Pridwimn Jha L029

HOTEL MANAGEMENT NETWORK DESIGN

CSEDS

As a part of your end year networking project, you are required to design and implement Vic Modern Hotel network. The hotel has three floors, in the first floor there are three departments (Reception, store and Logistics), in the second floor there are three departments (Finance, HR and Sales/Marketing), while the third floor hosts the IT and Admin. Therefore, the following are part of the considerations during the design and implementation.

1. There should be three routers connecting each floor (all placed in the server room in the IT department).
2. All routers should be connected to each other using serial DCE cable.
3. The network between the routers should be 10.10.10.0/30,10.10.10.4/30,10.10.10.8/30
4. Each floor is expected to have one switch (placed in the respective floor).
5. Each floor is expected to have WIFI networks connected to laptops and phones.
6. Each department is expected to have a printer.
7. Each department is expected to be in different VLAN with the following details

1ª Floor,
Reception-VLAN 80, Network of 192.168.8.0/24
Store-VLAN 70, Network of 192.168.7.0/24
Logistics- VLAN 60, Network of 192.168.6.0-24

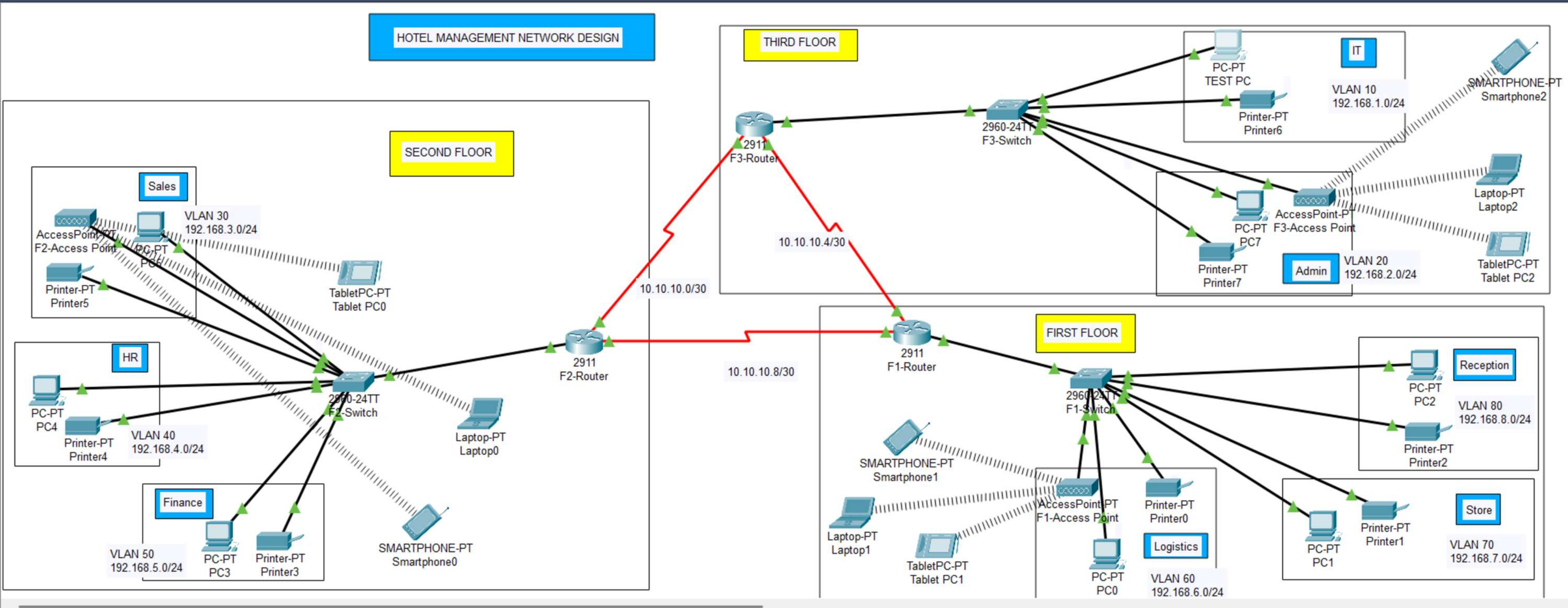
2nd Floor,
Finance- VLAN 50, Network of 192.168.5.0/24
HR-VLAN 40, Network of 192.168.4.0/24
Sales-VLAN 30, Network of 192.168.3.0/24

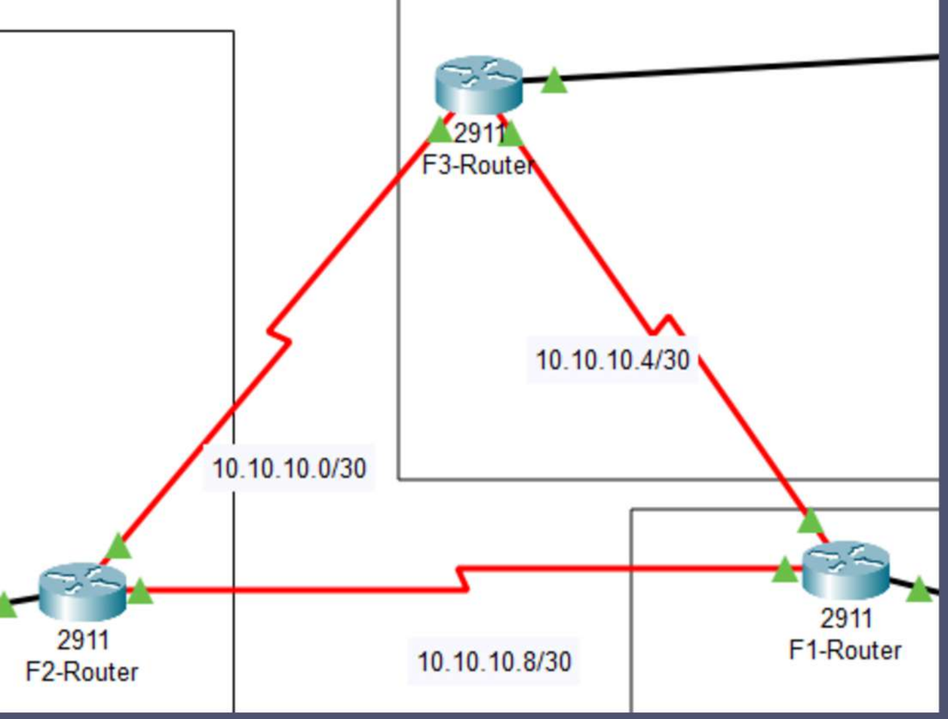
3rd Floor,
Admin- VLAN 20, Network of 192.168.2.0/24
IT-VLAN 10, Network of 192.168.1.0/24

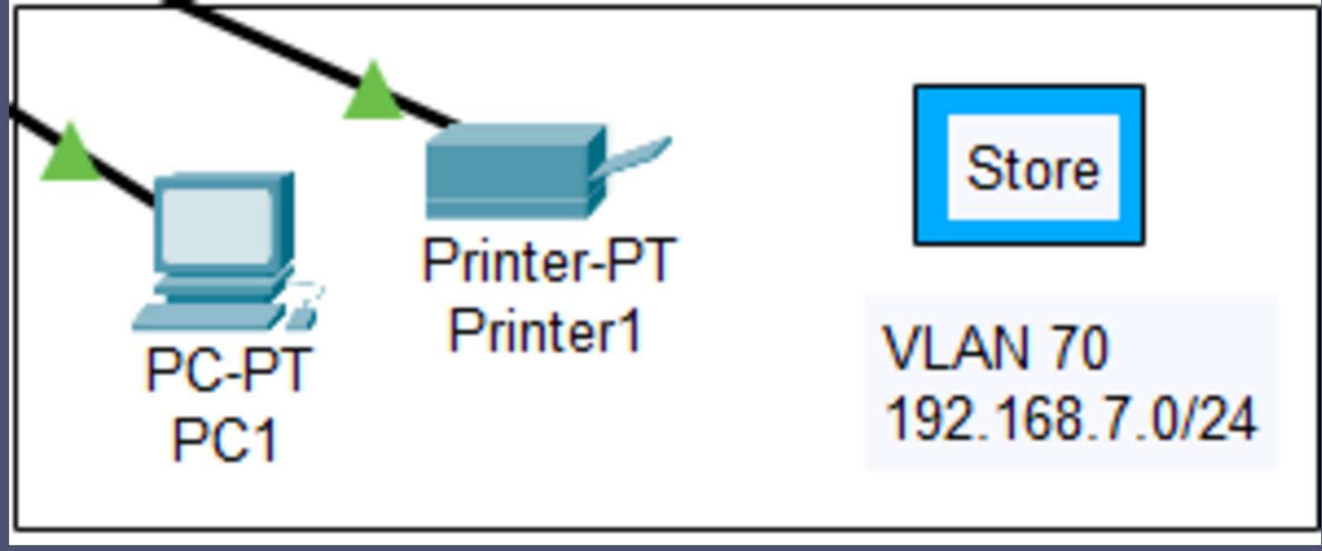
8. Use OSPF as the routing protocol to advertise routes.
9. All devices in the network are expected to obtain IP address dynamically with their respective router configured as the DHCP server.
10. All the devices in the network are expected to communicate with each other.
11. Configure SSH in all the routers for remote login.
12. In the IT department, add a PC called Test-PC to port fa0/1 and use it to test remote login.
13. Configure port security to IT-dept switch to allow only Test-PC to access port fa0/1

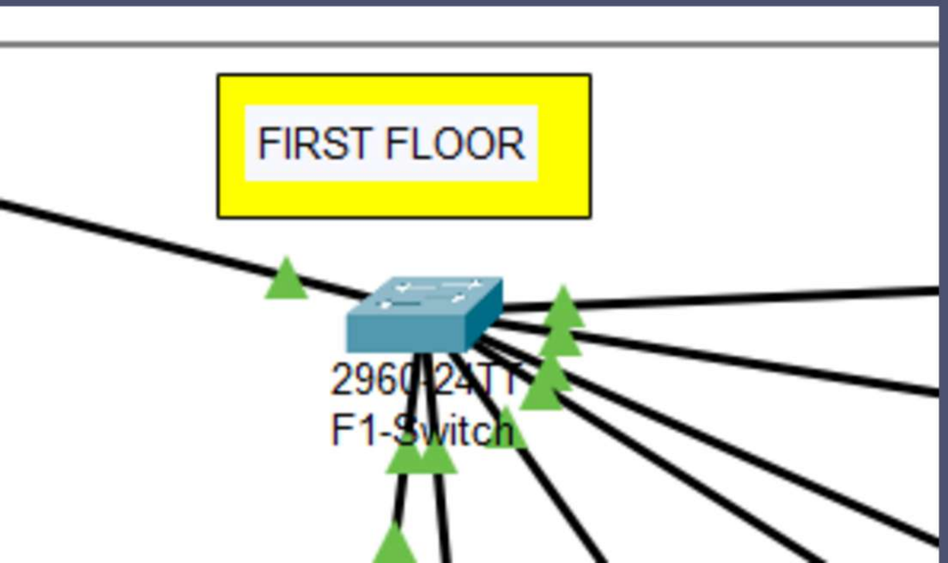
Problem Statement

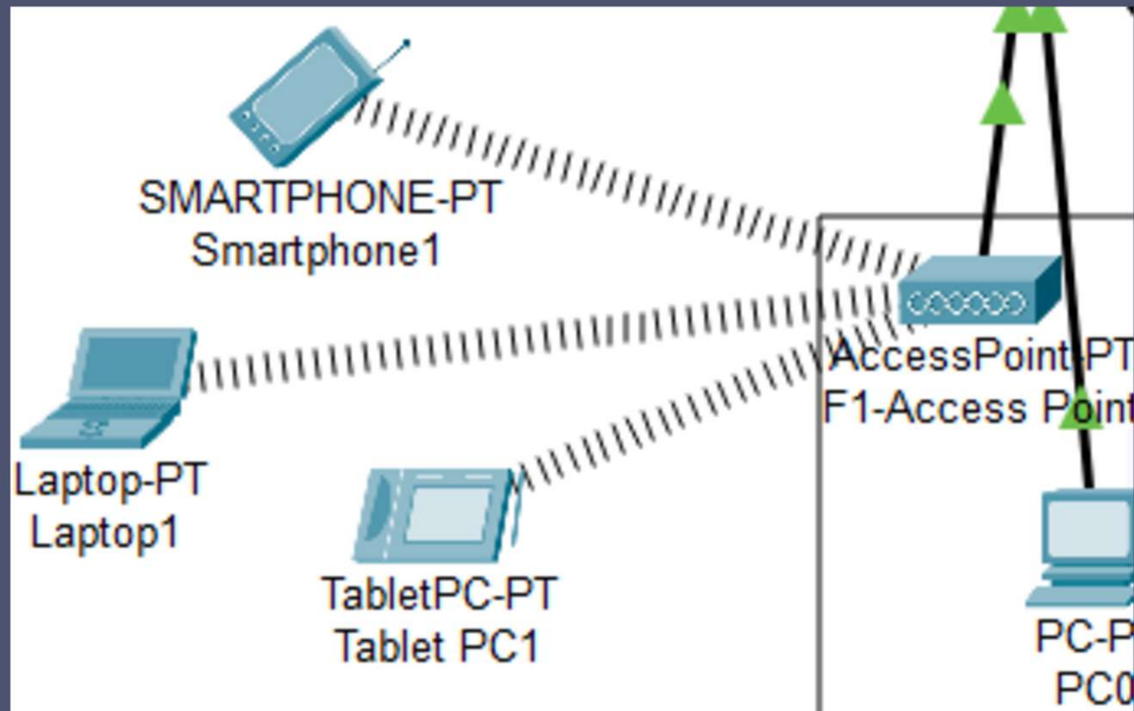
CISCO PACKET TRACER




2911
F3-Router
10.10.10.4/30
10.10.10.0/30
2911
F2-Router
10.10.10.8/30
2911
F1-Router


Store
Printer-PT
Printer1
PC-PT
PC1
VLAN 70
192.168.7.0/24


FIRST FLOOR
2960-24TT
F1-Switch


SMARTPHONE-PT
Smartphone1
Laptop-PT
Laptop1
TabletPC-PT
Tablet PC1
F1-Access Point

F2-Access Point

Physical Config Attributes

GLOBAL
Settings
INTERFACE
Port 0
Port 1

Port 1

Port Status: On
SSID: Floor2
2.4 GHz Channel: 6
Coverage Range (meters): 140.00

Authentication
Disabled WEP
WPA-PSK WPA2-PSK
WEP Key
PSK Pass Phrase: Floor@123
User ID
Password
Encryption Type: AES

Smartphone0

Physical Config Desktop Programming Attributes

GLOBAL
Settings
Algorithm Settings
INTERFACE
Wireless0
3G/4G Cell1
Bluetooth

Wireless0

Port Status
Bandwidth: 18 Mbps
MAC Address: 0000.0CC7.901D
SSID: Floor2

Authentication
Disabled WEP
WPA-PSK WPA2-PSK
WEP Key
PSK Pass Phrase: Floor@123

Tablet PC0

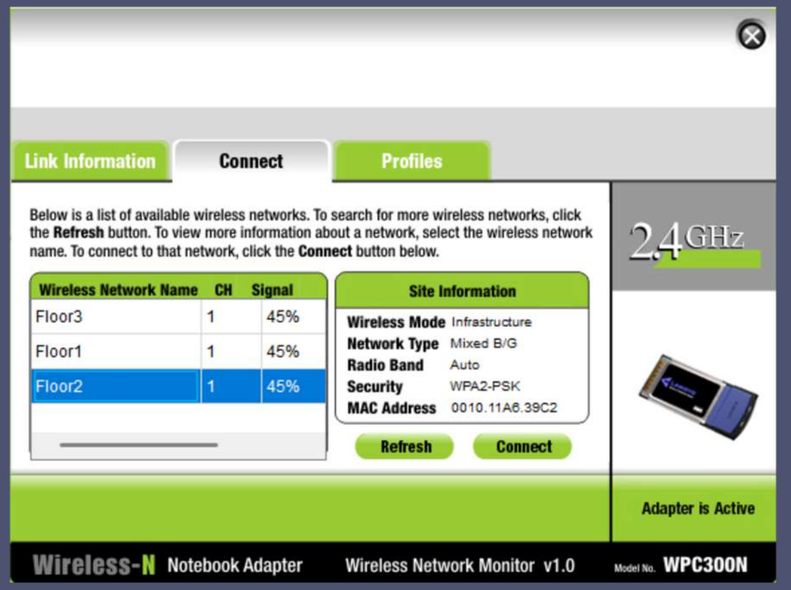
Physical Config Desktop Programming Attributes

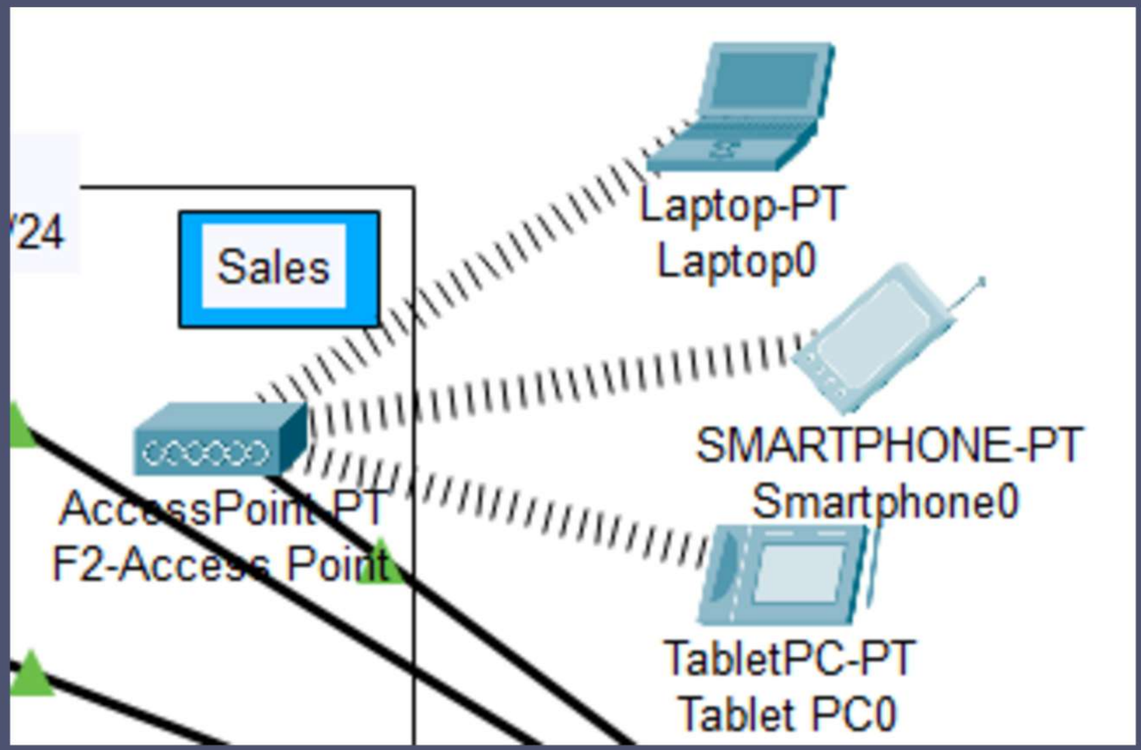
GLOBAL
Settings
Algorithm Settings
INTERFACE
Wireless0
3G/4G Cell1
Bluetooth

Wireless0

Port Status: On
Bandwidth: 18 Mbps
MAC Address: 0060.3E20.DD21
SSID: Floor2

Authentication
Disabled WEP
WPA-PSK WPA2-PSK
WEP Key
PSK Pass Phrase: Floor@123





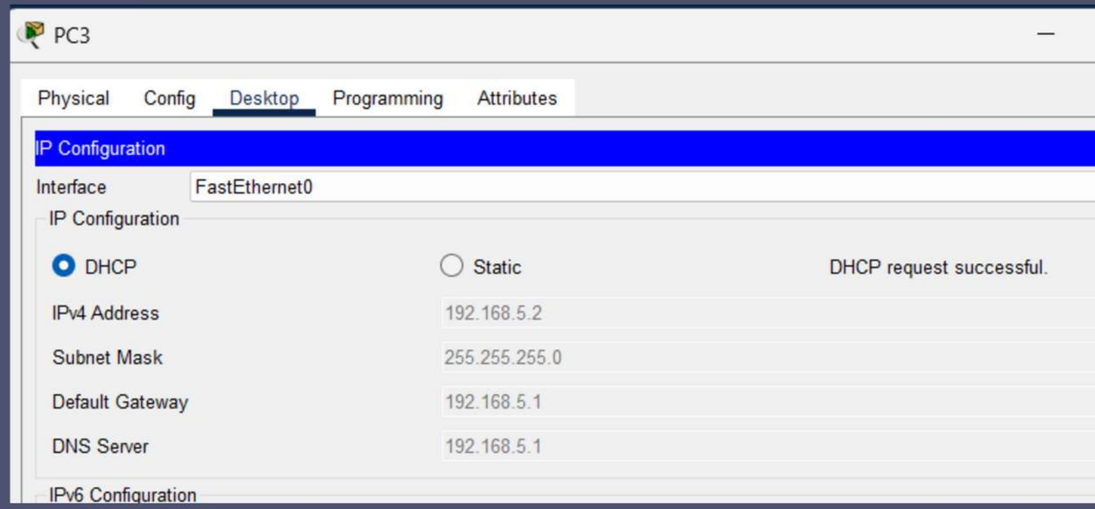
```
Switch(config)#int range fa0/2-3
Switch(config-if-range)#switchport mode access
Switch(config-if-range)#switchport access vlan 10
```

```
Router(config)#int gig0/0.50
Router(config-subif)#
%LINK-5-CHANGED: Interface GigabitEthernet0/0.50, changed st

%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEther

Router(config-subif)#encapsulation dot1Q 50
Router(config-subif)#ip address 192.168.5.1 255.255.255.0
Router(config-subif)#ex
Router(config)#do wr
```

```
Router(config)#service dhcp
Router(config)#ip dhcp pool Finance
Router(dhcp-config)#network 192.168.5.0 255.255.255.0
Router(dhcp-config)#default-router 192.168.5.1
Router(dhcp-config)#dns-server 192.168.5.1
Router(dhcp-config)#ex
Router(config)#ip dhcp pool HR
Router(dhcp-config)#network 192.168.4.0 255.255.255.0
Router(dhcp-config)#default-router 192.168.4.1
Router(dhcp-config)#dns-server 192.168.4.1
Router(dhcp-config)#ex
```



```
Cisco Packet Tracer PC Command Line 1.0
C:\>ping 192.168.2.2

Pinging 192.168.2.2 with 32 bytes of data:

Request timed out.
Reply from 192.168.2.2: bytes=32 time<1ms TTL=127
Reply from 192.168.2.2: bytes=32 time=1ms TTL=127
Reply from 192.168.2.2: bytes=32 time=2ms TTL=127

Ping statistics for 192.168.2.2:
    Packets: Sent = 4, Received = 3, Lost = 1 (25% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 2ms, Average = 1ms

C:\>ping 192.168.6.2

Pinging 192.168.6.2 with 32 bytes of data:

Request timed out.
Reply from 192.168.6.2: bytes=32 time=1ms TTL=126
Reply from 192.168.6.2: bytes=32 time=12ms TTL=126
Reply from 192.168.6.2: bytes=32 time=2ms TTL=126

Ping statistics for 192.168.6.2:
    Packets: Sent = 4, Received = 3, Lost = 1 (25% loss),
Approximate round trip times in milli-seconds:
    Minimum = 1ms, Maximum = 12ms, Average = 5ms

C:\>ping 192.168.3.3

Pinging 192.168.3.3 with 32 bytes of data:

Request timed out.
Reply from 192.168.3.3: bytes=32 time=1ms TTL=126
Reply from 192.168.3.3: bytes=32 time=1ms TTL=126
Reply from 192.168.3.3: bytes=32 time=9ms TTL=126

Ping statistics for 192.168.3.3:
    Packets: Sent = 4, Received = 3, Lost = 1 (25% loss),
Approximate round trip times in milli-seconds:
    Minimum = 1ms, Maximum = 9ms, Average = 3ms
```

Printer5

Physical | Config | Attributes

GLOBAL
Settings
INTERFACE
FastEthernet0

FastEthernet0

Port Status: On
Bandwidth: 100 Mbps / 10 Mbps / Auto
Duplex: Half Duplex / Full Duplex / Auto
MAC Address: 00D0.FFE1.84E0

IP Configuration
DHCP
Static
IPv4 Address: 192.168.3.3
Subnet Mask: 255.255.255.0

```
C:\>ssh -l gtech 10.10.10.1

Password:



F2-Router>
F2-Router>exit
```

```
Router(config)#router ospf 10
Router(config-router)#network 10.10.10.0 255.255.255.252 area 0
Router(config-router)#network 10.10.10.8 255.255.255.252 area 0
Router(config-router)#n
04:19:48: %OSPF-5-ADJCHG: Process 10, Nbr 192.168.8.1 on Serial0
Done

% Ambiguous command: "n"
Router(config-router)#network 192.168.3.0 255.255.255.0 area 0
Router(config-router)#network 192.168.4.0 255.255.255.0 area 0
Router(config-router)#network 192.168.5.0 255.255.255.0 area 0
Router(config-router)#do wr
```

```
Router(config)#hostname F2-Router
F2-Router(config)#ip domain-name gtech
F2-Router(config)#username gtech password gtech
F2-Router(config)#crypto key generate rsa
The name for the keys will be: F2-Router.gtech
Choose the size of the key modulus in the range of 360 to 4096 for your
  General Purpose Keys. Choosing a key modulus greater than 512 may take
  a few minutes.

How many bits in the modulus [512]: 1024
% Generating 1024 bit RSA keys, keys will be non-exportable...[OK]

F2-Router(config)#
*Mar 1 5:9:59.902: %SSH-5-ENABLED: SSH 1.99 has been enabled
F2-Router(config)#line vty 0 15
F2-Router(config-line)#login local
F2-Router(config-line)#transport input ssh
F2-Router(config-line)#do wr
```

THANK YOU

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L029
CSDS-311