



Internet & WWW

A brief introduction



What is the Internet and the World Wide Web?



What is the Internet?

“A diverse set of independent networks, interlinked to provide its users with the appearance of a single, uniform network.”



A very short history of the Internet

- 1957: USSR launches Sputnik
- 1958: Department of Defense: **A**dvanced **R**esearch **P**rojects **A**gency (ARPA)
- ARPAnet: online in 1969
 - centralized > decentralized > distributed network
 - packet switching (message broken up into chunks, then rearranged at its destination)
- 1973-74: rules for networks to communicate (TCP/IP)
 - the term “Internet” is coined
- 1983: TCP/IP adopted across ARPAnet > birth of the modern Internet



*...the other small step
for mankind...*

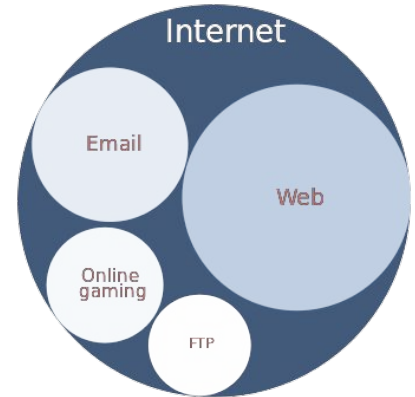
“A diverse set of independent networks, interlinked to provide its users with the appearance of a single, uniform network.”

So, what is the World Wide Web?

That's what most people think of when they see the term "internet"

"The Web is an abstract (imaginary) space of information. On the Net, you find computers -- on the Web, you find document, sounds, videos,... information. On the Net, the connections are cables between computers; on the Web, connections are hypertext links..."

Sir Tim Berners-Lee



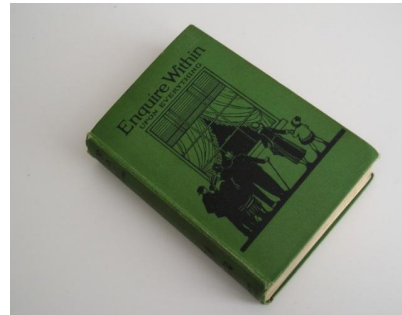
The World Wide Web

- Origins: 1963: concept of hypertext as “nonsequential writing”

- WWW invented by Tim Berners-Lee

The invention of the WWW is attributed to the British **Tim Berners-Lee**, who, along with the Belgian Robert Cailliau, published a proposal in **1990** for a hypertext system while both were working at CERN in Switzerland.

1. Implemented the idea of hypertext
2. Created the World Wide Web
3. Gave the software away for free



This growth was very much facilitated by the decision of CERN to not patent the work and ideas done by its employee and instead left the web protocols and code-base royalty free.



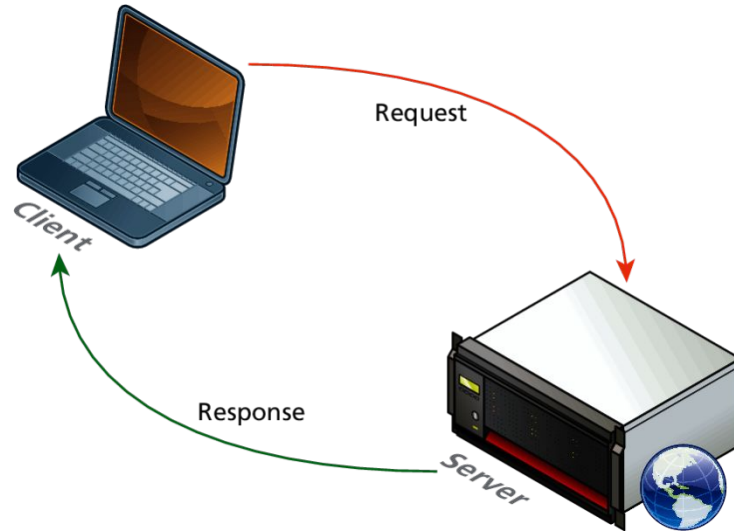
1994: Berners-Lee helps found the **World Wide Web Consortium** (W3C), the international standards organization that oversees the growth of the web.

Major Components of the Web

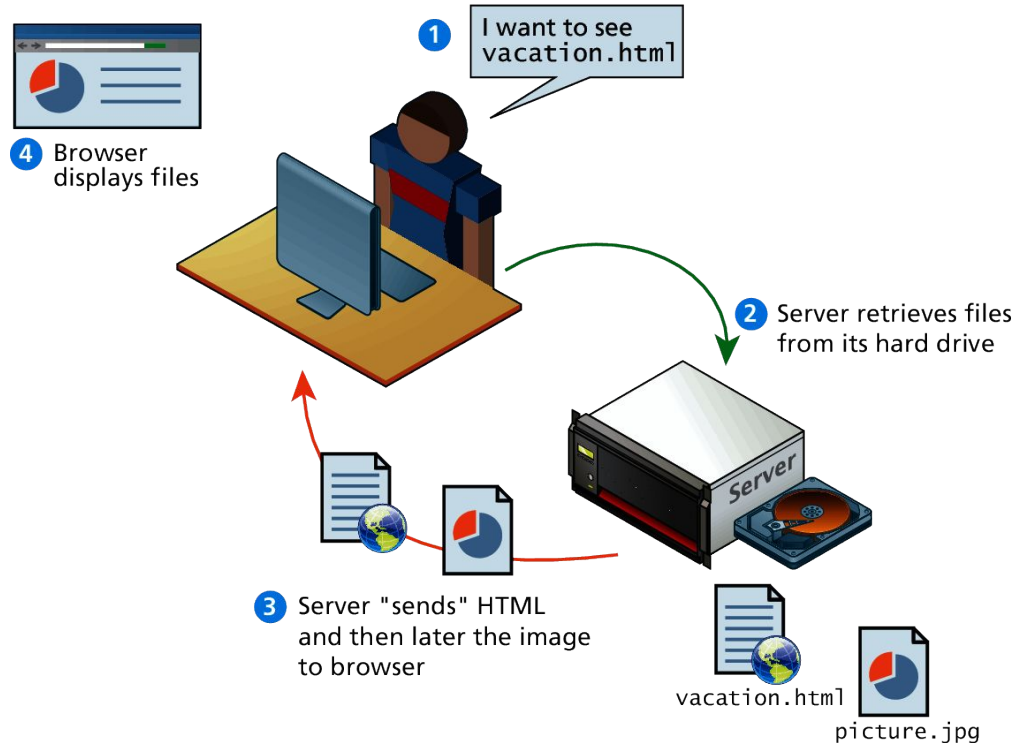
1. **URL** (uniform resource locator)
a unique address to identify a resource on the Web
2. **HTTP**: hypertext transfer protocol
a set of rules that enable a client (your local computer) to communicate with a server (a remote computer)
3. **A web server**
A program that resides on the server (the term server can refer to both, the machine and the software that resides on it and is responsible for handling client requests)
4. **A web browser**
A program that resides on the client, is capable of making requests to the server based on the provided URL, and then displays the HTML it receives from the server.
5. **HTML**: hypertext markup language
The markup language used to describe the content of a web page

How the Web works: Client-Server Model

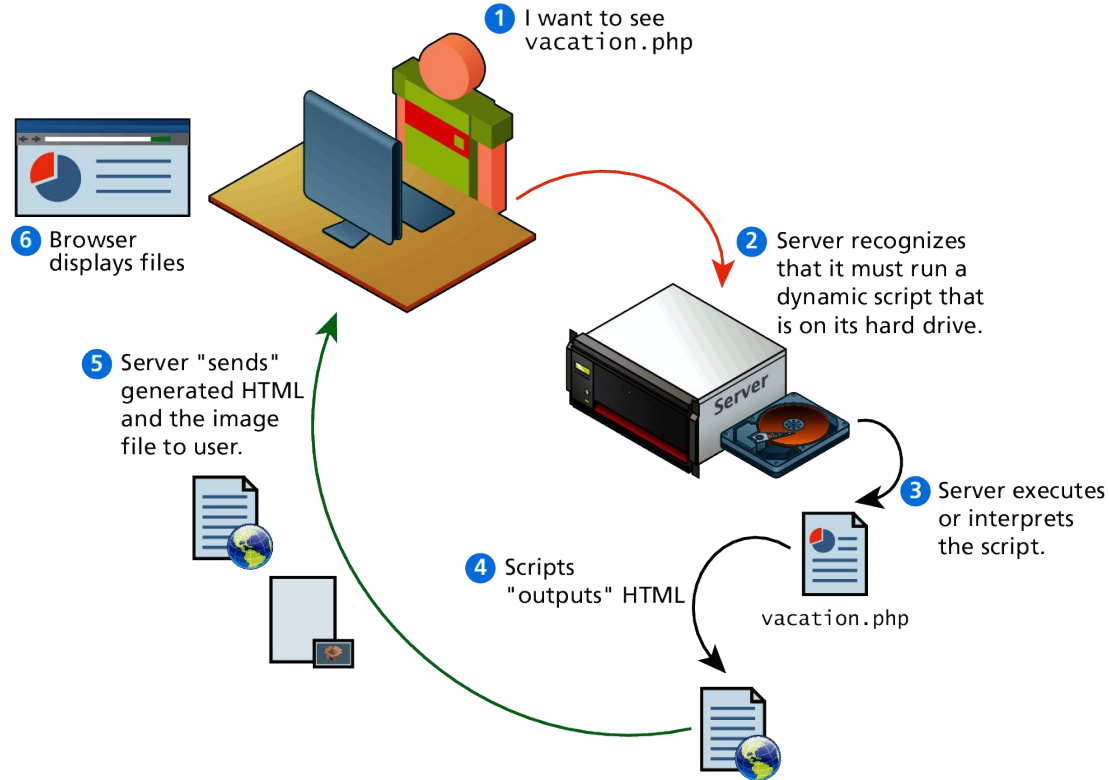
How web pages are delivered to your browser screen:



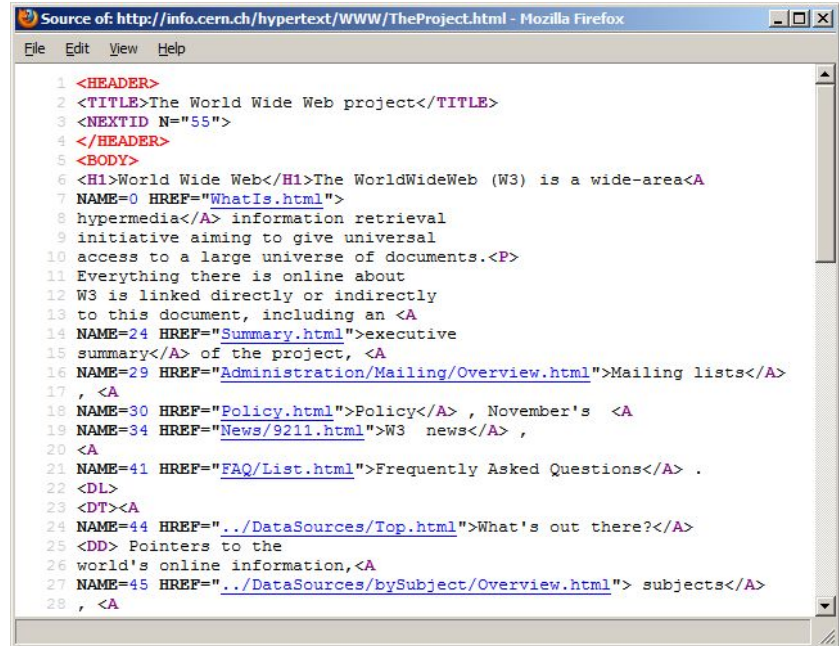
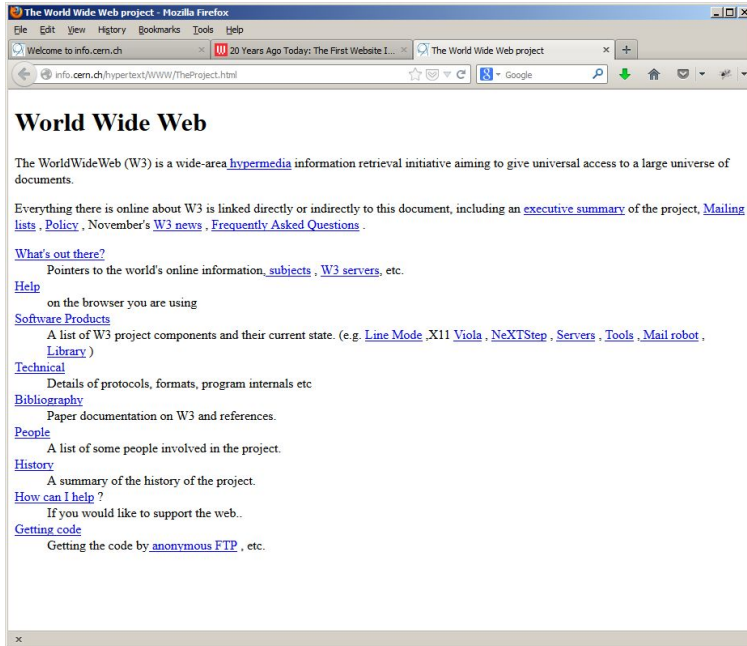
Static Web Sites: web files located on the server



Dynamic Web Sites: files generated by the server



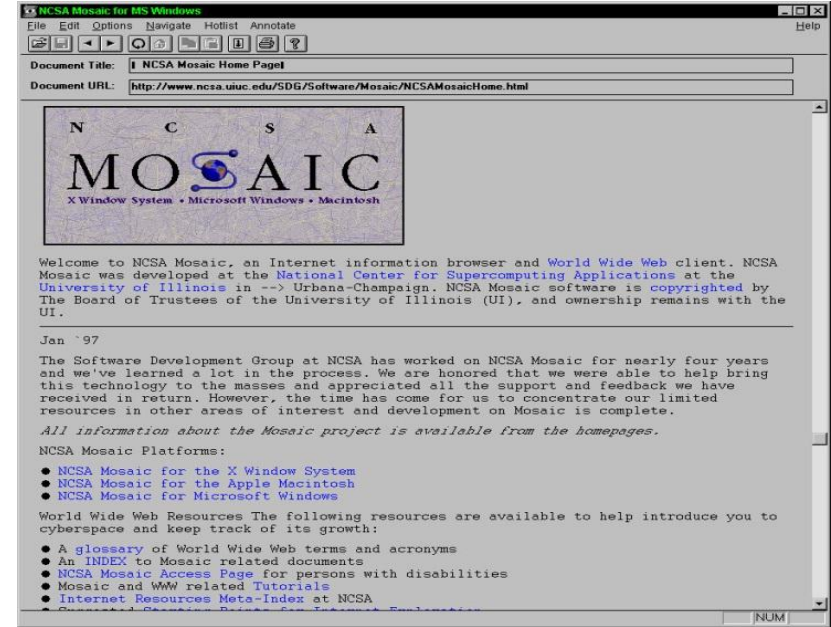
First Webpage: 1991



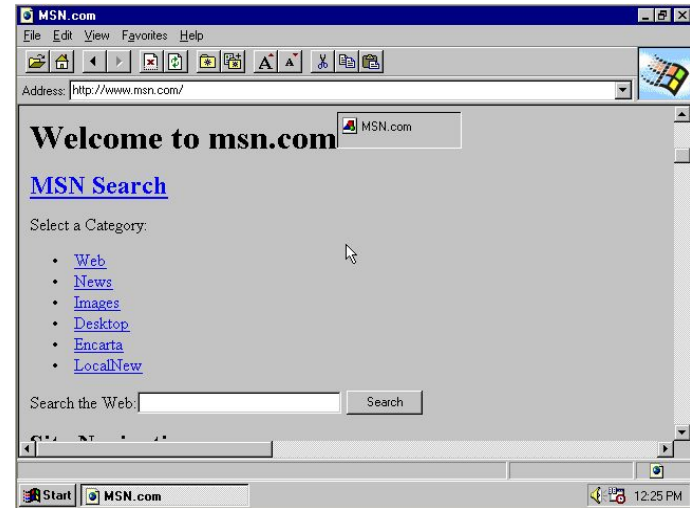
<http://info.cern.ch/hypertext/WWW/TheProject.html>

'Ancient" web pages

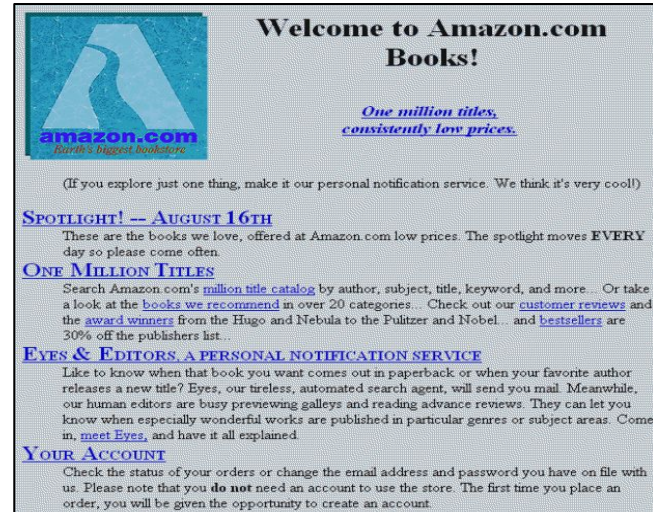
The very first browser: Mosaic (1993)
(by Mark Andreessen and Eric Bina at U of Illinois)



'Ancient" web pages



'Ancient" web pages



Our “tech” focus

- **HTML (Hypertext Markup Language)** for structure
 - text, lists, tables, forms, images links, etc...

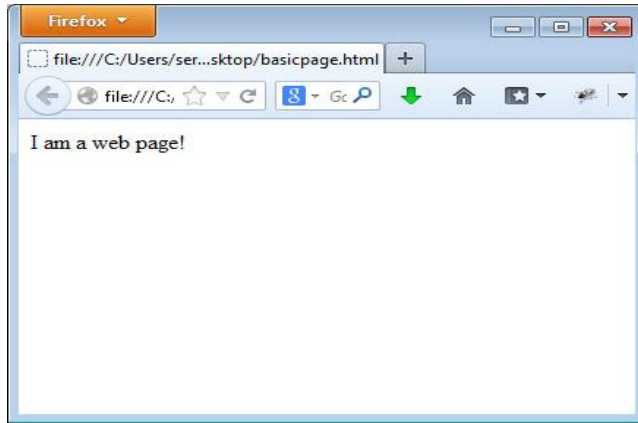
```
<p>I am a paragraph!
```

- **CSS (Cascading Style Sheets)** for presentation
 - format, layout, font size, font face, border width, background color, etc...

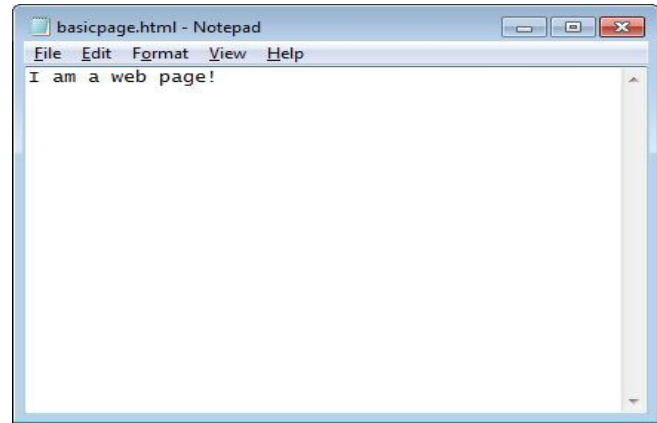
```
p {  
    color: gray;  
    font-weight: bold;  
}
```


On to building websites!

- What is a web page?
 - A reminder: It's just a plain text file!



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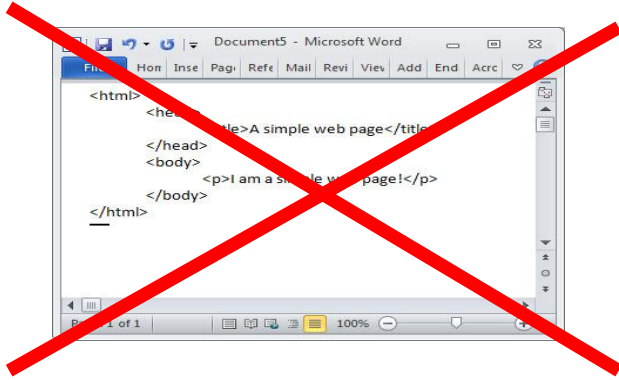
How to Create Web Pages

You can create a web page using any text editor
(Notepad, Notepad++, TextEdit, TextWrangler, Brackets, etc...)

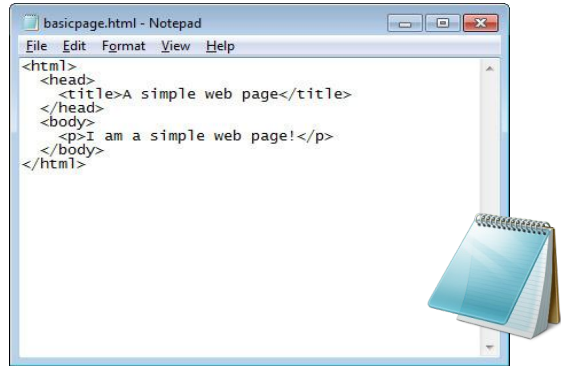
Do NOT use a word processor (Microsoft Word)

Do select plain text format (NOT rich text format)

How to Create Web Pages



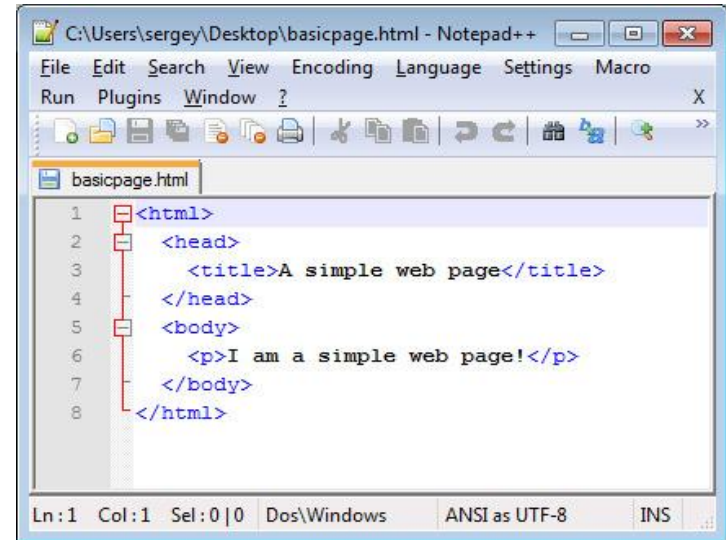
Never, use a word processor (or rich text format in an editor)!



Notepad is a very basic choice: it will get the job done, but you can use something much better

Editing Web Pages

A much better choice: Notepad++
(or any other text editor – most will support HTML)

A screenshot of the Notepad++ application window. The title bar shows the file path "C:\Users\sergey\Desktop\basicpage.html - Notepad++". The menu bar includes File, Edit, Search, View, Encoding, Language, Settings, Macro, Run, Plugins, and Window. The toolbar contains various icons for file operations and editing. The main text area shows the following HTML code:

```
1 <html>
2   <head>
3     <title>A simple web page</title>
4   </head>
5   <body>
6     <p>I am a simple web page!</p>
7   </body>
8 </html>
```

The status bar at the bottom indicates "Ln: 1 Col: 1 Sel: 0 | 0 Dos\Windows ANSI as UTF-8 INS".

Exercise: Create a web page

- to be continued next time -