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Ans1

Merriam-Webster's dictionary defines a web browser as a computer program used for accessing sites or information on a network (as the World Wide Web).

Wikipedia says, a web browser is a software application which enables a user to display and interact with text, images, videos, music and other information typically located on a Web page at a website on the World Wide Web or a local area network.

Some of the Web browsers available for personal computers include Internet Explorer, Mozilla Firefox, Safari, and Opera in order of descending popularity.

All Web browsers are capable of certain basic tasks, like finding and loading new Web pages, and displaying them following HTML standards and conventions.

Web browsers consist of client software that runs on your computer and displays home pages on the Web. There are clients for a wide variety of devices, including Windows, Macintosh, and Unix computers.

Web browsers communicate with Web servers primarily using HTTP (hypertext transfer protocol) to fetch webpages. HTTP allows Web browsers to submit information to Web servers as well as fetch Web pages from them.

When a web browser talks to a web server, it uses something called a universal remote locator (URL). The web address, or URL (Uniform Resource Locator), that you type into the browser's address bar tells the browser where to obtain a page from.

When a user enters a URL into the browser and presses the enter key, the web browser looks at the prefix before the colon and determines what protocol to use. It then looks at the text after the colon to figure out what server to communicate with.

Every server on the Internet has a unique IP Address. The Web browser then requests that the Domain Name Server (DNS) locate the required website. The browser accepts from the DNS (or host server), via the file transfer protocol (FTP), the website information; and then transfers this information to the user's computer. Next the browser evaluates the system requirements, of the user's computer, to determine if it is compliant with the information from host server. The browser then uses HTML to displays the Web page (images and/or text) onto the screen for the Internet user to view.

For example, you typed the following URL into the browser's address bar: http://www.universalteacherpublications.com/java/ebooks.htm

In this case, you're attempting to reach the Java section of universalteacherpublications.com. The browser looks at this particular URL in two main sections. The first is the protocol, which is "http://" then the browser will know that it is talking to a web server by using the http as the protocol. Since the browser now knows that the protocol is HTTP, it knows how to interpret everything located to the right of the forward slashes. It also knows that it is talking to universalteacherpublications.com and is asking for the file ebooks.htm. Since we did not define a port to use, the browser assumes that port 80 is the default port used to exchange data with the web server.

Ans2

CGI, Common Gateway Interface is a standard protocol for interfacing external application software with an information server, commonly a HTTP or web server.

A plain HTML document that the Web server delivers is static, which means it doesn't change. A CGI program, on the other hand, is executed in real-time, so that it can output dynamic information - perhaps a weather reading, or the latest results from a database query.

A Common Gateway Interface (CGI) program can be written in any language that allows it to be executed on a computer. The most commonly used languages for CGI at present is Perl.

Server side scripts (like CGI) may be called from the client with a HTML file reference to the server side script in any of the following ways:

- An HTML Anchor tag reference
- A SSI (Server side include) tag reference
- Using the HTML FORM tag with the action attribute set to the location and name of the server side script.

Some CGI Applications

1. Forms: One of the most prominent uses of CGI is in processing forms. Forms can be used to collect information from the user. They can also be used in a more complex manner to provide back-and-forth interaction. A CGI program can process this type of information.

2. Web Gateways are programs or scripts used to access information that is not directly readable by the client. For example, say you have an MySQL database that contains cricket statistics for all the players in team and you would like to provide this information on the Web. How would you do it? You certainly cannot point your client to the database file. CGI provides a solution to the problem in the form of a gateway. You can use a language such as perl to form SQL queries to read the information contained within the database.

Ans3 A Mail Server is a group of powerful computers dedicated to managing the transmission of message (electronic mail) electronically over computer networks. As electronic mail systems are based on client-server architecture, software application like Eudora Pro running on your PC is an electronic mail client. With it, users on the network can easily send, receive and organize their electronic messages through the user-friendly interface. Electronic mail is sent from Eudora Pro to a central Mail Server which then forwards the mail to its intended destination, or vice versa. In other words, both client and server programs must communicate with each other on the same protocol (language). Also, the client program relies very much on the server to process and manipulate each request.

The protocols involved are:-

- Simple Mail Transfer Protocol (SMTP)
- Post Office Protocol (POP)

Internet Message Access Protocol (IMAP)

Simple Mail Transfer Protocol (SMTP)

SMTP, or Simple Mail Transfer Protocol, is the standard protocol used for sending mail from clients to servers, as well as between mail servers on the Internet. In order to send email you must use an SMTP server.

For UMS mail servers, you should use **mail.maine.edu** as your SMTP (sometimes refered to as Outgoing) mail server.

Because of security concerns, if you are connecting to the Internet from outside the UMS network, you will not be able to connect to UMS SMTP servers without using SSL. Instead you must either use your Internet Service Providers mail servers, or configure your mail client to use SSL when connecting to mail.maine.edu for SMTP.

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Post Office Protocol (POP)

POP, or Post Office Protocol, is a protocol used to download mail to a mail client. POP is a very simple mail protocol. When a POP connection is established, a mail client downloads mail, then deletes it from the server. This is useful for users with limited Internet access (such as dial-up modem service) or users who only check their email from a single computer.

To use POP, you should set **mail.maine.edu** as your Incoming mail server. SSL is not required for POP connections but strongly recommended. ITS may require SSL for POP connections in the future.

Unfortinately, for users who need to access mail from more than one location, POP is not a good solution (since as soon as a client connects to the mail server that mail is deleted from the server). A better solution in this case is IMAP.

Top

Internet Message Access Protocol (IMAP)

IMAP, or Internet Message Access Protocol, is the prefered protocol for accessing email. IMAP

stores email on a mail server in folders, allowing for users to access their mail folders from any client (including webmail). IMAP is the recommended protocol for accessing email, unless there are connection limitations (most of which are now overcome by modern email clients that have the ability to locally cache IMAP folders for offline viewing).

IMAP connections for UMS email should use **mail.maine.edu** as the Incoming mail server. SSL is not required but strongly recommended. ITS may require SSL for IMAP connections in the future.

Ans:4 Internetwork:-> **Internetworking** involves connecting two or more distinct computer networks or network segments via a common routing technology. The result is called an *internetwork* (often shortened to *internet*).

The most notable example of internetworking is the Internet (capitalized), a network of networks based on many underlying hardware technologies, but unified by an internetworking protocol standard, called the Internet Protocol Suite (TCP/IP).

The network elements used to connect individual networks are known as routers, but were originally called gateways, a term that was deprecated in this context, due to confusion with functionally different devices using the same name.

The interconnection of networks with bridges (link-layer devices) is sometimes incorrectly termed "internetworking", but the resulting system is simply a larger, single subnetwork, and no internetworking protocol (such as IP) is required to traverse it. However, a single computer network may be converted into an internetwork by dividing the network into segments and then adding routers between the segments.

The original term for an internetwork was catenet. Internetworking started as a way to connect disparate types of networking technology, but it became widespread through the developing need to connect two or more local area networks via some sort of wide area network. The definition now includes the connection of other types of computer networks such as personal area networks.

IP only provides an unreliable (i.e., not guaranteed) packet service across an internet. To transfer data reliably, applications must utilize a Transport Layer protocol, such as Transmission Control Protocol (TCP), which provides a reliable stream. Some applications use a simpler transport protocol, User Datagram Protocol (UDP) for tasks which do not require reliable delivery of data or that require real-time service, such as video streaming.[1]

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[edit] Networking models

OSI Model
7 Application Layer
6 Presentation Layer
5 Session Layer
4 Transport Layer
3 Network Layer
2 Data Link Layer • LLC sublayer • MAC sublayer
1 Physical Layer

Two architectural models are commonly used to describe the protocols and methods used in internetworking. The Open System Interconnection (OSI) reference model was developed under the auspices of the International Organization for Standardization (ISO) and provides a rigorous description for layering protocol functions from the underlying hardware to the software interface concepts in user applications. Internetworking is implemented in Layer 3 (Network Layer) of the model.

The Internet Protocol Suite, also called the TCP/IP model, of the Internet was not designed to conform to this model and does not refer to it in any of the normative specifications (Requests for Comment) and Internet standards. Despite similar appearance as a layered model, it uses a much less rigorous, loosely defined architecture that concerns itself only with the higher level aspects of networking, i.e. it does not discuss hardware-specific low-level interfaces, other than assuming availability of a link-layer interface to the local network link. Internetworking is facilitated by the protocols of its Internet Layer.

Ans:5

Browser can refer to:

- Browsing (predation), a type of predation
- A user interface on a computer that allows navigation of objects
  - Web browser, used to access the World Wide Web
  - Wiki browser, for reading articles from Wikipedia
  - File browser, for managing files and related objects
  - **Help browser**, for reading online help

- Code browser, for navigating source code

Different components of web browser:-

These components include:

content - the information in a Web page or Web application, including:
natural information such as text, images, and sounds
code or markup that defines structure, presentation, etc.
Web browsers, media players, and other "user agents"
assistive technology, in some cases - screen readers, alternative keyboards, switches, scanning software, etc.
users' knowledge, experiences, and in some cases, adaptive strategies using the Web
developers - designers, coders, authors, etc., including developers with disabilities and users who contribute content
authoring tools - software that creates Web sites
evaluation tools - Web accessibility evaluation tools, HTML validators, CSS validators, etc.

How the Components Relate

Web developers usually use authoring tools and evaluation tools to create Web content.

People ("users") use Web browsers, media players, assistive technologies, or other "user agents" to get and interact with the content.

Interdependencies Between Components

There are significant interdependencies between the components; that is, the components must work together in order for the Web to be accessible. For example, for alternative text on images:

Technical specifications address alternative text (for example, HTML defines the alternative text attribute (alt) of the image element (img))
WAI guidelines - WCAG, ATAG, and UAAG, described below - define how to implement alternative text for accessibility in the different components
Developers provide the appropriate alternative text wording
Authoring tools enable, facilitate, and promote providing alternative text in a Web page
Evaluation tools are used to help check that alternative text exists
User agents provide human and machine interface to the alternative text
Assistive technologies provide human interface to the alternative text in various modalities
Users know how to get the alternative text from their user agent and/or assistive technology as needed

The Implementation Cycle

When accessibility features are effectively implemented in one component, the other components are more likely to implement them.

When Web browsers, media players, assistive technologies, and other user agents support an accessibility feature, users are more likely to demand it and developers are more likely to implement it in their content.

When developers want to implement an accessibility feature in their content, they are more likely to demand that their authoring tool make it easy to implement.

When authoring tools make a feature easy to implement, developers are more likely to implement it in their content.

When an accessibility feature is implemented in most content, developers and users are more likely to demand that user agents support it.

When One Component is Weak

If an accessibility feature is not implemented in one component, there is little motivation for the other components to implement it when it does not result in an accessible user experience. For example, developers are unlikely to implement an accessibility feature that authoring tools do not support and that most browsers or assistive technologies do not implement consistently.

If one component has poor accessibility support, sometimes other components can compensate through "work-arounds" that require much more effort and are not good for accessibility overall. For example,

developers can do more work to compensate for some lack of accessibility support in authoring tools; for example, coding markup directly instead of through a tool

users can do more work to compensate for some lack of accessibility support in browsers, media players, and assistive technology and lack of accessibility of content; for example, using different browsers or assistive technologies to overcome different accessibility issues

However, in most cases the works-arounds are not implemented and the result is still poor accessibility. Additionally, sometimes poor accessibility support in one component cannot be reasonably overcome by other components and the result is inaccessibility, making it impossible for some people with disabilities to use a particular Web site, page, or feature.

Guidelines for Different Components

The World Wide Web Consortium (W3C) Web Accessibility Initiative (WAI) develops Web accessibility guidelines for the different components:

Authoring Tool Accessibility Guidelines (ATAG) addresses authoring tools

Web Content Accessibility Guidelines (WCAG) addresses Web content, and is used by developers, authoring tools, and accessibility evaluation tools

User Agent Accessibility Guidelines (UAAG) addresses Web browsers and media players, including some aspects of assistive technologies