

SOS POLITICAL SCIENCE AND PUBLIC ADMINISTRATION

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**SUBJECT NAME: COMPUTER APPLICATIONS IN FINANCIAL
ADMINISTRATION**

UNIT-V

TOPIC NAME: WWW



The World Wide Web (WWW), commonly known as the Web, is an information system where documents and other web resources are identified by Uniform Resource Locators (URLs, such as <https://www.example.com/>), which may be interlinked by hypertext, and are accessible over the Internet. The resources of the WWW are transferred via the Hypertext Transfer Protocol (HTTP) and may be accessed by users by a software application called a web browser and are published by a software application called a web server.

English scientist Tim Berners-Lee invented the World Wide Web in 1989. He wrote the first web browser in 1990 while employed at CERN near Geneva, Switzerland. The browser was released outside CERN in 1991, first to other research institutions starting in January 1991 and then to the general public in August 1991. The World Wide Web has been central to the development of

the Information Age and is the primary tool billions of people use to interact on the Internet.

Web resources may be any type of downloaded media, but web pages are hypertext media that have been formatted in Hypertext Markup Language (HTML). Such formatting allows for embedded hyperlinks that contain URLs and permit users to navigate to other web resources. In addition to text, web pages may contain references to images, video, audio, and software components which are displayed in the user's web browser as coherent pages of multimedia content.

Multiple web resources with a common theme, a common domain name, or both, make up a website. Websites are stored in computers that are running a program called a web server that responds to requests made over the Internet from web browsers running on a user's computer. Website content can be largely provided by a publisher, or interactively where users contribute content or the content depends upon the users or their actions. Websites may be provided for a myriad of informative, entertainment, commercial, governmental, or non-governmental reasons.

HISTORY:

Tim Berners-Lee's vision of a global hyperlinked information system became a possibility by the second half of the 1980s. By 1985, the global Internet began to proliferate in Europe and the Domain Name System (upon which the Uniform Resource Locator is built) came into being. In 1988 the first direct IP connection between Europe and North America was made and Berners-Lee began to openly discuss the possibility of a web-like system at CERN.

While working at CERN, Berners-Lee became frustrated with the inefficiencies and difficulties posed by finding information stored on different computers. On March 12, 1989, he submitted a memorandum, titled "Information Management: A Proposal", to the management at CERN for a system called "Mesh" that referenced ENQUIRE, a database and software project he had built in 1980, which used the term "web" and described a more elaborate information management system based on links embedded as text: "Imagine, then, the references in this document all being associated with the network address of the thing to which they referred, so that while reading this document, you could skip to them with a click of the mouse." Such a system, he explained, could be referred to using one of the

existing meanings of the word hypertext; a term that he says was coined in the 1950s. There is no reason, the proposal continues, why such hypertext links could not encompass multimedia documents including graphics, speech and video; so that Berners-Lee goes on to use the term hypermedia.

With help from his colleague and fellow hypertext enthusiast Robert Cailliau he published a more formal proposal on 12 November 1990 to build a "Hypertext project" called "Worldwide Web" (one word) as a "web" of "hypertext documents" to be viewed by "browsers" using a client–server architecture. At this point HTML and HTTP had already been in development for about two months and the first Web server was about a month from completing its first successful test. This proposal estimated that a read-only web would be developed within three months and that it would take six months to achieve "the creation of new links and new material by readers, [so that] authorship becomes universal" as well as "the automatic notification of a reader when new material of interest to him/her has become available". While the read-only goal was met, accessible authorship of web content took longer to mature, with the wiki concept, WebDAV, blogs, Web 2.0 and RSS/Atom.

The proposal was modelled after the SGML reader Dynatext by Electronic Book Technology, a spin-off from the Institute for Research in Information and Scholarship at Brown University. The Dynatext system, licensed by CERN, was a key player in the extension of SGML ISO 8879:1986 to Hypermedia within HyTime, but it was considered too expensive and had an inappropriate licensing policy for use in the general high energy physics community, namely a fee for each document and each document alteration. A NeXT Computer was used by Berners-Lee as the world's first web server and also to write the first web browser in 1990. By Christmas 1990, Berners-Lee had built all the tools necessary for a working Web: the first web browser (Worldwide Web, which was a web editor as well) and the first web server. The first web site, which described the project itself, was published on 20 December 1990.

The first web page may be lost, but Paul Jones of UNC-Chapel Hill in North Carolina announced in May 2013 that Berners-Lee gave him what he says is the oldest known web page during a visit to UNC in 1991. Jones stored it on a magneto-optical drive and on his NeXT computer.^[21] On 6 August 1991, Berners-Lee published a short summary of the World Wide Web project on

the newsgroup alt.hypertext. This date is sometimes confused with the public availability of the first web servers, which had occurred months earlier. As another example of such confusion, several news media reported that the first photo on the Web was published by Berners-Lee in 1992, an image of the CERN house band Les Horrible Cernettes taken by Silvano de Gennaro; Gennaro has disclaimed this story, writing that media were "totally distorting our words for the sake of cheap sensationalism".

The first server outside Europe was installed in Dec 1991 at the Stanford Linear Accelerator Center (SLAC) in Palo Alto, California, to host the SPIRES-HEP database. The underlying concept of hypertext originated in previous projects from the 1960s, such as the Hypertext Editing System (HES) at Brown University, Ted Nelson's Project Xanadu, and Douglas Engelbart's on-Line System (NLS). Both Nelson and Engelbart were in turn inspired by Vannevar Bush's microfilm-based memex, which was described in the 1945 essay "As We May Think".

Berners-Lee's breakthrough was to marry hypertext to the Internet. In his book *Weaving the Web*, he explains that he had repeatedly suggested to members of both technical communities that a marriage between the two technologies was possible. But, when no one took up his invitation, he finally assumed the project himself. In the process, he developed three essential technologies:

- A system of globally unique identifiers for resources on the Web and elsewhere, the universal document identifier (UDI), later known as uniform resource locator (URL) and uniform resource identifier (URI);
- The publishing language Hypertext Markup Language (HTML);
- Hypertext Transfer Protocol (HTTP).

The World Wide Web had several differences from other hypertext systems available at the time. The Web required only unidirectional links rather than bidirectional ones, making it possible for someone to link to another resource without action by the owner of that resource. It also significantly reduced the difficulty of implementing web servers and browsers (in comparison to earlier systems), but in turn presented the chronic problem of link rot. Unlike predecessors such as HyperCard, the World Wide Web was non-proprietary, making it possible to develop servers and clients independently and to add extensions without licensing restrictions. On 30 April 1993, CERN announced that the World Wide

Web would be free to anyone, with no fees due. Coming two months after the announcement that the server implementation of the Gopher protocol was no longer free to use, this produced a rapid shift away from Gopher and toward the Web. An early popular web browser was Viola WWW for UNIX and the X Window System.

Historians generally agree that a turning point for the Web began with the 1993 introduction of Mosaic, a graphical web browser developed at the National Center for Supercomputing Applications at the University of Illinois at Urbana-Champaign (NCSA-UIUC). The development was led by Marc Andreessen, while funding came from the US High-Performance Computing and Communications Initiative and the High Performance Computing Act of 1991, one of several computing developments initiated by US Senator Al Gore. Prior to the release of Mosaic, graphics were not commonly mixed with text in web pages, and the Web was less popular than older protocols such as Gopher and Wide Area Information Servers (WAIS). Mosaic's graphical user interface allowed the Web to become by far the most popular protocol on the Internet. The World Wide Web Consortium (W3C) was founded by Tim Berners-Lee after he left the European Organization for Nuclear Research (CERN) in October 1994. It was founded at the Massachusetts Institute of Technology Laboratory for Computer Science (MIT/LCS) with support from the Defense Advanced Research Projects Agency (DARPA), which had pioneered the Internet; a year later, a second site was founded at INRIA (a French national computer research lab) with support from the European Commission DG InfSo; and in 1996, a third continental site was created in Japan at Keio University. By the end of 1994, the total number of websites was still relatively small, but many notable websites were already active that foreshadowed or inspired today's most popular services.

Connected by the Internet, other websites were created around the world. This motivated international standards development for protocols and formatting. Berners-Lee continued to stay involved in guiding the development of web standards, such as the markup languages to compose web pages and he advocated his vision of a Semantic Web. The World Wide Web enabled the spread of information over the Internet through an easy-to-use and flexible format. It thus played an important role in popularizing use of the Internet. Although the two terms are sometimes conflated in popular use, World Wide Web is

not synonymous with Internet. The Web is an information space containing hyperlinked documents and other resources, identified by their URIs. It is implemented as both client and server software using Internet protocols such as TCP/IP and HTTP.

Berners-Lee was knighted in 2004 by Queen Elizabeth II for "services to the global development of the Internet". He never patented his invention.

WORLD WIDE WEB FEATURES:

1. The amount of information available on the Internet has become so large that it is difficult to search for specific information. The World Wide Web (WWW) makes retrieval easy and quick.
2. The WWW is a search tool that helps you find and retrieve information from a Web site using links to other sites and documents. The WWW was built on the technology called Hypertext. This technology increases accessibility to linked documents on the Internet and helps user to navigate between documents very easily.
3. Hypertext is identified by underlined text and a different color usually. Some places will refer to these types of technique as Jump-Off Points. Hypertext can make links within the same document or to other documents.
4. Each time you access a new document by choosing a link, there is a connection made with the web server that the document is on. Once the appropriate document is retrieved the connection is broken. There is no point in maintaining the link while you are viewing it. This is one reason why the WWW is so efficient.
5. WWW lets you search, traverse, and use many types of information at numerous sites and in multiple forms. This interface is called a browser. Some people refer to a browser as a 'web browser' often these terms are used interchangeably.
6. The WWW is intended to help people share information resources, and services with the widest possible community of users. Thus a user can access the WWW on Apple, UNIX, Macintosh, DOS, Windows, and other operating systems.

7. Just like the Internet, the WWW has a protocol, which is known as Hyper Text Transfer Protocol (HTTP). HTTP acts as an interface between a Web Client Software, such Netscape Navigator.
8. A major advantage of the WWW is that it also supports TCP/IP services, such as Gopher, FTP, and Archie in addition to HTTP.

Web Client Software:

1. To view documents on the Internet, you need a piece of software called a browser. A browser provides you an interface to interact with the Internet. Browsers are also called clients. Any software that allows you to browse the Web is called a Web client. The most commonly used Web clients are Mosaic, Netscape, and Internet Explorer.
2. Mosaic was the first Graphical Web browser software that was made available on UNIX platforms. Since then Mosaic has been extended to Macintosh and Windows. Capabilities of Mosaic have set the standards for other browsers.
3. Web browsers include the capability to display Hyper Text and Hypermedia documents such as sounds and movies. Another feature useful is its ability to display electronic text in a variety of fonts, including normal text, bold, and italic.
4. Web browsers provide the capabilities to have forms that the user is able to fill-out. These forms are a specially designed section of Hyper Text Markup Language (HTML) documents. The forms allow user feedback, product ordering, and document searching.
5. Browsers have the ability to view Postscript files online in real time mode. With Postscript files, you can display scientific notation.
6. In addition to the already mention features, browsers make transparent Uniform Resource Locator (URL) redirection. The URL provides the addresses of documents stored in different locations.
7. Finally, browsers have the ability to authenticate the identity of users by user names and passwords. Once a user is authenticated on a server, the browser reuses the information without prompting for it again.

8. Another Web browser is Netscape Navigator. Netscape provides the ability to support inline images. Meaning the images can become a part of the web page and are coded into the HTML pages using the HTML language. Netscape also has built-in components for sending and receiving E-mail. Another built-in component is security features that provide the necessary security for various tasks the browser does.
9. Caching is used by Netscape as a temporary storage of files for quick response time. Caching allows files to be accessed on your hard drive instead of access the site it came from again. Access to links while the documents are being retrieved. Therefore all the links and images are live as they are downloaded. This allows web pages to be viewed as they are downloaded. Plus if while downloading one document, you click on a link on that document, the download will stop and the retrieval of the next document is begun. Despite different versions of Netscape on different platforms, the interfaces stay consistent.
10. Lynx is another Web browser; however, the slight difference is it is text based. It can connect users with information in the various methods as mentioned earlier. This feature allows it to be quicker, since it does not have to load in-line graphics.

Web Server Software:

1. Web Documents that you view on the Internet are stored on different Web servers. Web servers are computers on which Web documents reside and run HTTP software to permit Web transactions. CERN and NCSA are the two organizations that provide Web Server software, such as CERN http and NCSA https, respectively.
2. CERN https, or CERN Hypertext Transfer Protocol Daemon, is generic public domain Hypertext Server software that can be used as regular HTTP server software. In addition to serving Hypertext and other documents, the CERN https software can act as a proxy for HTTP, FTP, Gopher or WAIS. Proxy software is a security measure that prevents direct access to the Web server. This provides protection against unauthorized access of the CERN server and consequently provides security to the documents that reside on it. Another feature of the CERN https software is that it is easy to install, which

makes it the preferred Web Server software in many organizations. CERN has a completely interruptible network input/output facility. This facility of the CERN https software allows you to view the full status of the server during network operations.

3. Commonly used Web Server software is NCSA https. This software shares several common characteristics with the CERN https software, which makes it equally popular. This Web Server software from NCSA provides support for accessing documents, images, audio, video, animation and data through different sources. The NCSA https Web Server software has an X/Motif interface that is user-friendly and facilitates easy interaction. The user interface is further enhanced by a wide choice of color settings. As well as the choice to view documents in monochrome or in color. NCSA http provides multiple independent document viewing windows to view multiple documents stored on the server. NCSA has a security feature that is equivalent to the user name/ password scheme of telnet, a remote login feature of the Internet. Another interesting feature of the NCSA http software is its customizable encryption hooks. They allow external encryption to be used to request and receive encrypted documents. In addition, the NCSA Web Server software can also display very long documents.

ADVANTAGES OF WORLD WIDE WEB:

1. Availability of information that is you is able to access information from anywhere and also makes friends from across the globe.
2. Reduces the cost of divulgation.
3. Rapid interactive communication which can be used for different services.
4. Exchange of huge volumes of as well as establishment of professional contact.
5. Low cost of initial connection.
6. Facilitates the establishment of professional contact.

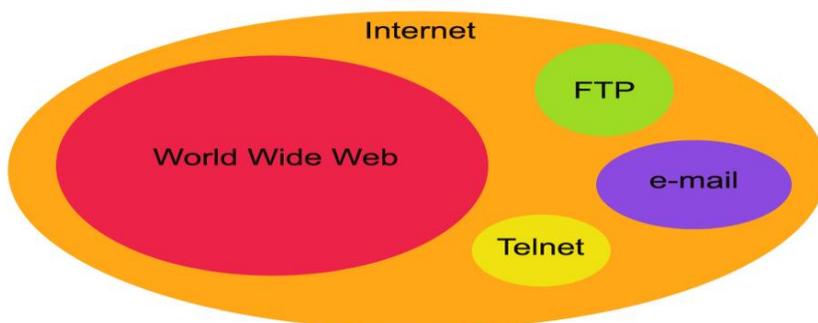
7. No barriers to divulgation.
8. Facilitates access to different sources of information, which is continuously updated.
9. It has become the global media.

DISADVANTAGES OF WORLD WIDE WEB:

1. Danger of overload and excess information.
2. Efficient information search strategy is required.
3. The search can be slow.
4. It may be difficult to filter and priorities the information.
5. Net also becomes overloaded because large number of users.
6. No quality control over the available data etc.

So, World Wide Web is hypermedia using the Hypertext Markup Language or HTML. This unique language will help the user to access information that is to be linked so that when a person selects or clicks on one part of a link their browser automatically finds the designated information. The unique characteristic is that it empowers the users to 'click' on a word and is transported to a related web location.

WORLD WIDE WEB VS INTERNET:



INTERNET VERSUS WORLD WIDE WEB

INTERNET	WORLD WIDE WEB
A global system of interconnected computer networks that use the TCP/IP protocol to link devices worldwide	Online content that is formatted in HTML and accessed via HTTP protocol
A massive interconnection of computer networks around the world	Service provided by the internet
Uses Transmission Control Protocol/Internet Protocol (TCP/IP)	Uses Hyper Text Transfer Protocol (HTTP)

Simply, the Internet is a network of networks and there are all kinds of networks in all kinds of sizes. You may have a computer network at your work, at your school or even one at your house. These networks are often connected to each other in different configurations, which is how you get groupings such as local area networks (LANs) and regional networks. Your cell phone is also on a network that is considered part of the Internet, as are many of your other electronic devices. And all these separate networks added together are what constitute the Internet. Even satellites are connected to the Internet.

The World Wide Web, on the other hand, is the system we use to access the Internet. The Web isn't the only system out there, but it's the most popular and widely used. (Examples of ways to access the Internet without using HTTP include e-mail and instant messaging.) As mentioned on the previous page, the World Wide Web makes use of hypertext to access the various forms of information available on the world's different networks. This allows people all over

the world to share knowledge and opinions. We typically access the Web through browsers, like Internet Explorer, Chrome and Mozilla Firefox. By using browsers like these, you can visit various Web sites and view other online content.