

ASSIGNMENT 2

1. There are several types of computer networks, including:
 - **Local Area Network (LAN):** A network that connects devices within a limited area, such as a home, office, or school.
 - **Wide Area Network (WAN):** A network that connects devices over a large geographic area, such as a city, country, or even the world.
 - **Metropolitan Area Network (MAN):** A network that connects devices within a metropolitan area, such as a city or town.
 - **Wireless Local Area Network (WLAN):** A type of LAN that uses wireless technology to connect devices.
 - **Storage Area Network (SAN):** A network that provides access to storage devices, such as hard drives and tape drives.
 - **Virtual Private Network (VPN):** A network that provides secure access to a private network over the public internet.
2. Shielded twisted pair (STP) and unshielded twisted pair (UTP) are two types of copper cabling used in computer networks. STP has a metal shield around each pair of wires to reduce electromagnetic interference, while UTP does not have a shield. STP is more expensive and difficult to install than UTP, but it provides better performance in noisy environments.
3. Baseband transmission is a method of transmitting digital signals over a single channel without modulation. Broadband transmission is a method of transmitting analog signals over multiple channels using modulation. The main difference between the two is that baseband transmission uses the entire bandwidth of the channel for a single signal, while broadband transmission divides the bandwidth into multiple channels for multiple signals.
4. A hub is a device that connects multiple devices together in a network. A modem is a device that connects a computer or other device to the internet. A router is a device that connects multiple networks together and routes data between them. A switch is a device that connects multiple devices together in a network and routes data between them based on their MAC addresses.
5. When you move the NIC cards from one PC to another PC, the MAC address does not get transferred with it. The MAC address is tied to the NIC card itself and not the computer it is installed in.
6. Common hardware-related problems when troubleshooting computer network problems include faulty cables or connectors, malfunctioning network interface cards (NICs), defective routers or switches, and damaged power supplies or cooling fans.
7. The best place to install an anti-virus program in a network that contains two servers and twenty workstations would be on each individual workstation. This will help protect each workstation from viruses and malware that could be introduced through email attachments, downloads, or other means.

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8. A static IP address is an IP address that is manually assigned to a device and does not change over time. A dynamic IP address is an IP address that is automatically assigned to a device by a DHCP server and can change over time. IPv4 uses 32-bit addresses and can support up to 4.3 billion unique addresses, while IPv6 uses 128-bit addresses and can support up to 340 undecillion unique addresses.
9. The TCP/IP model is a protocol stack used for communication over the internet. It consists of four layers: the application layer, transport layer, internet layer, and link layer. The application layer includes protocols such as HTTP and FTP for accessing web pages and transferring files. The transport layer includes protocols such as TCP and UDP for reliable and unreliable data transfer between applications. The internet layer includes the IP protocol for routing data between networks. The link layer includes protocols such as Ethernet for transmitting data between devices on the same network.
10. A web browser (or browser) is an application used to access information on the World Wide Web (WWW). Some examples of popular web browsers include Google Chrome, Mozilla Firefox, Microsoft Edge, Apple Safari, and Opera.
11. A search engine is an application used to search for information on the internet based on keywords or phrases entered by the user. Some examples of popular search engines include Google Search, Bing Search, Yahoo Search, and DuckDuckGo.
12. The Internet is a global network of interconnected computers and servers that communicate with each other using standardized protocols such as TCP/IP. The World Wide Web (WWW) is an information system on the internet that allows users to access multimedia content such as text, images, audio, and video through web pages using web browsers. The internet has many uses in our daily lives, including communication (email, social media), entertainment (streaming music and video), education (online courses), shopping (e-commerce), and research (search engines).
13. An Internet Service Provider (ISP) is a company that provides internet access to customers through wired or wireless connections. Some examples of ISPs in India include Bharti Airtel Limited, Reliance Jio Infocomm Limited, Vodafone Idea Limited, Tata Communications Limited, and BSNL.
14. A MAC address is a unique identifier assigned to each network interface card (NIC) by its manufacturer. An IP address is an identifier