Hotel Management Network Design and Implementation

Problem:

You are working for a hotel company in a specific hotel. 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). The third floor hosts the IT and Admin. The Hotel needs you to design a network based on the following specifications.

1. There should be three routers connecting each floor (All placed in the server room located in the IT department)
2. All routers should be connected to each other using a 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 on their respective floor)
5. Each floor is expected to have a wifi network.
6. Each department is expected to have a printer
7. Each department is expected to be in a different VLAN with the following details…

1st 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 addresses 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 fa0/2 (Use sticky method to obtain mac-address with violation mode of shutdown)
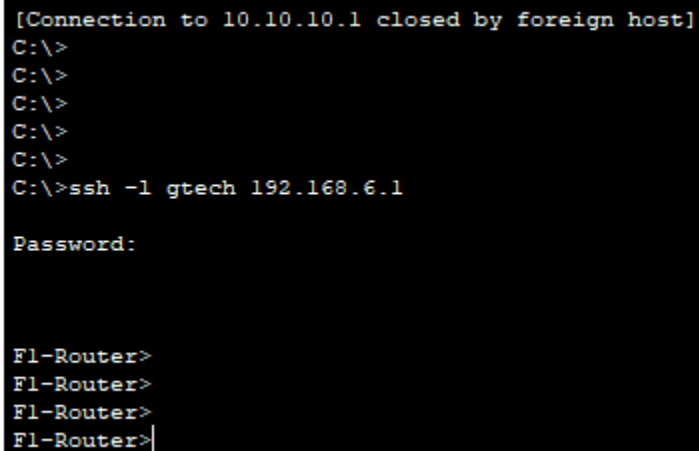
Background work & notes:

F1, F2 and F3 router ssh username = gtech password = getach (Not secure credentials but just for the purpose of this lab)

Example to test SSH F2 router:

ssh -l gtech 10.10.10.1

getach

Image for testing a machine under a router's IP

port security was enabled for the test PC below

```
!
interface FastEthernet0/2
 switchport access vlan 10
 switchport mode access
 switchport port-security
 switchport port-security mac-address sticky
!
```

```
Switch(config-if)#do sh port-security
Secure Port MaxSecureAddr CurrentAddr SecurityViolation Security Action
              (Count)        (Count)        (Count)
----------------------------------------------------------------------
       Fa0/2        1           0               0        Shutdown
----------------------------------------------------------------------
Switch(config-if)#
```

SSH Configuration complete image:

```
!
!
line con 0
!
line aux 0
!
line vty 0 4
 login local
 transport input ssh
line vty 5 15
 login local
 transport input ssh
!
!
!
end
```