**Task 12**

**Computer Networks (Lab)**



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# Difference between VLAN and Inter-VLAN Routing

VLAN segments a network into separate broadcast domains, operating at Layer 2 (Data Link), allowing devices within the same VLAN to communicate directly. Inter-VLAN Routing, on the other hand, works at Layer 3 (Network) and enables communication between different VLANs, requiring a router or Layer 3 switch. While VLANs isolate traffic within a single subnet, Inter-VLAN Routing bridges those subnets, allowing devices from different VLANs (like HR and Sales) to communicate through routing. Essentially, VLANs keep things internal, while Inter-VLAN Routing connects them.

|  | **VLAN** | **Inter-VLAN Routing** |
| --- | --- | --- |
| **Purpose** | Segments network into broadcast domains | Enables communication between VLANs |
| **Layer** | Layer 2 (Data Link) | Layer 3 (Network) |
| **Devices in Same VLAN** | Communicate directly | Need routing to communicate |
| **Communication** | Internal to a VLAN | Between different VLANs |
| **Required Device** | Switch (Layer 2) | Router or Layer 3 Switch |
| **Example** | HR, Sales, IT on separate VLANs | HR (VLAN 10) to Sales (VLAN 20) via router |





