Web History
The World Wide Web

The advent of the World Wide Web (WWW) ushered in a quiet revolution all over the world. It radically changed the way we communicate and do business.

Some ways we use the Web in our daily life:
• send / receive e-mail, documents, pictures, music, video
• get news - newspapers, newsgroups
• buy and sell almost anything
• make travel arrangements - airlines, hotels
• fill prescriptions
• banking: pay bills
• and of course, play games
History of the Internet

To understand the growth of the web it is useful to study the history of the Internet, especially in terms of the societal causes and their technological effects.

The original “Internet” was nothing like the Internet of today. The Internet began in 1969 as four networked computers.

- Documents were plain text
- No images, no formatting / fonts / colors, no “interaction”
- About all you could do was transfer files from one computer to another

Nowadays, most people use the terms "the Internet" and "the Web" interchangeably. But the Internet predates the Web by several decades.

We can divide the history of the Internet into three phases.
Three Phases of the Internet

Phase 1: the development of the infrastructure of the Internet.
- This included the construction of the network of cables and routers and the establishment of protocols for the transmission of data across the network.

Phase 2: tremendous growth in the number of applications that made it easy to send, receive, and search for information.
- The second phase culminated in the creation of the World Wide Web and software (browsers) that allowed easy access to the Web.

Phase 3: the commercialization of the Web, and the continued improvement in the hardware infrastructure and the supporting software.
In the mid to late 80’s, most computers in universities and research labs in the US and Western Europe were on the Internet.

One could remotely login to computers using telnet or retrieve files from public servers through ftp.

Several useful software programs were developed to make access to the internet easier.

- **Archie** was a system that archived indexes of files available on public servers and which could be queried.

- A similar service was provided by **Wais** that allowed a user to find an article based on what it contained. This was a precursor of our search engines like Google.

- Another search tool that hit the scene was **Gopher**. Gopher was menu driven, and retrieved and displayed text files.
In the early 1990s, Tim Berners-Lee was working at CERN, and developed a more convenient way for computers to communicate files over the Internet.

He envisioned a global hypertext space where documents could be identified by a unique identifier (now called a URL) and documents could link to other documents in this space using that identifier.

He named his creation the ”World Wide Web”, and it included three key pieces:

- Text files, written in a format called “HTML” (HyperText Markup Language), containing links to other HTML files.
- A program, called a browser, for viewing HTML files.
- A set of rules, known as HTTP (HyperText Transfer Protocol), for transferring HTML files from one computer to another.
The World Wide Web (cont.)

- The **Internet** is a global network of networks connecting computers together.
- The **Web** is a collection of information accessed over the Internet.

Another way to look at this is: the Internet is infrastructure, while the Web is services on top of that infrastructure.

- A **web page** is an HTML document that is viewed in a web browser.
- A **website** is a collection of related web pages.
- A **web server** is a computer and software that provides web pages to web browsers.
A Brief History of the Internet / Web

1957: USSR launched the Sputnik and in response the USA created the Advanced Research Projects Agency (ARPA) to establish a lead in US science and technology.

1961: Leonard Kleinrock published the first paper on packet switching theory.


1971: The e-mail program was invented.

1972: First e-mail on ARPANET with the "@" character used.

1973: First international connections to ARPANET (Norway and UK).

1977: Apple II desktop computer introduced.
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1980: First major virus brings ARPANET to its knees.

1981: BITNET ("Because It's Time" or "Because It's There" Network) was a network of educational sites separate from ARPANET, but e-mail was freely exchanged between BITNET and ARPANET. Listservs, the most popular form of e-mail discussion groups originated on BITNET. BITNET machines were usually IBM mainframes running the VMS operating system.

1983: Domain names invented.

1984: ARPANET connected around 1000 hosts, but it required sponsorship of the US government.

1985: First .com and .edu domains registered.
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1986: NSFnet was established through funding from NSF.

1989: First commercial e-mail.


1992: Coordination of NSFnet was turned over to an international organization Internet Society (ISOC).

1993: Mosaic Web browser introduced.

1994: First major e-mail spam.

1996: Netscape and Internet Explorer introduced.

1998: W3C standards for Web