# SPECIAL PROGRAM IN TECHNICAL VOCATIONAL EDUCATION (SPTVE)
# COMPUTER SYSTEMS SERVICING 9 Q3-W4

**I. Topic: Network Topology**

**II. Objectives:**

1. distinguish the different kinds of network topology;
2. explain the differences of each topology and;
3. determine the function of each network topology.

**III. Brief Introduction of the Lesson**

## What Is Network Topology?

Network topology refers to how various nodes, devices, and connections on your network are physically or logically arranged in relation to each other.

There are two approaches to network topology: physical and logical. Physical network topology, as the name suggests, refers to the physical connections and interconnections between nodes and the network—the wires, cables, and so forth. Logical network topology is a little more abstract and strategic, referring to the conceptual understanding of how and why the network is arranged the way it is, and how data moves through it.

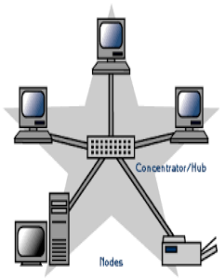
### Why Is Network Topology Important?

The design and structure of a network are usually shown and manipulated in a software-created network topology diagram. These diagrams are essential for a few reasons, but especially for how they can provide visual representations of both physical and logical layouts, allowing administrators to see the connections between devices when troubleshooting.

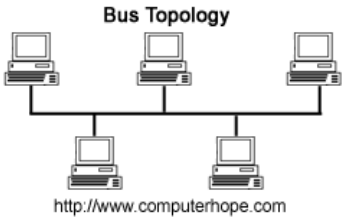
1. **Physical** – The physical network topology refers to the actual connections (wires, cables, etc.) of how the network is arranged. Setup, maintenance, and provisioning tasks require insight into the physical network.
2. **Logical** – The logical network topology is a higher-level *idea* of how the network is set up, including which nodes connect to each other and in which ways, as well as how data is transmitted through the network. Logical network topology includes any virtual and cloud resources.

### What Is Star Topology?

A star topology, the most common network topology, is laid out so every node in the network is directly connected to one central hub via coaxial, twisted-pair, or fiber-optic cable.

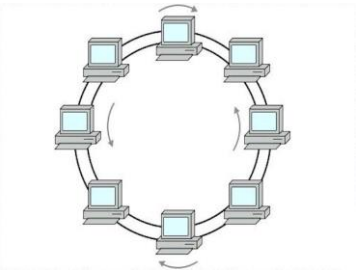


**What Is Bus Topology?**



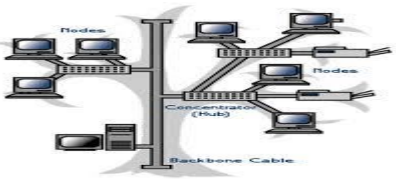

A bus topology orients all the devices on a network along a single cable running in a single direction from one end of the network to the other—which is why it's sometimes called a "line topology" or "backbone topology." Data flow on the network also follows the route of the cable, moving in one direction.

**What Is Ring Topology?**



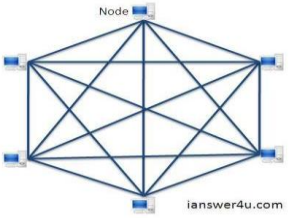
Ring topology is where nodes are arranged in a circle (or ring). The data can travel through the ring network in either one direction or both directions, with each device having exactly two neighbors

**What Is Tree Topology?**



The tree topology structure gets its name from how the central node functions as a sort of trunk for the network, with nodes extending outward in a branch-like fashion. However, where each node in a star topology is directly connected to the central hub, a tree topology has a parent-child hierarchy to how the nodes are connected.

**What Is Mesh Topology?**




A mesh topology is an intricate and elaborate structure of point-to-point connections where the nodes are interconnected. Mesh networks can be full or partial mesh. Partial mesh topologies are mostly interconnected, with a few nodes with only two or three connections, while full-mesh topologies are—surprise!—fully interconnected.

## IV. Activities:

**Activity 1**

Directions: Make a sketch of your own choice of topology and color it. Put the finished project in your portfolio.

**Things You'll Need**

- Short bond paper
- Pencil
- Coloring materials

**Scoring Guide**

| Criteria | % | YOUR SCORE |
|---|---|---|
| creativity | 50 | |
| neatness | 25 | |
| attractiveness | 25 | |
| **TOTAL** | | |

## Activity 2

*Materials to be needed:*
1.Collect a picture of computer set.
2.Cut it out ant set aside.
3.Prepare a yarn or string.
4.Get a tape or paste.
5.Get any cardboard or sturdy board.
6.Get a scissor.

**Directions:** Make any network topology design you want to build or design the network diagram for your school or organization. Collect all cut out of computer sets and paste it a cardboard. Then connect it using the strings. Put the title of topology above your work.

**Scoring Guide**

| Criteria | % | YOUR SCORE |
|---|---|---|
| creativity | 50 | |
| neatness | 20 | |
| attractiveness | 20 | |
| originality | 10 | |
| **TOTAL** | | |

## Activity 3

Give the function of the following network topologies.

1. Mesh Topology _____

2. Star Topology _____

3. Bus Topology _____

4. Tree Topology _____

5. Ring Topology _____

**V. Assessment:**

Directions: Encircle only the letter of the correct answer.

1. Which one is NOT network topology?
   A.BUS B.WAN C.RING D.STAR

2. Which of the following network topologies contains a backbone which runs the length of the network?
   A. Star B. Tree C. Bus D. Ring

3. What piece of hardware is usually at the center of a star network?
   A. Modem B. Hub C. Router D. Server

4. If a computer in a star network fails, the network will:
   A. Still work un affected C. Cease to function
   B. Work with limited capabilities D. None of the above

5. A combination of the bus and star topologies is called a:
   A. Combo network C. Tree network
   B. Starbus network D. Ring network

**VI. Reflection:**

What is the importance of having a topology in the network?

What is the difference of physical topology and logical topology?

References:
1. https://www.dnsstuff.com/what-is-network-topology#why-is-network-topology-important
Date retrieved: January 6, 2021
2. https://quizizz.com/admin/quiz/57847d8da30a491f6bab66bd/network-topology
Date retrieved: January 6, 2021

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