**Superior University, Gold Campus**

**Lahore**



**Project**

**Computer Network(Lab)**

**Submitted by :**

**Shaheer Ahmed(203)**

**Section-(5D)**

**Section-(5D)**



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**Project Computer Network(Lab)**

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**Section:**

5D

Github Link: <https://github.com/ranashaheer01/Hotel-Managment-system-project>

**Hotel Management system**

**Description**

**Modern Hotel Network Design**

The Modern Hotel consists of three floors with different departments located as follows:

1. **First Floor:**
   * Reception, Store, and Logistics departments.
2. **Second Floor:**
   * Finance, HR, and Sales departments.
3. **Third Floor:**
   * IT and Admin departments.

**Network Design Requirements:**

1. **Routers and Connections:**
   * Each floor must have **three routers** connected to form the backbone of the network.
   * All routers should interconnect using serial DCE cables to form a fully connected topology.
   * **Router IP Addresses:**
     + Network between routers: Use **10.10.10.0/30**, **10.10.10.4/30**, **10.10.10.8/30**, etc., for point-to-point connections between routers.
2. **Switches and Devices:**
   * Each floor should have **one switch** (located on the respective floor) to connect local devices.
   * Devices, such as laptops and phones, will connect to the network using Wi-Fi access points.
3. **Printers:**
   * Each department should have **one dedicated printer** for use.
4. **VLAN Configuration:** Each department is allocated to a specific VLAN to isolate traffic. Below are the VLAN assignments:

**First Floor:**

* + **Reception:** VLAN 80 (Network: 192.168.8.0/24)
  + **Store:** VLAN 70 (Network: 192.168.7.0/24)
  + **Logistics:** VLAN 60 (Network: 192.168.6.0/24)

**Second Floor:**

* + **Finance:** VLAN 50 (Network: 192.168.5.0/24)
  + **HR:** VLAN 40 (Network: 192.168.4.0/24)
  + **Sales:** VLAN 30 (Network: 192.168.3.0/24)

**Third Floor:**

* + **Admin:** VLAN 20 (Network: 192.168.2.0/24)
  + **IT:** VLAN 10 (Network: 192.168.1.0/24)

**Routing Protocol:**

* Use **OSPF (Open Shortest Path First)** as the routing protocol to enable communication between the VLANs across routers.

**IP Address Allocation:**

* Configure DHCP on the routers to dynamically assign IP addresses to devices within each department’s VLAN subnet.

**Security Considerations:**

1. Enable **SSH (Secure Shell)** for all routers to allow secure remote login.
2. In the **IT department**, configure a test PC:
   * Add a PC named **Test-PC** and connect it to port **Fa0/1** on the switch for testing purposes.
   * Use this PC to conduct remote testing.
3. Apply **port security** on the IT department’s switch:
   * Configure the switch to allow only **Test-PC** to connect via port **Fa0/1**.
   * Use **sticky MAC addresses** for this configuration, and set the violation mode to shutdown if unauthorized devices are detected.





















  
