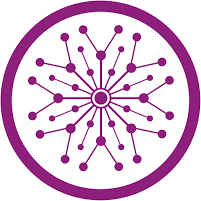
**Subject Name:**

**Computer Networks (Theory)**



**Submitted To:** Sir Rasikh

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# Section: 5B

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# DEPARTMENT OF SOFTWARE ENGINEERING

**SUPERIOR UNIVERSITY, LAHORE**

**Difference Between VLAN and Inter-VLAN Routing**

**VLAN (Virtual Local Area Network):**

VLAN is used to segment a network into multiple logical networks within the same physical infrastructure.

Devices in the same VLAN can communicate directly with each other without routing.

VLANs improve network management, enhance security, and reduce broadcast domains.

**Example:**  
A company has two VLANs:

**VLAN 10**: For the IT department (e.g., PCs A and B).

**VLAN 20**: For the HR department (e.g., PCs C and D).  
Devices in VLAN 10 can communicate only with other devices in VLAN 10, and the same applies to VLAN 20.

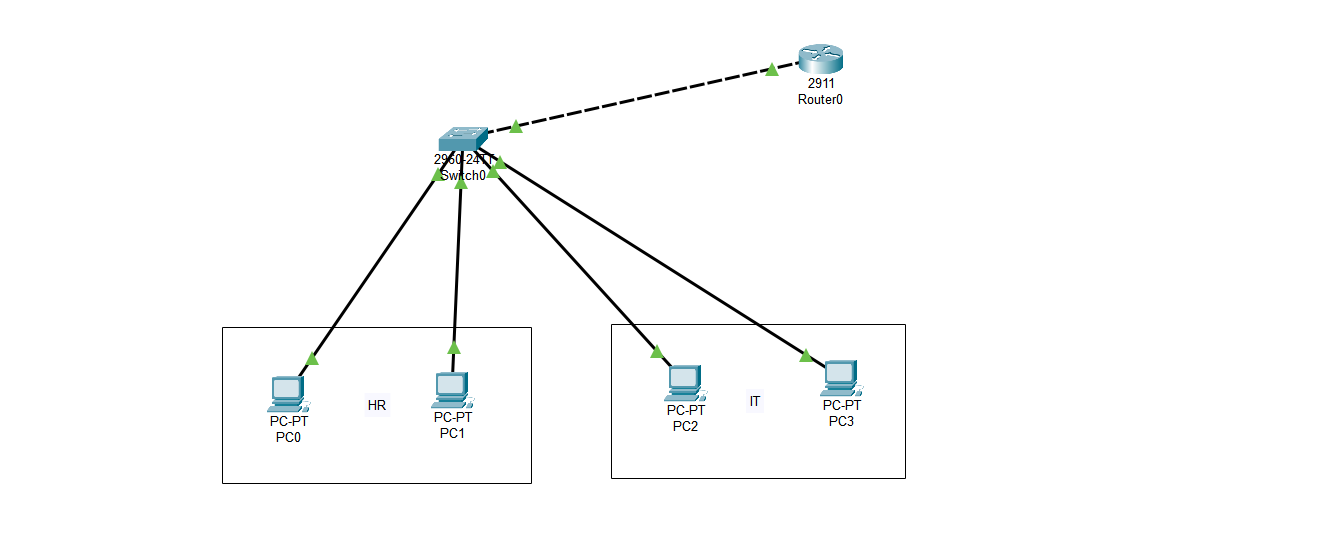
**Inter-VLAN Routing:**

Inter-VLAN Routing allows communication between devices in different VLANs.

Requires a Layer 3 device (e.g., a router or Layer 3 switch) to route traffic between VLANs.

Each VLAN is assigned a unique subnet, and the router serves as the gateway for devices in each VLAN.

**Example:**  
A user in **VLAN 10 (IT)** wants to access a printer in **VLAN 20 (HR)**. Inter-VLAN routing enables this communication through the router.

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