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SUBJECT: WEB ASSIGNMENT (I)

Answer no:1

What is network topology?

Network topology is the description of the arrangement of nodes (e.g. networking switches and routers) and connections in a network, often represented as a graph.

No matter how identical two organizations are, no two networks are exactly alike. However, many organizations are relying on well-established network topology models. Network topologies outline how devices are connected together and how data is transmitted from one node to another.

A **logical network topology** is a conceptual representation of how devices operate at particular layers of abstraction. A **physical topology** details how devices are physically connected. Logical and physical topologies can both be represented as visual diagrams.

A **network topology map** is a map that allows an administrator to see the **physical network layout of connected devices**. Having the map of a network's topology on hand is very useful for understanding how devices connect to each other and the best techniques for troubleshooting.

Types of network topology

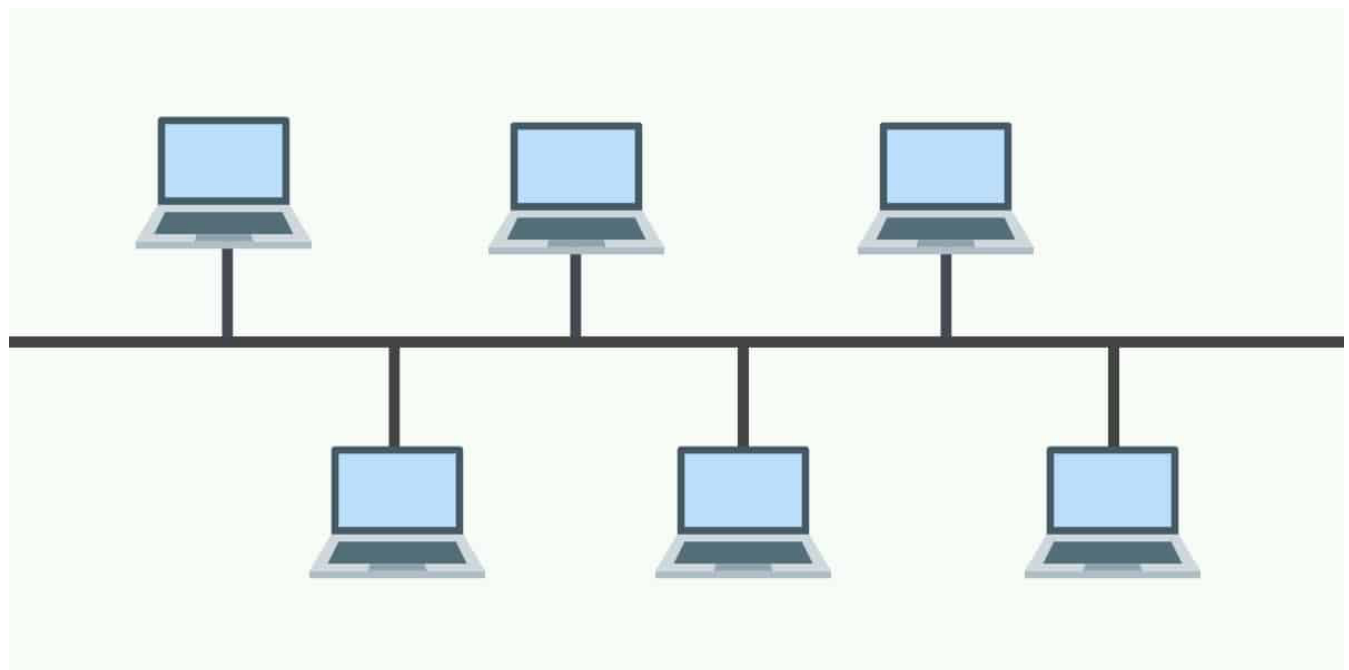


There are many different types of topologies that enterprise networks have built on today and in the past. Some of the network topologies we're going to look at include **bus topology**, **ring topology**, **star topology**, **mesh topology**, and **hybrid topology**.

What are the types of network topology?

- **Bus Topology** Simple layout and cheap but vulnerable to failure and only suitable for low traffic volumes. Not used for office networks today, but can still be found within some consumer products.
- **Ring Topology** Easy to manage and with a low risk of collision but reliant on all nodes being powered up and in full working order. Rarely used today.
- **Star Topology** All devices are connected to a central switch, which makes it easy to add new nodes without rebooting all currently connected devices. This topology makes efficient use of cable and is easy to administer. On the other hand, the health of the switch is vital. This topology requires monitoring and maintenance. However, it is a commonly encountered topology.

Bus Topology



Bus Topology Diagram

Bus topology is a network type where every device is connected to a single cable that runs from one end of the network to the other. This type of network topology is often referred to as **line topology**. In a bus topology, data is transmitted in one direction only. If the bus topology has two endpoints then it is referred to as a **linear bus topology**.

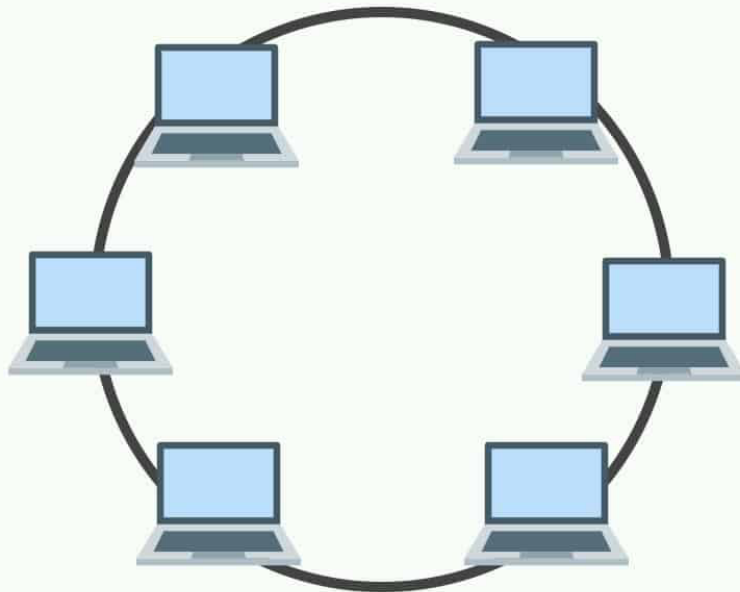
Smaller networks with this type of topology use a coaxial or RJ45 cable to link devices together. However, the bus topology layout is outdated and you're unlikely to encounter a company using a bus topology today.

Advantages

Bus topologies were often used in smaller networks. One of the main reasons is that they **keep the layout simple**. All devices are connected to a single cable so you don't need to manage a complex topological setup.

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Ring Topology Easy to manage and with a low risk of collision but reliant on all nodes being powered up and in full working order. Rarely used today.



Advantages

With ring topologies, the **risk of packet collisions is very low** due to the use of token-based protocols, which only allow one station to transmit data at a given time. This is compounded by the fact that **data can move**

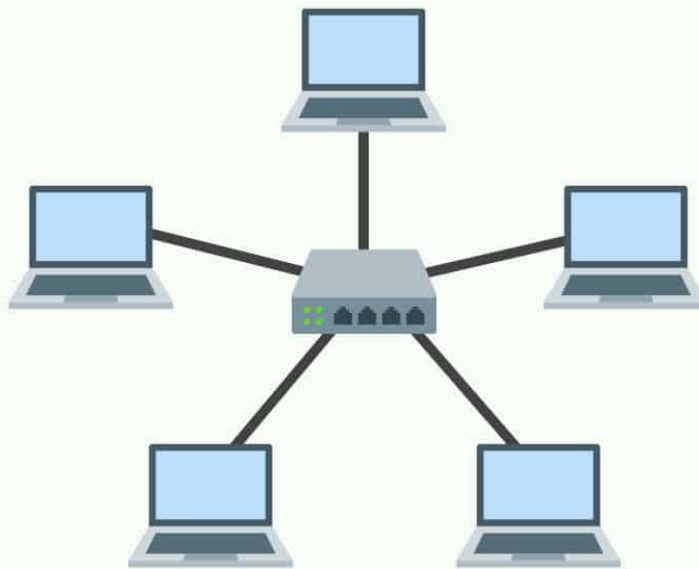


through network nodes at high speeds which can be expanded on when more nodes are added.

Dual ring topologies provided an extra layer of protection because they were **more resistant to failures**. For instance, if a ring goes down within a node then the other ring can step up and back it up. Ring topologies were also **low cost to install**

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Star Topology All devices are connected to a central switch, which makes it easy to add new nodes without rebooting all currently connected devices. This topology makes efficient use of cable and is easy to administer. On the other hand, the health of the switch is vital. This topology requires monitoring and maintenance. However, it is a commonly encountered topology



Advantages

Star topologies are most commonly-used because you **can manage the entire network from one location**: the central switch. As a consequence, if a node that isn't the central node goes down then the network will remain up. This gives star topologies a layer of protection against failures that aren't always present with other topology setups. Likewise, you **can add new computers without having to take the network offline** like you would have to do with a ring topology.

Answer no:-2

CHARACTERISTICS OF HTTP

1. It is the protocol that allows web server browsers to exchange data over the web .
2. It is a request response protocol.
3. It uses the reliable TCP connections by default

Differences between HTTP and HTTPS

- HTTP stands for HyperText Transfer Protocol and HTTPS stands for HyperText Transfer Protocol Secure.
- In HTTP, URL begins with "http://" whereas URL starts with "https://"
- HTTP uses port number 80 for communication and HTTPS uses 443
- HTTP is considered to be insecure and HTTPS is secure
- HTTP Works at Application Layer and HTTPS works at Transport Layer
- In HTTP, Encryption is absent and Encryption is present in HTTPS as discussed above
- HTTP does not require any certificates and HTTPS needs SSL Certificates
- HTTP speed is faster than HTTPS and HTTPS speed is slower than HTTP
- HTTP does not improve search ranking while HTTPS improves search ranking.

Answer no :- 3

Client-server architecture

Architecture of a computer network in which many [clients](#) (remote processors) request and receive service from a centralized [server](#) (host computer). Client computers provide an interface to allow a computer user to request services of the server and to display the results the server returns. Servers wait for requests to arrive from clients and then respond to them

