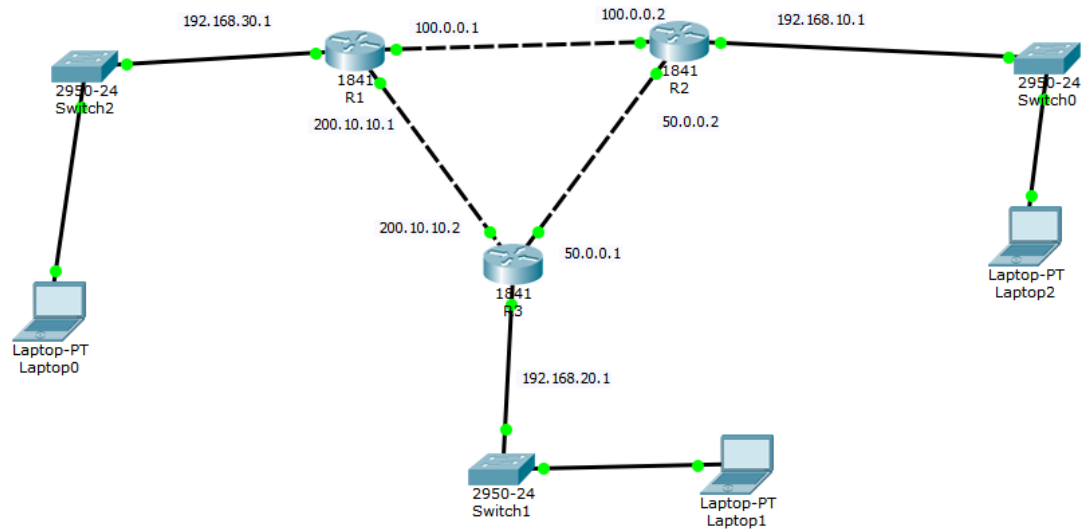# Javairia Rehman

19P-0020

BS(CS) 19-5A

"Computer Network Lab "

Lab 10 Home Work

STEPS OF MAKING TOPOLOGY

1. MAKE SENERIO

2. CONFIGURATION OF ROUTERS
- ## ROUTER 1

```
Router>enable
Router#config terminal
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#interface f0/0
Router(config-if)#ip address 100.0.0.1 255.0.0.0
Router(config-if)#no shut

Router(config-if)#
%LINK-5-CHANGED: Interface FastEthernet0/0, changed state to up

Router(config-if)#ex
Router(config)#interface f0/1
Router(config-if)#ip address 200.10.10.1 255.255.255.0
Router(config-if)#no shut

Router(config-if)#
%LINK-5-CHANGED: Interface FastEthernet0/1, changed state to up
ex
Router(config)#ex
Router#
%SYS-5-CONFIG_I: Configured from console by console

Router#config terminal
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#interface Eth0/1/0
Router(config-if)#ip address 192.168.30.1 255.255.255.0
Router(config-if)#no shut

Router(config-if)#
%LINK-5-CHANGED: Interface Ethernet0/1/0, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface Ethernet0/1/0, change

Router(config-if)#ex
Router(config)#ip dhcp pool p1
Router(dhcp-config)#network 192.168.30.1 255.255.255.0
Router(dhcp-config)#default-router 192.168.30.1
Router(dhcp-config)#ex
Router(config)#ip dhcp excluded-address 192.168.30.1
Router(config)#hostname R1
R1(config)#
```

- ## ROUTER 2

```
Router>enable
Router#config terminal
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#hostname R2
R2(config)#interface f0/0
R2(config-if)#ip address 100.0.0.2 255.0.0.0
R2(config-if)#no shut

R2(config-if)#
%LINK-5-CHANGED: Interface FastEthernet0/0, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/0, changed state to u

R2(config-if)#ex
R2(config)#interface f0/1
R2(config-if)#ip address 50.0.0.2 255.0.0.0
R2(config-if)#no shut

R2(config-if)#
%LINK-5-CHANGED: Interface FastEthernet0/1, changed state to up

R2(config-if)#ex
R2(config)#interface Eth0/1/0
R2(config-if)#ip address 192.168.20.1 255.255.255.0
R2(config-if)#no shut

R2(config-if)#
%LINK-5-CHANGED: Interface Ethernet0/1/0, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface Ethernet0/1/0, changed state to up

R2(config-if)#ex
R2(config)#ip dhcp pool p2
R2(dhcp-config)#network 192.168.20.1 255.255.255.0
R2(dhcp-config)#default-router 192.168.20.1
R2(dhcp-config)#ex
R2(config)#ip dhcp excluded-address 192.168.20.1
R2(config)#
```

• ROUTER 3

```
Router>enable
Router#config terminal
Enter configuration commands, one per line.  End with CNTL/Z.
Router(config)#hostname R3
R3(config)#interface f0/0
R3(config-if)#ip address 50.0.0.1 255.0.0.0
R3(config-if)#no shut

R3(config-if)#
%LINK-5-CHANGED: Interface FastEthernet0/0, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/0, changed state to up

R3(config-if)#ex
R3(config)#interface f0/1
R3(config-if)#ip address 200.10.10.2 255.255.255.0
R3(config-if)#no shut

R3(config-if)#
%LINK-5-CHANGED: Interface FastEthernet0/1, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/1, changed state to up

R3(config-if)#ex
R3(config)#interface Eth0/1/0
R3(config-if)#ip address 192.168.20.1 255.255.255.0
R3(config-if)#no shut

R3(config-if)#
%LINK-5-CHANGED: Interface Ethernet0/1/0, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface Ethernet0/1/0, changed state to up

R3(config-if)#ex
R3(config)#
```

```
R3>enable
R3#config terminal
Enter configuration commands, one per line.  End with CNTL/Z.
R3(config)#ip dhcp pool p3
R3(dhcp-config)#network 192.168
                            ^
% Invalid input detected at '^' marker.

R3(dhcp-config)#network 192.168.20.1 255.255.255.0
R3(dhcp-config)#default-router 192.168.20.1
R3(dhcp-config)#ex
R3(config)#ip dhcp excluded-address 192.168.20.1
R3(config)#
```

3.   ASSIGNING ROUTES TO ROUTER
- ### ROUTER 1

```
R1>enable
R1#config terminal
Enter configuration commands, one per line.  End with CNTL/Z.
R1(config)#ip route 192.168.10.0 255.255.255.0 100.0.0.2
R1(config)#ip route 50.0.0.0 255.0.0.0 100.0.0.2
R1(config)#ip route 192.168.20.0 255.255.255.0 200.10.10.0
R1(config)#ip route 50.0.0.0 255.0.0.0 200.10.10.2
R1(config)#
```

- # ROUTER 2

```
R2>enable
R2#config terminal
Enter configuration commands, one per line.  End with CNTL/Z.
R2(config)#int f0/1
R2(config-if)#ip address 50.0.0.2 255.0.0.0
R2(config-if)#no shut
```

- # ROUTER 3

```
R3>enable
R3#config terminal
Enter configuration commands, one per line.  End with CNTL/Z.
R3(config)#ip route 192.168.30.0 255.255.255.0 200.10.10.1
R3(config)#ip route 100.0.0.0 255.0.0.0 200.10.10.1
R3(config)#ip route 100.0.0.0 255.0.0.0 50.0.0.2
R3(config)#ip route 192.168.10.0 255.255.255.0 50.0.0.2
R3(config)#
```

4. PACKETS TRAVELLING

Realtime

Fire	Last Status	Source	Destination	Type	Color	Time(sec)	Periodic	Num
●	Successful	Laptop0	R1	ICMP		0.000	N	0
●	Successful	Laptop2	R2	ICMP		0.000	N	1
●	Successful	Laptop1	R3	ICMP		0.000	N	2

5. PC VALUES UPDATED

- # PC 1

IP Configuration

◉ DHCP   ◯ Static

IP Address   192.168.30.2

Subnet Mask   255.255.255.0

Default Gateway   192.168.30.1

DNS Server

- ## PC 2

| Physical | Config | Desktop | Custom Interfa |

IP Configuration

IP Configuration

◉ DHCP   ◯ Static

IP Address   192.168.20.2

Subnet Mask   255.255.255.0

Default Gateway   192.168.20.1

DNS Server

IPv6 Configuration

- ## PC 3

| Physical | Config | Desktop | Custom Interfa |

IP Configuration

IP Configuration

◉ DHCP   ◯ Static

IP Address   192.168.10.2

Subnet Mask   255.255.255.0

Default Gateway   192.168.10.1

DNS Server

IPv6 Configuration

QUESTION 2 ANSWER

There are total 6 networks and we make 3 pools for this senerio

Networks are mentioned below