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## **HYPERTEXT, MULTIMEDIA AND THE WWW**

Hypertext allows documents to be linked in a nonlinear fashion.

Multimedia incorporates different media: sound, images, and video.

The World Wide Web is a global hypermedia system.

Animation and video can show information that is difficult to convey statically. Applications of hypermedia include online help, education and e-commerce. Design for the World Wide Web illustrates general hypermedia design, but also has its own special problems. Dynamic web content can be used for simple online demonstration.

### **Hypertext.**

- The term hypertext means certain extra capabilities imparted to normal or standard text.
- Technical documentation consists often of a collection of independent information units.
- It consists of cross references which lead to multiple searches at different places for the reader.
- Hypertext is text which is not constrained to be linear and it contains links to other texts which is known as hyperlinks.
- Hypertext is mostly used on World Wide Web for linking and navigating through different web pages.
- A hypertext consists of two different parts: Anchor and link
- An anchor or node is an entry point to another document. In some cases instead of a text an image a video or some other non-textual element.
- A link or pointer provide connection to other information unit known as target documents.

**Multimedia** refers to using computers to integrate text, graphics, animation, audio, and video into one application. Most multimedia applications are interactive, so that users may choose the material to view, define the order in which it is presented, and obtain feedback on their actions.

Interactivity also makes multimedia very suitable for video games, electronic newspapers and magazines, electronic books and references, simulations, virtual reality, and computer-based training. Multimedia applications can be created by using a multimedia authoring software. Many multimedia applications are also deliverable via the World Wide Web.

## **Graphics**

A graphic is a digital representation of information such as a drawing, a chart, or a photograph. Graphics were the first media used to enhance the originally text-based Internet.

Two of the more common graphical formats on the Web are JPEG and GIF. Other graphical formats such as BMP and TIFF have larger file sizes, and may require special viewer software to display on the Web. To reduce download times for graphics, some Web sites use thumbnails, which is a smaller version of a larger graphical image that a user may click to display the full-sized image.

## **Audio**

Audio can be music, speech, or any other sound. Common audio formats include WAV, MID, and MP3. Some Web sites use streaming audio, which allows a user to listen to the sound as it downloads to the computer. Two accepted standards for streaming audio on the Web are Windows Media Player and RealAudio.

## **Video**

Video consists of full-motion images that are played back at various speeds. Most video is also accompanied with audio. MPEG is a popular video compression standard defined by the Moving Picture Experts Group (MPEG). Streaming video allows a user to view longer or live video images as they download to the computer from the Web. Two popular streaming video formats are Windows Media Player and RealVideo.

**Animation** is the appearance of motion that is created by displaying a series of still images in rapid sequence. Animated GIF is a popular type of animation format, which combines several images into a single GIF file.

## **Multimedia Authoring Software**

Multimedia authoring software combines text, graphics, animation, audio, and video into an application. Multimedia is widely used in video games, electronic newspapers and magazines, electronic books and references, simulations, virtual reality, and computer-based training. Popular multimedia authoring software includes Macromedia AuthorWare, Macromedia Director, and Macromedia Flash. Multimedia computers have facilities for handling sound and video as well as text and graphics. Most computers are now sold with a multimedia capacity.

## **Web - World Wide Web**

The Web, or World Wide Web, is basically a system of Internet servers that support specially formatted documents. The documents are formatted in a markup language called HTML (HyperText Markup Language) that supports links to other documents, as well as graphics, audio, and video files.

This means you can jump from one document to another simply by clicking on hot spots. Not all Internet servers are part of the World Wide Web.

The Internet is a worldwide collection of networks that links millions of businesses, government offices, educational institutions, and individuals.

Data is transferred over the Internet using servers, which are computers that

manage network resources and provide centralized storage areas, and clients, which are computers that can access the contents of the storage areas. The data travels over communications lines. Each computer or device on a communications line has a numeric address called an IP (Internet protocol) address, the text version of which is called a domain name. Every time you specify a domain name, a DNS (domain name system) server translates the domain name into its associated IP address, so data can route to the correct computer.

**An Internet service provider (ISP)** provides temporary Internet connections to individuals and companies. An online service provider (OSP) also supplies Internet access, in addition to a variety of special content and services.

**A wireless service provider (WSP)**

provides wireless Internet access to users with wireless modems or Web-enabled handheld computers or devices.

Employees and students often connect to the Internet through a business or school network that connects to a service provider. For home or small business users, dial-up access provides an easy and inexpensive way to connect to the Internet. With dial-up access, you use a computer, a modem, and a regular telephone line to dial into an ISP or OSP. Some home and small business users opt for newer, high-speed technologies. DSL (digital subscriber line) provides high-speed connections over a regular copper telephone line. A cable modem provides high-speed Internet connections through a cable television network.

**The World Wide Web (WWW or Web)** consists of a worldwide collection of electronic documents called Web pages.

**A Browser** is a software program used to access and view Web pages. Each Web page has a unique address, called a URL (Uniform Resource Locator), that tells a browser where to locate the Web page. A URL consists of a protocol, domain name, and sometimes the path to a specific Web page or location on a Web page. Most URLs begin with `http://`, which stands for hypertext transfer protocol, the communications standard that enables pages to transfer on the Web.

**A search engine** is a software program you can use to find Web sites, Web pages, and Internet files. To find a Web page or pages, you enter a relevant word or phrase, called search text or keywords, in the search engines text box. Many search engines then use a program called a spider to read pages on Web sites and create a list of pages that contain the keywords. Any Web page that is listed as the result of the search is called a hit. Each hit is a link that can be clicked to display the associated Web site or Web page.

There are six basic types of Web pages. An advocacy Web page contains content that describes a cause, opinion, or idea. A business/marketing Web page contains content that promotes or sells products or services. An informational Web page contains factual information. A news Web page

contains newsworthy material including stories and articles relating to current events, life, money, sports, and the weather. A portal Web page offers a variety of Internet services from a single, convenient location. A personal Web page is maintained by a private individual who normally is not associated with any organization. Many exciting Web pages use multimedia. Multimedia refers to any application that integrates text with one of the following elements: graphics, sound, video, virtual reality, or other media elements.

**A graphic** is a digital representation of information such as a drawing, chart, or photograph. Two common file formats for graphical images on the Web are JPEG (Joint Photographic Experts Group) and GIF (Graphics Interchange Format), which use compression techniques to reduce the size of graphics files and thus speed downloading.

**Animation** is the appearance of motion created by displaying a series of still images in rapid sequence. One popular type of animation, called an animated GIF, uses computer animation and graphics software to combine several images into a single GIF file.

**Audio** is music, speech, or any other sound. A common format for audio files on the Web is MP3, a popular technology that compresses audio. More advanced Web audio applications use streaming audio, which transfers audio data in a continuous and even flow, allowing users to listen to the sound as it downloads. Video consists of full-motion images that are played back at various speeds. Video files often are quite large in size. The Moving Pictures Experts Group (MPEG) defines a popular video compression standard. Streaming video allows you to view longer or live video images as they are downloaded.

**Virtual reality (VR)** is the use of computers to simulate a real or imagined environment that appears as a three-dimensional (3-D) space. A VR world is an entire 3-D site that contains infinite space and depth.

A variety of services are used widely on the Internet, including e-mail, FTP, newsgroups and message boards, mailing lists, chat rooms, and instant messaging. E-mail (electronic mail) is the transmission of messages and files via a computer network. You use an e-mail program to create, send, receive, forward, store, print, and delete messages. To receive messages, you need an e-mail address, which is a combination of a username and a domain name that identifies a user.

**FTP (File Transfer Protocol)** is an Internet standard that allows you to upload and download files with other computers on the Internet. An FTP server is a computer that allows you to use FTP to upload files to, and download files from, an FTP site. With anonymous FTP, anyone can transfer some, if not all, available files. A newsgroup is an online area in which users conduct written discussions about a particular subject. The computer that stores and distributes newsgroup messages is called a news server. You use a program called a

newsreader to access a newsgroup, read previously entered messages (called articles), and add (post) messages of your own.

**A thread** consists of the original article and all subsequent related replies. In a moderated newsgroup, a moderator reviews articles and posts them, if appropriate.

**A message board** is a popular Web-based type of discussion group that does not require a newsreader and typically is easier to use than a newsgroup. A mailing list is a group of e-mail names and addresses given a single name. To add your e-mail name and address to a mailing list you subscribe to it; to remove your name, you unsubscribe.

**A chat** is real-time (meaning everyone involved in the chat is online at the same time) typed conversation that takes place on a computer. A location on an Internet server that permits users to chat is called a chat room. Some chat rooms support voice chats and video chats, where you can hear or see others and they can hear or see you as you chat. A chat client is a program on your computer that allows you to connect to a chat server and start a chat session. Instant messaging (IM) is a real-time Internet communications service that notifies you when one or more people are online and then allows you to exchange messages or join a private chat room.