,
first IP of PC 0 will be 192.168.2.2
unless excluded



Subnet Tree

256 255.255.255.0 /24

128 255.255.255.128 /25

64 255.255.255.192 /26

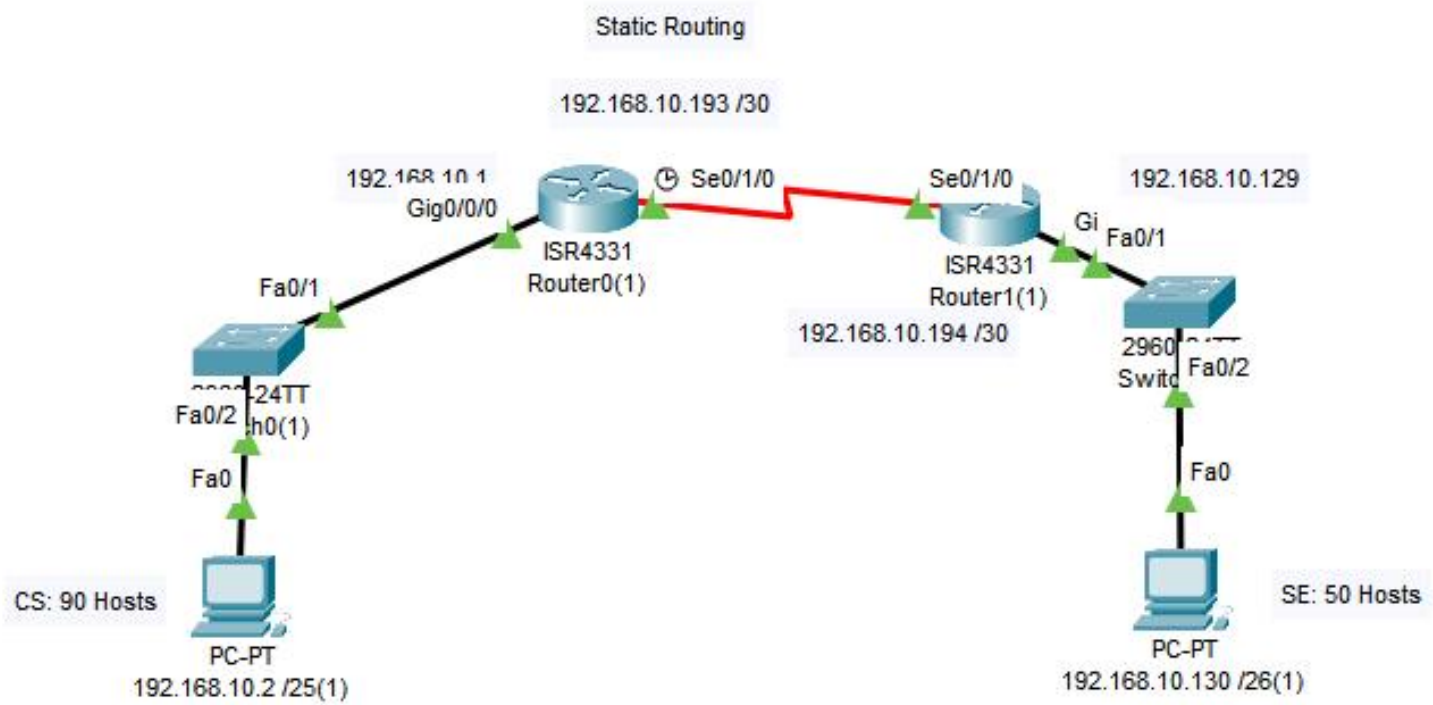
32 255.255.255.224 /27

Make Topology

For Serial Connection between Router add "XX-2T" componenet automatic wire

Make The Table

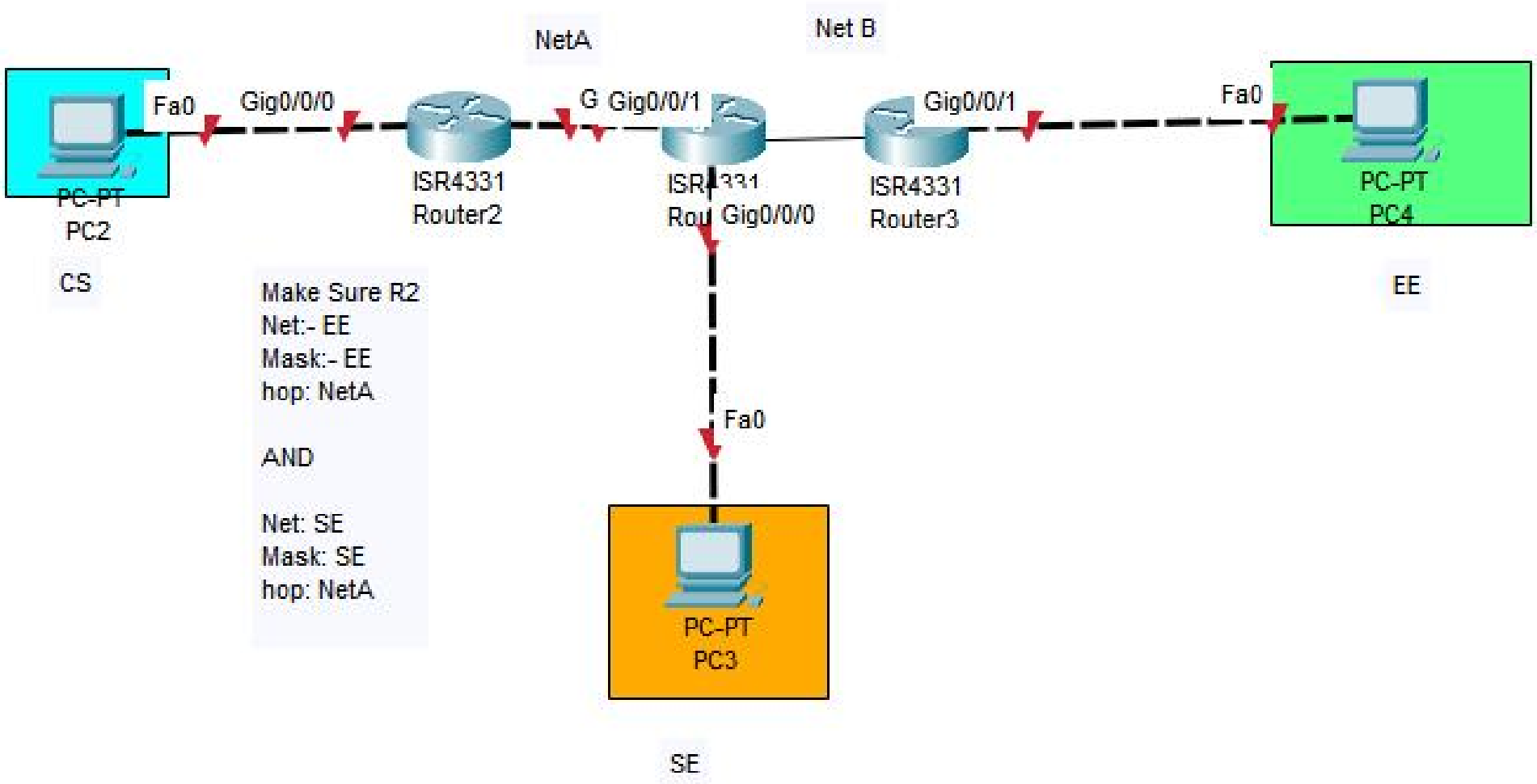
Hosts Required	Alloc	NA	BA 0 + 2^7-1	Range	Mask 32-7
CS: 90	2^7	192.168.10.0	192.168.10.127	192.168.10.1 To 192.168.10.126	/25
SE: 50	2^6	.128	.191	129 to 190	/26
Net A	2^2	.192	.195	.193 to .194	/30

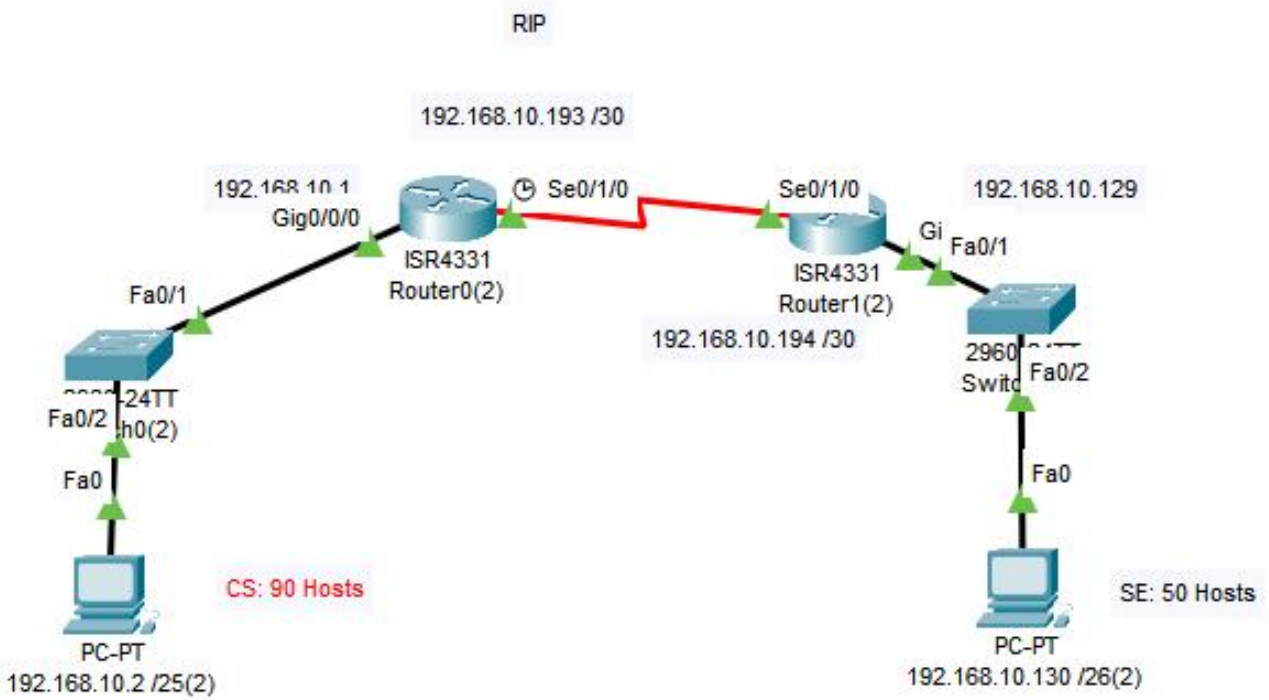


Go to R0
Static GUI

Network 192.168.10.128
Subnet /26 i.e above Network's Subnet
Next Hop 192.168.10.194

Do same For R1


NetA
Net B
Fa0
Gig0/0/0
G
Gig0/0/1
Gig0/0/1
Fa0
PC-PT
PC2
ISR4331
Router2
ISR4331
Rou
Gig0/0/0
ISR4331
Router3
PC-PT
PC4
CS
Make Sure R2
Net:- EE
Mask:- EE
hop: NetA
AND
Net: SE
Mask: SE
hop: NetA
EE
Fa0
PC-PT
PC3
SE



Rip V1: Doesn't Supports Subnetting
Rip V2: Supports Subnetting

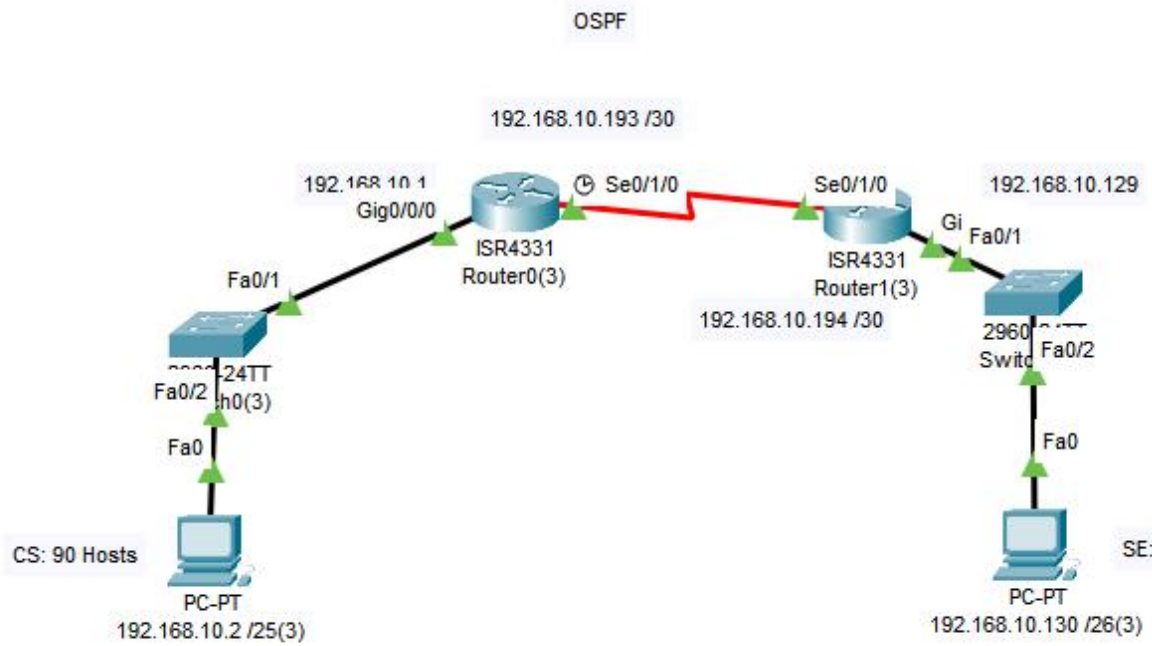
For Router 0

```
Router(config)#router rip
Router(config-router)#version 2        remove this line for version 1
Router(config-router)#network 192.168.10.0
Router(config-router)#network 192.168.10.192
Router(config-router)#no auto-summary
```

If
Router(config)# do sh ip protocols

else
Router# sh ip protocols

Router# sh ip route

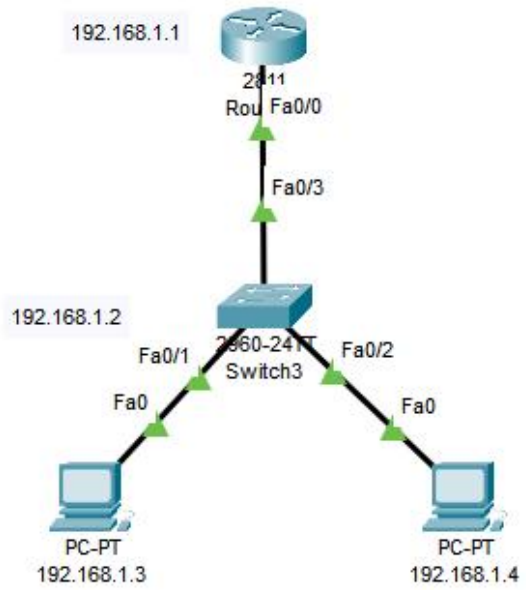


For Router 1

Router(config)#router ospf 2 make sure to change this 2 to 1 for Router 0
Router(config-router)#network 192.168.10.128 0.0.0.63 area 0
Router(config-router)#network 192.168.10.192 0.0.0.3 area 0

Router(config-router)#network Neighbor_NetworkAddress Wildmask area 0

Router#sh ip route
Router#sh ip ospf interface
Router#sh ip ospf database
Router#sh ip ospf neighbor
Router#clear ip route*



Make Topology

Configure Switch

```
Switch(config)#int vlan 1
Switch(config-if)#ip address 192.168.1.2 255.255.255.0
Switch(config-if)#no sh

Switch(config)#line vty 0 15
Switch(config-line)#password cisco
Switch(config-line)#login
Switch(config-line)#end

Switch#config t
Switch(config)#enable password cs
```

Go to PC cmd
telnet 192.168.1.2
password cisco

enable
password cs

FOR SSH
ssl -l admin 192.168.1.2

Optional
ssl -l mohsin_k200353 IP

SSH

```
Switch(config)#hostname mohsin
mohsin(config)#ip domain mohsin_k200353
mohsin(config)#ip domain name mohsin_k200353
mohsin(config)#crypto key generate rsa
1024
mohsin(config)#ip ssh version 2
mohsin(config)#line vty 0 15
mohsin(config-line)#transport input ssh
username mohsin_k200353 secret cisco
line vty 0 15
login local
```

Copy Paste Version

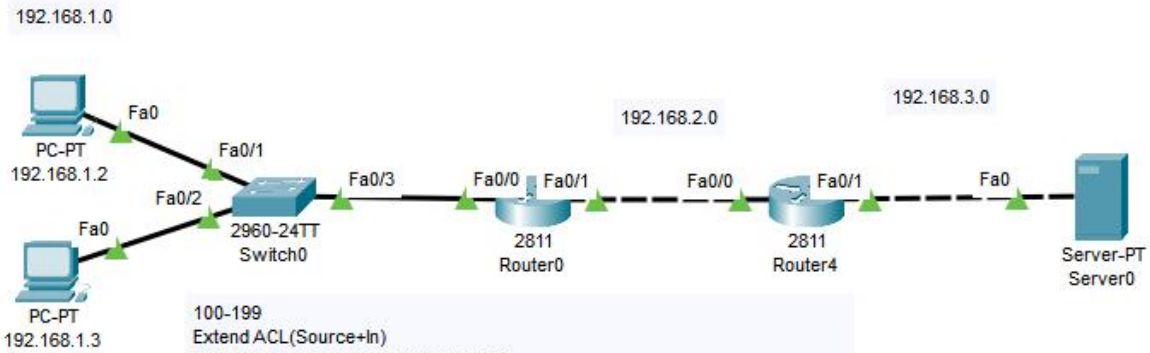
```
en
config t
int vlan 1
ip address 192.168.1.2 255.255.255.0
no sh
exit

line vty 0 15
password cisco
login
end

config t
enable password cs
```

Copy Paste Version

```
hostname mohsin
ip domain mohsin_k200353
ip domain name mohsin_k200353
crypto key generate rsa
1024
ip ssh version 2
line vty 0 15
transport input ssh
```



Make Topology and Routing Implemented

1-99
Standard ACL(Dest+Out)
Find the router nearest to Dest (R1)

```
Router(config)#access-list 2 deny 192.168.1.2 0.0.0.0
Router(config)#access-list 2 permit any
Router(config)#int fa0/1
Router(config-if)#ip access-group 2 out
```

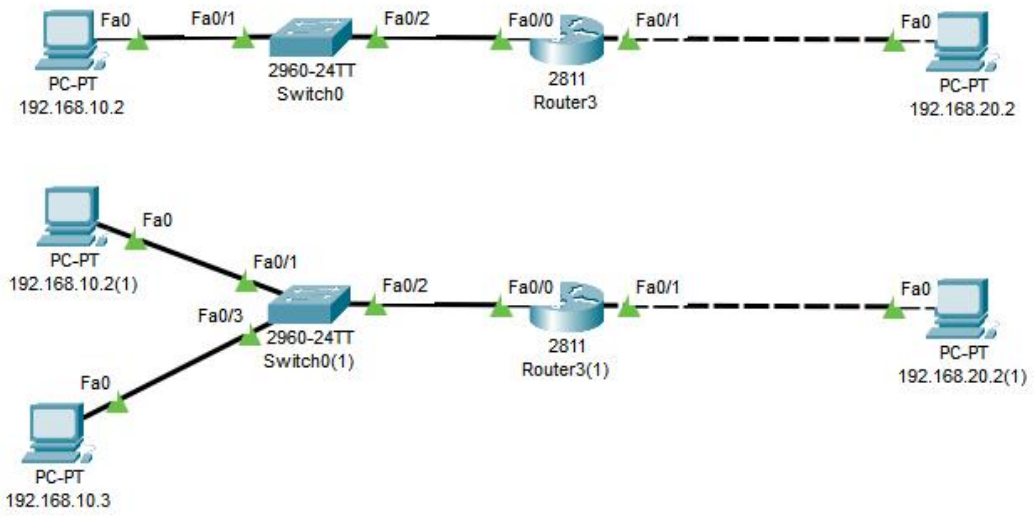
Named Standard ACL

```
Router(config)#ip access-list standard Hello
Router(config-std-nacl)#deny 192.168.1.2 0.0.0.0
Router(config-std-nacl)#permit any
Router(config-std-nacl)#exit
Router(config)#int fa0/1
Router(config-if)#ip access-group Hello out
Router(config)#no ip access-list standard Hello
```

100-199
Extend ACL(Source+In)
Find the router neartest to Source(R0)

```
 Router(config)#ip access-list extended World
Router(config-ext-nacl)#deny tcp 192.168.1.2 0.0.0.0 192.168.3.2 0.0.0.0 eq 80
Router(config-ext-nacl)#permit tcp any any
Router(config-ext-nacl)#ex
Router(config)#int fa0/0
Router(config-if)#ip access-group World in
Router(config-if)#ex
```

```
Router(config)#access-list 102 deny tcp 192.168.1.2 0.0.0.0 192.168.3.2 0.0.0.0 eq 80
Router(config)#access-list 102 permit tcp any any
Router(config)#int fa0/0
Router(config-if)#ip access-group 102 in
```



PreRequesites

```
Router(config-if)#int fa0/0
Router(config-if)#ip nat inside
Router(config-if)#int fa0/1
Router(config-if)#ip nat outside
```

Static NAT

```
Router(config-if)#ip nat inside source static 192.168.10.2 200.200.200.200
Router(config)#ex
```

```
no ip nat inside source static
show ip nat translation
```

Dynamic NAT

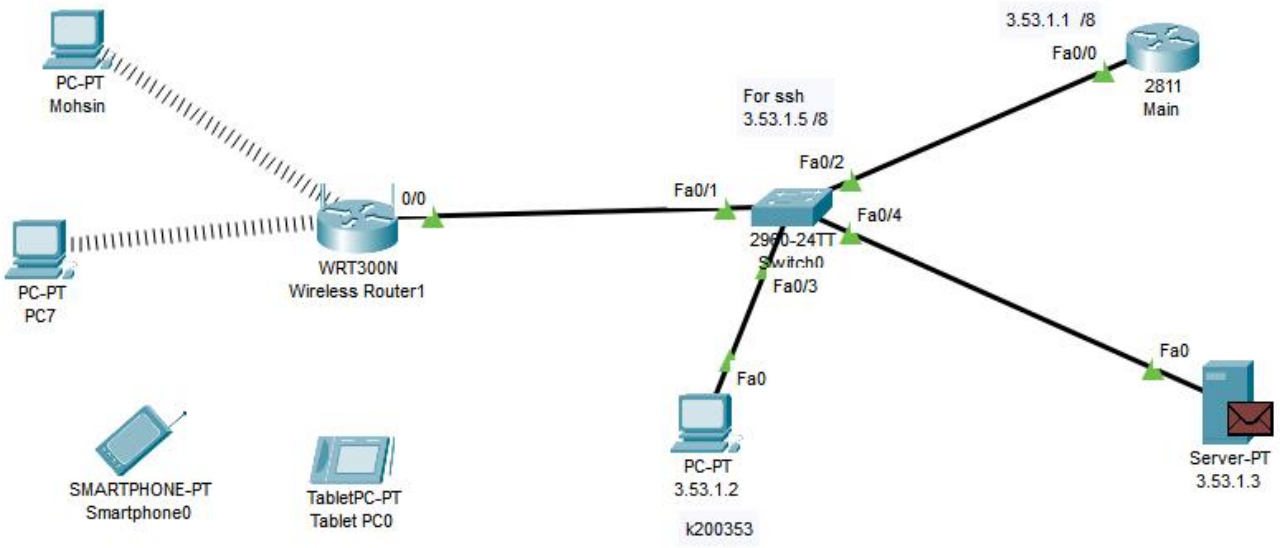
```
Router(config)#access-list 10 permit 192.168.10.0 0.0.0.255
Router(config)#ip nat pool CCNP 200.200.200.1 200.200.200.200 netmask 255.255.255.0
Router(config)#ip nat inside source list 10 pool CCNP
```

can also add overload

PAT

```
Router(config)#access-list 10 permit 192.168.10.0 0.0.0.255
Router(config)#ip nat inside source list 10 int fa0/1 overload
```

```
Router(config)#access-list 10 permit 192.168.10.0 0.0.0.255
R1(config)#ip nat pool ccna 200.200.200.1 200.200.200.200 netmask 255.255.255.0
R1(config)#ip nat inside source list 10 pool ccna overload
R1(config)#int fa0/1
```



Remove The existing card from PC and add Wifi Card

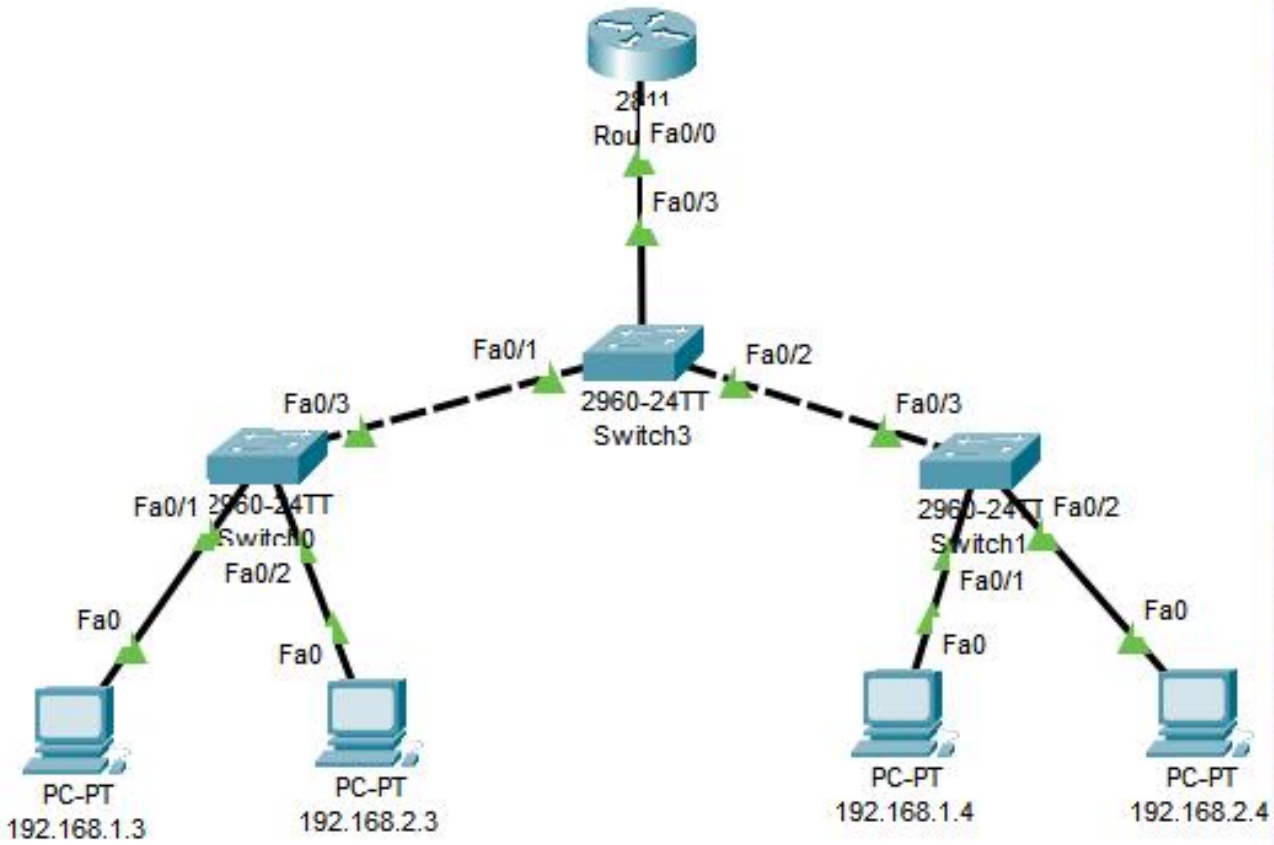
Change the router to Static IP such that
imagine it belongs to one of the network of main

Gateway is Main now
Give the DHCP some other ID's in Network Tab downwards

Change SSID: Mohsin_k200353
in wireless tab

Changing Secuirty go to wireless and then wireless_security
select WEP and then ur 10 digit password

Make sure to reconnet with PC's after changing SSID i.e wireless refresh connect



Make Topology

Go to Each Switch and go to
Vlan Database and add Vlan Name and number
CS:10
EE:20

Also Remember select 1 single Ip
for Router so in this case 192.168.1.1

Go To Switch and assign respective Vlan's Accespoint
and TrunkPoint

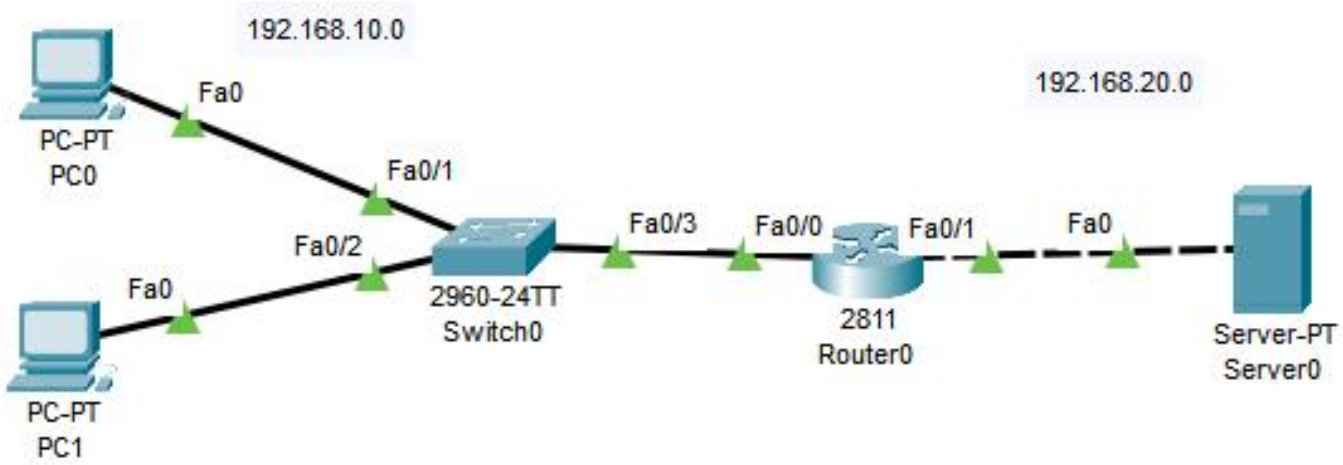
Different Networks Router On Stick
Dont Forget to add Vlan Name And number on Router as well

Last Step Go to Router

```
Router(config)#int fa0/0.10
Router(config-subif)#encapsulation dot1Q 10
Router(config-subif)#ip address 192.168.1.1 255.255.255.0
exit
int fa0/0.20
encapsulation dot1Q 20
Router(config-subif)#ip address 192.168.2.1 255.255.255.0
```

no shutdown with GUI no assigning of IP required

Make Sure to make switch to Router Trunk



turn FTP on, give privileges
Go to Host, cmd, gtp server's IP
? to look at commands get filename,
texteditor create a file
dir all files
put filename (for Upload)
get filename (for Download)