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شبكات الحاسب

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A network protocol is an established set of rules that determine how data is transmitted between different devices in the same network. Essentially, it allows connected devices to communicate with each other. Network protocols are the reason you can easily communicate with people all over the world.

Explain the following protocols;

ICMP

The Internet Control Message Protocol (ICMP) is a network layer protocol that network devices use to detect problems with communication. The ICMP protocol is primarily used to evaluate whether data is arriving at its intended destination in a timely way. On network devices such as routers, the ICMP protocol is widely utilized.. ICMP is essential for error reporting and testing, but it may also be utilized in DDoS assaults. The "ping" tool, which employs an ICMP request and ICMP reply message, is a suitable example. ICMP may send an error message to the source if a certain host or .port is inaccessible

HTTP

The World Wide Web's cornerstone is the Hypertext Transfer Protocol (HTTP), which is used to load web pages via hypertext links. HTTP is an application layer protocol that communicates data between networked devices by operating on top of other layers of the network protocol stack. A typical HTTP flow comprises a client sending a request to a server, which then responds with a message. A client might be a desktop .computer, laptop, or mobile device, for example

SMTP

Email is quickly becoming one of the most important services available on the internet. SMTP is the most used technique for transferring email from one user to another via the internet. SMTP is a push protocol that is used to transmit email, whereas POP (post office protocol) or IMAP (internet message access protocol) are .used to retrieve emails at the recipient's end

FTP

FTP (full file transfer protocol) is a computer program used to transmit files from one computer to another via a local area network (LAN) or a wide area network (WAN) such as the Internet in the late twentieth and early twenty-first centuries. FTP, which was first suggested by engineers in 1971 and developed for use on host computers at the Massachusetts Institute of Technology, provided for the secure and rapid transfer of data between computers with various operating systems and machine architectures

TCP

TCP (Transmission Control Protocol) is a network protocol that connects two hosts and allows them to exchange data streams. TCP ensures that data and packets arrive in the same sequence as they were transmitted. TCP was created in the 1970s by Vint Cerf and Bob Kahn, who were DARPA scientists at the time. TCP's job is to guarantee that packets are delivered correctly and without errors. TCP uses concurrency control, which implies that the initial requests are tiny and gradually grow in size until they reach the maximum bandwidth that the computers, servers, and network can handle