**Lab Task 10**

**Computer Networks (Lab)**



**Submitted to Mr. Rasikh Ali  
Submitted by M.Naqeeb**

**Roll #: SU92-BSSEM-F22-100  
Section: SE-5B**

**Submitted on Sep 20, 2024**

**DEPARTMENT OF SOFTWARE ENGINEERING  
SUPERIOR UNIVERSITY, LAHORE**

# Question 1

**Research about Topics for Project and submit a deliverables document having:**

**• Organization Name**

**• Number of Floors of the Organization**

**• Number of PC / Server in the system**

**1. Organization Name**

**Tech Haven Corp**

**2. Number of Floors in the Organization**

* **Four Floors**:
  + Ground Floor: Reception, Helpdesk Support
  + 1st Floor: Administration and HR
  + 2nd Floor: Development and IT Team
  + 3rd Floor: Data Center and Backup Operations

**3. Number of PCs/Servers in the System**

* **Total PCs**: 120
  + Reception: 5
  + HR & Administration: 35
  + Development: 50
  + IT Team: 20
  + Miscellaneous (Meeting Rooms, Shared Spaces): 10
* **Servers**: 10
  + Main Servers: 5
  + Backup Servers: 3
  + Development Environments: 2

**4. IT Infrastructure Overview**

* **Networking Equipment**:
  + Layer 3 Cisco switches and routers on each floor.
  + VLANs to segregate HR, development, and admin traffic.
* **Wireless Access Points**:
  + Cisco WAPs for secure and seamless connectivity across the building.
* **Centralized Storage**:
  + NAS systems for shared departmental files.
* **Security**:
  + Firewalls and endpoint protection on all devices.
  + Active monitoring via a Network Security Operations Center (NSOC).

**5. Project Goals**

* Develop a scalable network for seamless internal and external communication.
* Enhance cybersecurity and data integrity.
* Enable efficient resource allocation and high productivity.

**6. Justification for Infrastructure Design**

* **Flexibility and Scalability**: VLANs and robust server allocation support future growth.
* **Efficiency**: Centralized servers ensure consistent data access.
* **Resilience**: Backup servers and a disaster recovery plan protect against outages.

**7. Example Project: Small Business IT Setup**

A business with a similar setup (scaled-down):

* 50 PCs, including desktops and laptops.
* 5 servers for applications, email, and data storage.
* Single-story setup with routers and VLAN-enabled switche