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## COMP 311 Computer Networks

*Lab 01 – Understanding of Networks Topologies and Networking Devices*

**Learning Objectives:**

Students are expected to be familiar with the network topologies and their characteristics, networking devices with their specific role in forming a network/Internet after completing this lab.

**Evaluation:**

Students will be asked questions for their understanding about basic network components and configuration.

**Task:**

1. Take a look at the computer networks around you and determine their topology. Afterwards, briefly describe the characteristics of the topology you observe.

**Ans. For instance, I have connected my computer with an ethernet cable, then it will be considered as Bus topology. Another example can be our computer lab. All the computers are connected via a start topology which means that there is a hub/switch in which all computers are connected and can communicate with each other. Last example can be, an IT department in a company. All computers can be connected with multiple cables and those cables can join into a hub/switch; this is an example of hybrid topology.**

1. Provide real-world examples for each of the major network topologies.

**Ans. A banking system or military system needs a type of connection where downtime is minimum, this can be achieved through mesh network and it’s an example of mesh topology.**

**A cable TV network is an example of a ring topology.**

1. Create a list of commonly used networking devices and briefly explain their respective purposes.

**Ans. Some commonly used networking devices are:**

* **Router: is used to connect multiple networks**
* **Network Access Point: An access point provides wireless connectivity to devices on a network, creating a WLAN and allowing devices to connect without cables.**
* **Firewall: A firewall controls incoming and outgoing network traffic, blocking unauthorized access and protecting the network from external threats.**