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**DEPARTMENT OF SOFTWARE ENGINEERING**

**SUPERIOR UNIVERSITY LAHORE (GOLD CAMPUS)**

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**Subject: Computer Network LAB**

# Campus Network Project Report

# 1. Introduction

This report provides an overview of the campus network topology as represented in the attached diagram. The network is designed to connect multiple departments across three buildings (A, B, and C) and a branch campus network. It is configured with VLANs for efficient segmentation and traffic management.

# 2. Network Components

The campus network includes the following components:  
**1. Routers:** Main Campus Router and Branch Campus Router, connecting the campus network to external networks.  
**2. Switches:** A mix of layer 2 and layer 3 switches for internal traffic management and VLAN configuration.  
**3. End Devices:** Computers, printers, web servers, FTP servers, and email servers, which provide services and resources.  
**4. Cloud Connection:** A connection to external networks via the Main Campus Router.

# 3. VLAN Configuration

The network is divided into VLANs, each representing a specific department or functional area. Each VLAN is assigned a unique ID and subnet to ensure proper segmentation and security. Below are the VLAN details:  
**- VLAN 10 (Admin):** 192.168.1.0/24  
**- VLAN 20 (HR):** 192.168.2.0/24  
**- VLAN 30 (Finance):** 192.168.3.0/24  
**- VLAN 40 (Business):** 192.168.4.0/24  
**- VLAN 50 (Engineering and Computing):** 192.168.5.0/24  
**- VLAN 60 (Art & Design):** 192.168.6.0/24  
**- VLAN 70 (Student Lab):** 192.168.7.0/24  
**- VLAN 80 (IT Department):** 192.168.8.0/24  
**- VLAN 90 (Staff):** 192.168.9.0/24  
**- VLAN 100 (Student Lab):** 192.168.10.0/24

# 4. Interconnectivity

The network is structured to facilitate communication between different buildings and the branch campus. The Main Campus Router serves as the central hub, connecting to:  
- Building A: (Admin, HR, Finance, Business)  
- Building B: (Engineering, Art & Design, Student Lab)  
- Building C: (IT Department)  
- Superior Branch Campus Network (via Branch Campus Router)

# 5. Conclusion

This network design ensures efficient communication and resource sharing among departments while maintaining segmentation through VLANs. It provides a scalable and secure infrastructure that can be expanded in the future.