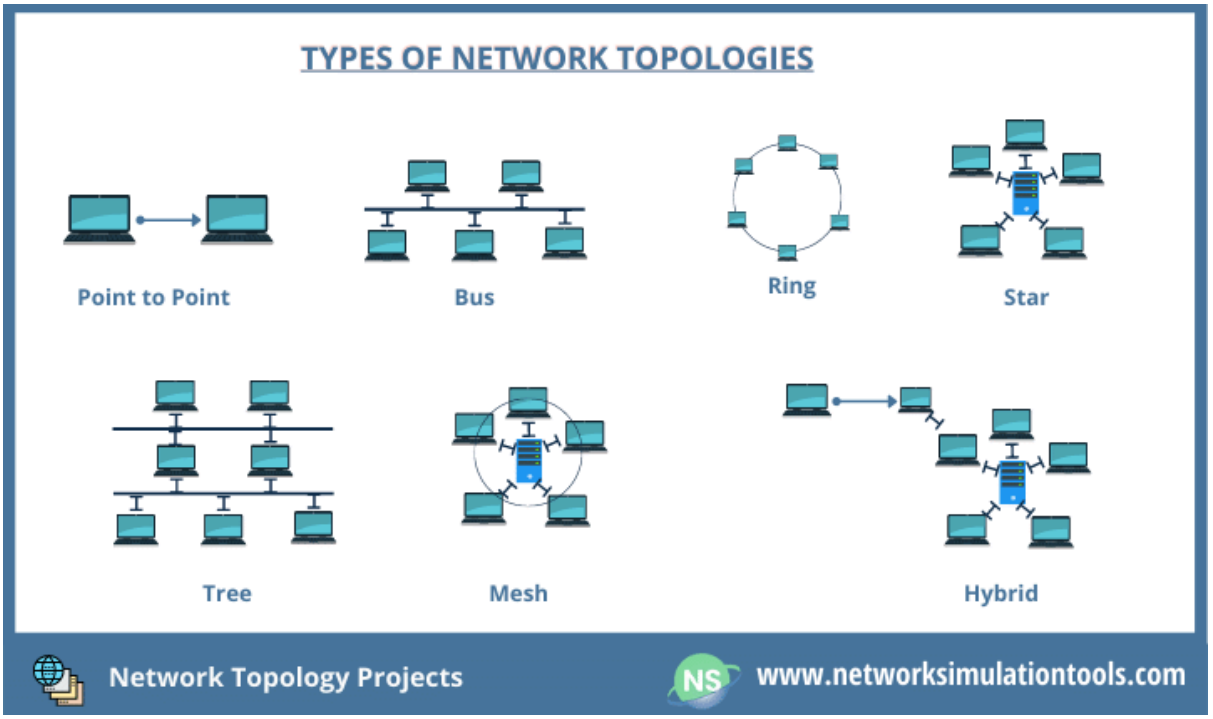
My name is; Samuel wiranata

Google Docs
Google Docs is an online word processing application developed by Google 🌐. The history of Google Docs started in 2006 when Google acquired an online word processing company called WysiWyng 🌎. In 2007, Google launched Google Docs & Spreadsheets, which later became Google Docs 🔄. Initially, Google Docs was only available in beta version 🌟. In 2009, Google Docs was officially released and became one of the most popular online word processing applications 🌈. Google Docs allows users to create, edit, and share documents online 📊.



In computer networking, topology refers to the arrangement of nodes (devices) and connections (links) within a network, which dictates how data flows. The goals of network topology involve optimizing performance, reliability, scalability, and security while managing costs and simplifying management.

1. What is Topology

Network topology is the structural layout of a network and its components. It has two main aspects:

- Physical Topology: The actual geometric layout of the hardware, cables, and other physical components of the network.
- Logical Topology: The way data signals travel through the network, regardless of the physical arrangement of the devices. The logical flow of data may be different from the physical connections (e.g., a network physically arranged in a star might operate logically as a bus).

2. What is the Goal of Topology

The primary goals of designing a specific network topology are to:

- Optimize Network Performance: Ensure efficient data transmission, faster data transfer rates, and minimal bottlenecks and latency.
- Ensure Reliability and Fault Tolerance: Design the network to be resilient to failures. Some topologies (like mesh) offer redundant paths so that if one link or node fails, data can be rerouted.
- Enhance Scalability: Allow the network to easily accommodate new devices or expand to new locations with minimal disruption to existing operations.
- Improve Security and Management: A well-structured topology makes it easier to implement security measures, monitor network traffic, locate faults, and troubleshoot issues.
- Manage Cost-Effectiveness: Balance the initial implementation costs (cabling, hardware) with long-term operational expenses and the costs associated with potential downtime.

3. What are the Types of Topology

The main types of network topologies are:

- Bus Topology: All devices are connected to a single, shared central cable called a backbone or bus. Data travels in both directions, and terminators are used at both ends.
- Ring Topology: Each device is connected to exactly two other devices, forming a circular path. Data typically flows in a single direction around the ring.
- Star Topology: All devices are individually connected to a central hub, switch, or router. This is the most common topology in modern Local Area Networks (LANs).
- Mesh Topology: Each device is interconnected with multiple, often every, other device, creating numerous redundant paths for data transmission. This configuration offers high reliability and fault tolerance but is expensive and complex to implement.
- Tree Topology: Also known as a hierarchical topology, it combines elements of bus and star topologies. A central root node (hub) connects to multiple secondary hubs, which in turn connect to end-user devices, forming a branching structure.
- Hybrid Topology: A combination of two or more different standard topologies to meet specific network requirements. The internet is a prime example of a vast hybrid topology.
- Point-to-Point (P2P) Topology: The simplest form, consisting of a dedicated, direct link between two nodes.