

Chapter 0

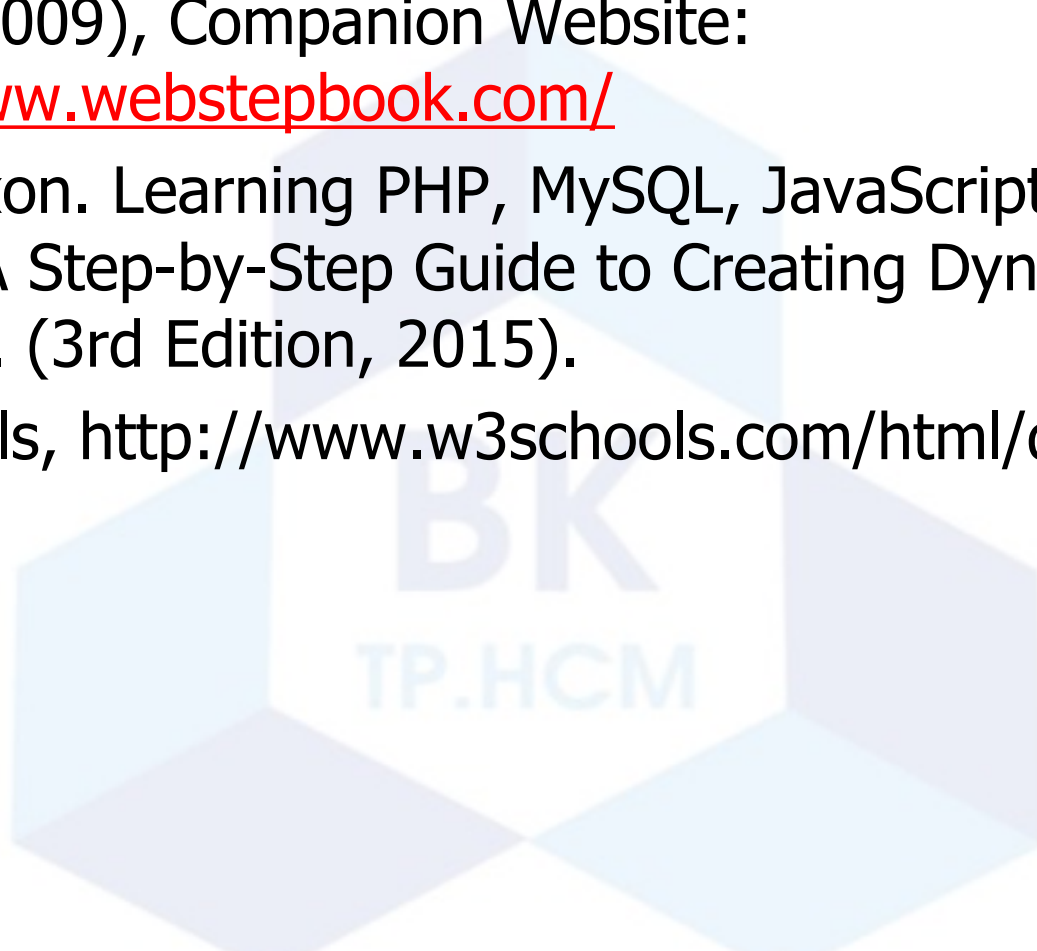
Overview



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Books and references

- Stepp, Miller, Kirst. Web Programming Step by Step. (1st Edition, 2009), Companion Website:
<http://www.webstepbook.com/>
- Robin Nixon. Learning PHP, MySQL, JavaScript, CSS & HTML5. A Step-by-Step Guide to Creating Dynamic Websites. (3rd Edition, 2015).
- W3Schools, <http://www.w3schools.com/html/default.asp>



Content

- HTML5 + Forms
- CSS + CSS3
- JavaScript
- PHP

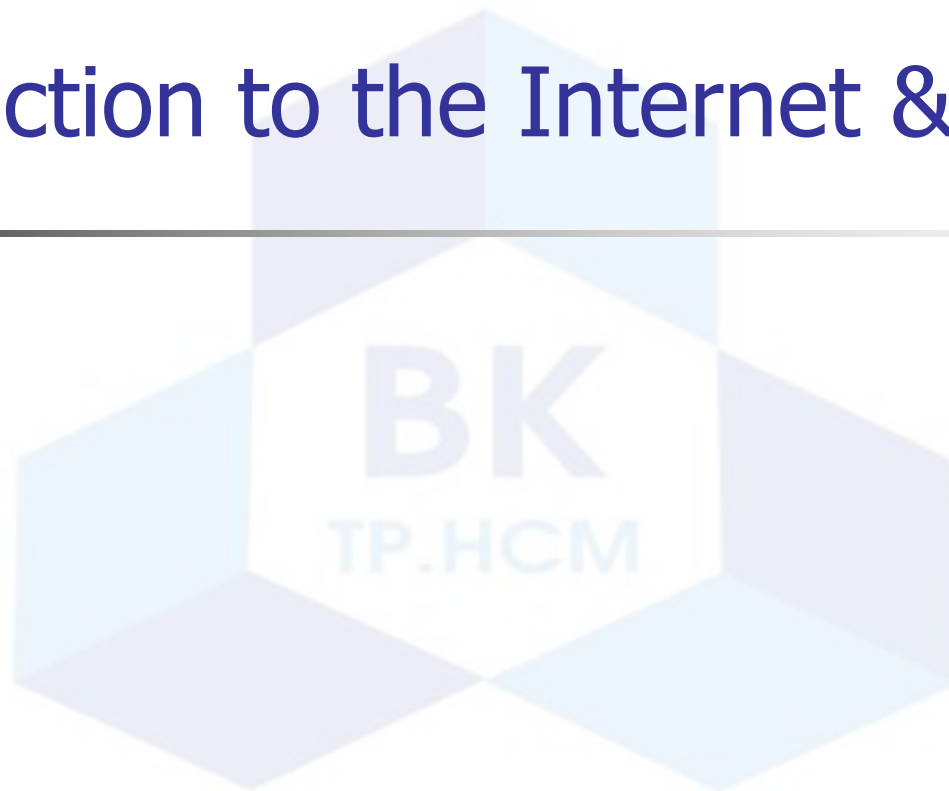


Grading

- Bài tập: 10%
- Thực hành: 10%
- Assignment: 40%
- Final Exam: 40%

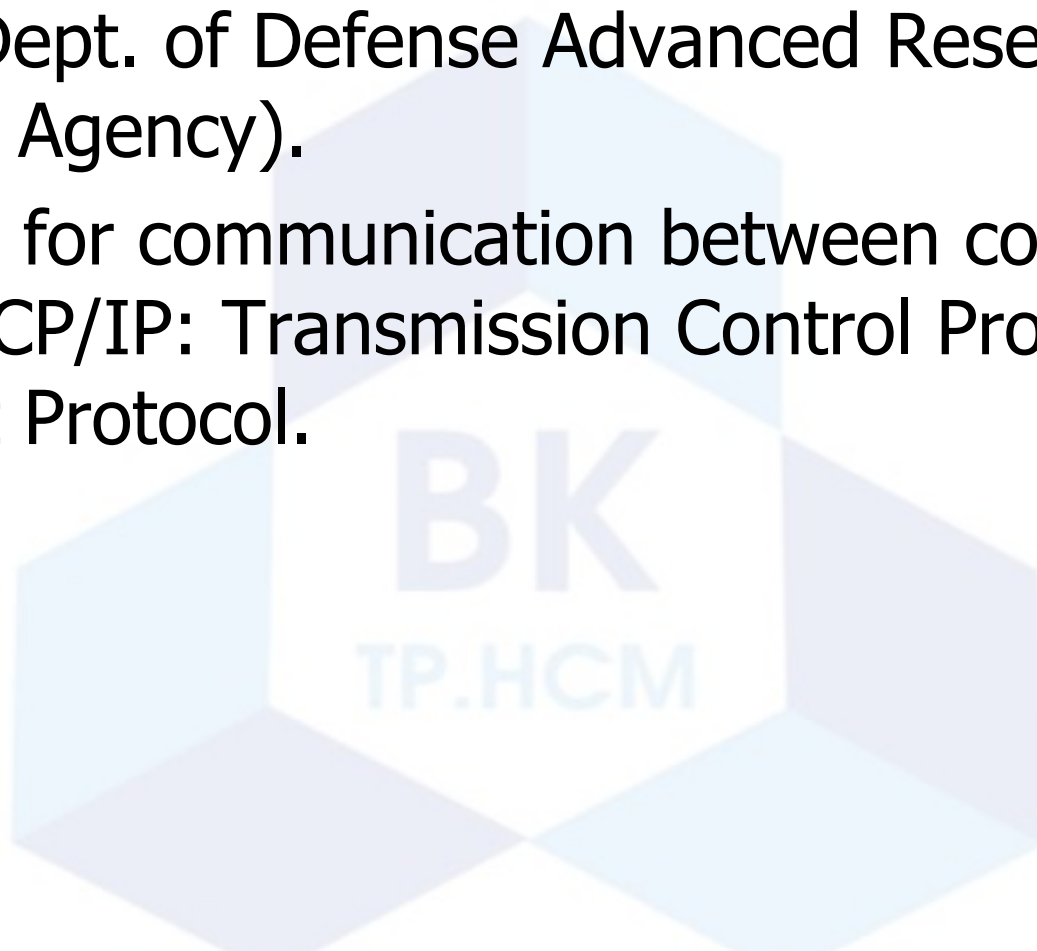


Introduction to the Internet & the Web



The Internet

- Developed beginning in the 1960s, sponsored by ARPA (Dept. of Defense Advanced Research Projects Agency).
- Protocol for communication between computers is called TCP/IP: Transmission Control Protocol / Internet Protocol.

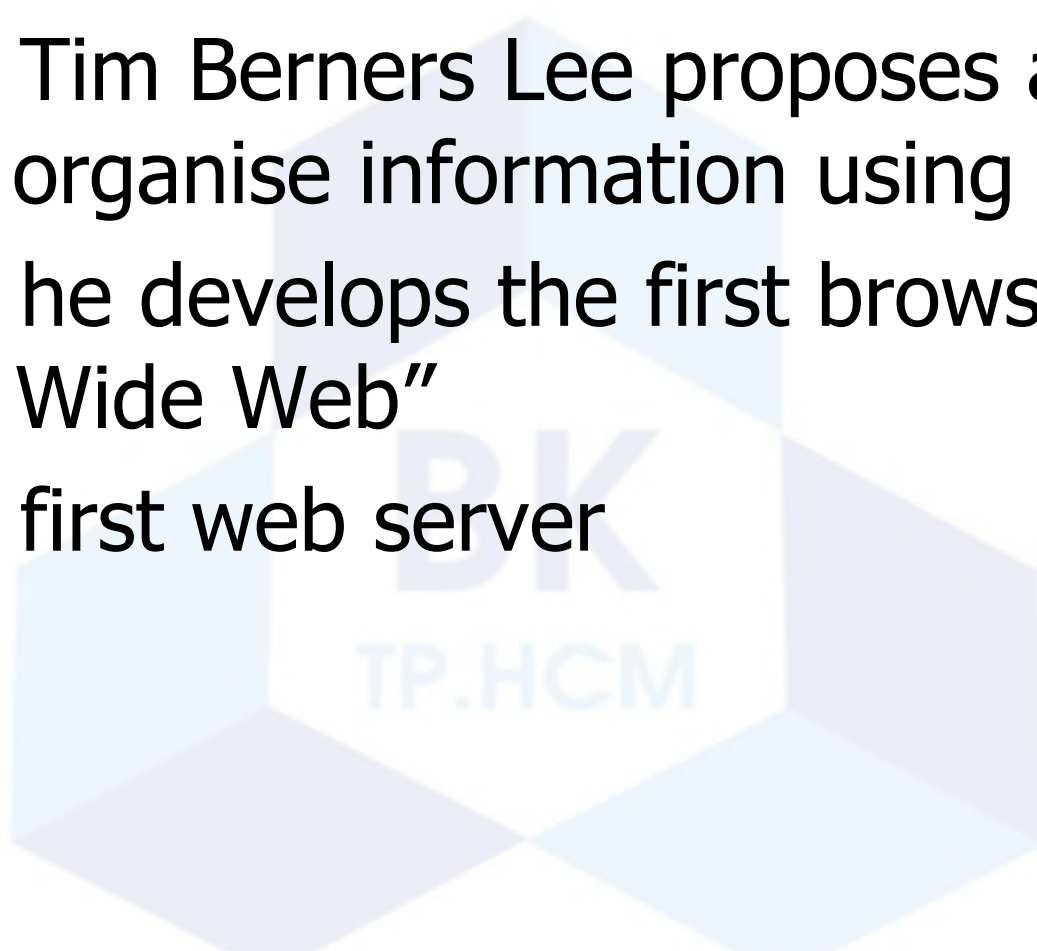


Before the Web

- Internet was already existing
- Resources on the internet were found using command line tools like FTP
- Example:
 - Run ftp program
 - Enter “C host” (connects to a server) – Enter username
 - Enter password
 - Ls (lists files)
 - Get file
 - Cd (change directory)
- There were no links
- You had to know where the information was

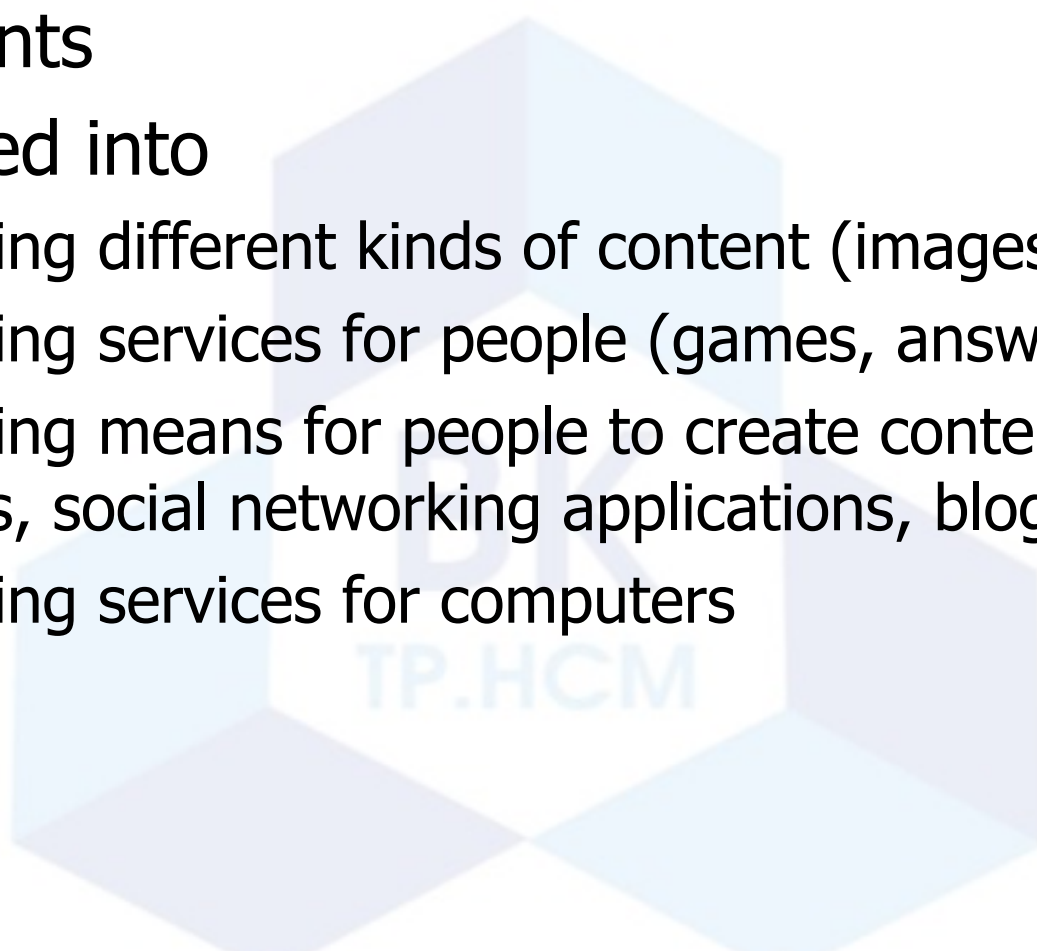
The Invention

- 1989 – Tim Berners Lee proposes at CERN a way to organise information using hyperlinks
- 1990 – he develops the first browser – “World Wide Web”
- 1991 – first web server



Conclusions

- World wide web was first a way to link text documents
- It evolved into
 - Providing different kinds of content (images, video)
 - providing services for people (games, answers, news)
 - Providing means for people to create content (wikis, forums, social networking applications, blogs)
 - Providing services for computers



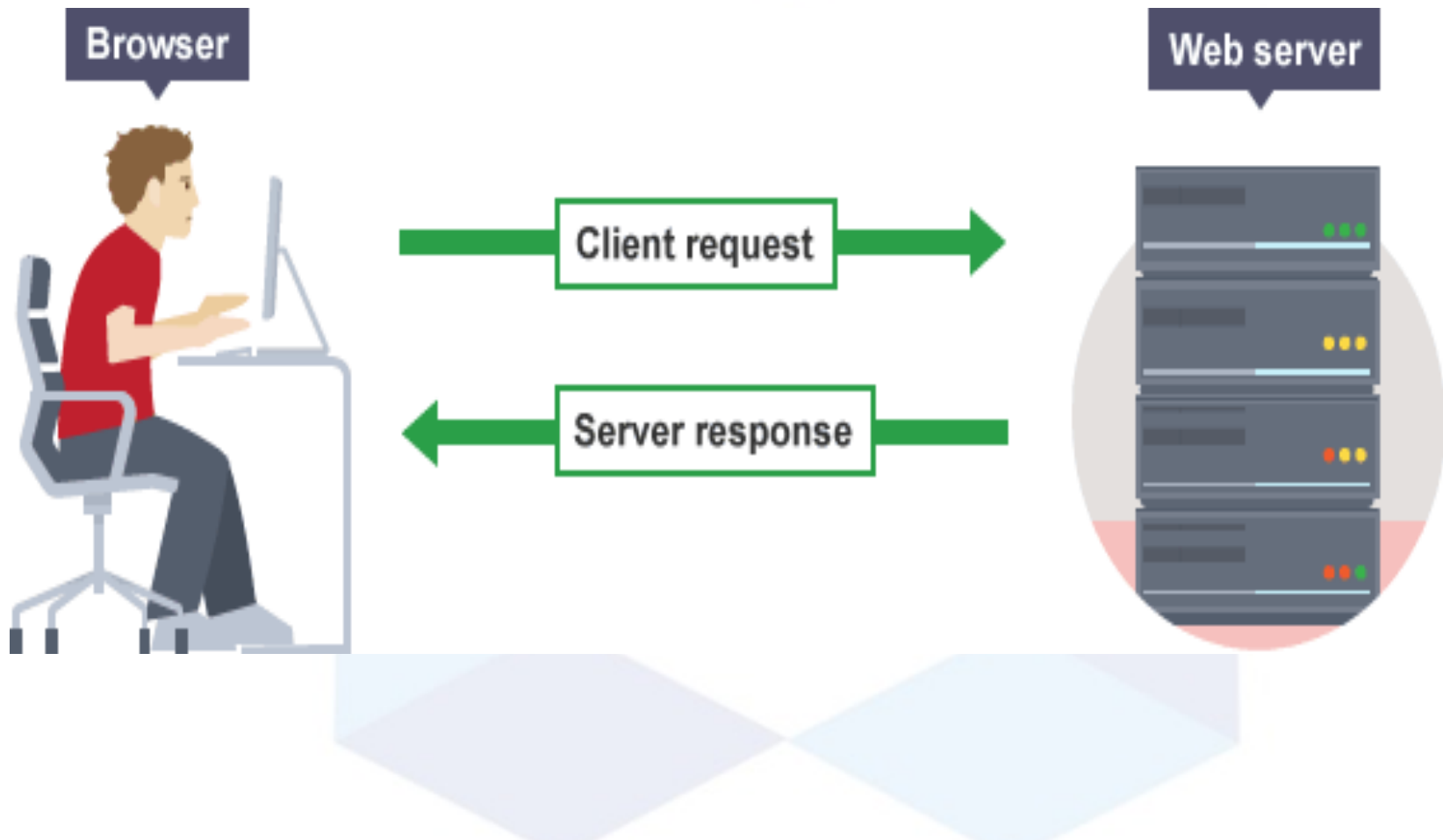
Conclusions

- The content was first static – text pages that were rarely changed and only by the owner
- Content became dynamic updated from the server's database
- Content became updated real time (without refreshing the page using asynchronous technologies)
- Content comes from different sources and it's aggregated on a page

How the web works

- The client-server model
- Client and server operate on machines which are able to communicate through a network
- The server waits for requests from a clients
- Server receives a requests from a client
 - Performs a the requested work
 - Or lookup the requested data
 - And send a response to the client
- Servers: file servers, web servers, name servers
- Clients: browsers, email clients

How the web works



URL format

- URL: Uniform Resource Locator
- `<scheme>://<server-domain-name>/<pathname>`
 - `<scheme>` which protocol to use
 - `http`: Hypertext Transfer Protocol
 - `file`: which tells the client document is in a local machine
 - `ftp`: file transfer protocol
 - `<server-domain-name>` identifies the server system
 - i.e. `hcmut.edu.vn`
 - `<pathname>` tells the server where to find the file
- `http://www.cse.hcmut.edu.vn/site/vi/Category`

Web browsers and servers

- **A browser:** is a program that can retrieve files from the world wide web and render text, images, or sounds encoded in the files.
 - i.e. IE, Google Chrome, FireFox, Opera, Safari,...
- **A web server:** is an application which waits for client requests, fetches requested documents from disk and transmits them the client.
 - i.e Apache, IIS, Nginx,...

What happened when you click on hyperlink?

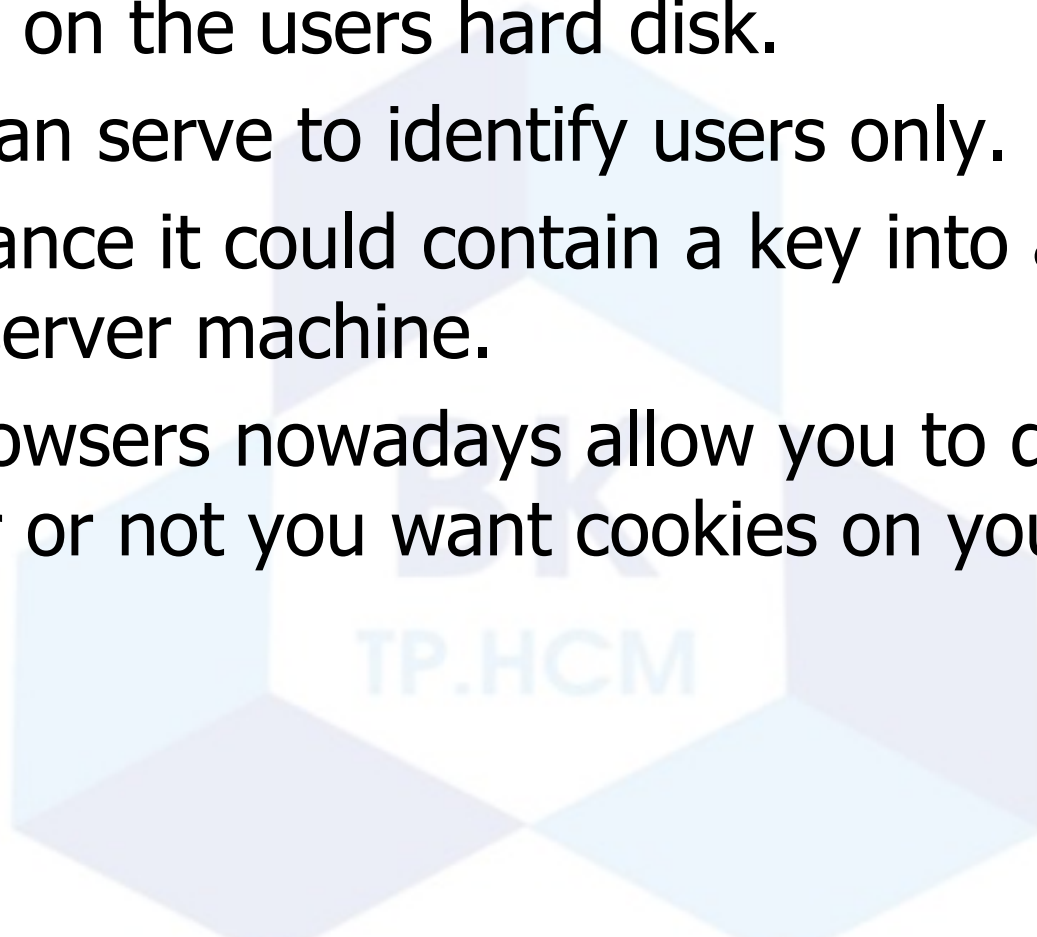
- Determine URL and extract domain name.
- Use the name server to get Internet Protocol (IP)address Domain Name System(DNS)
- Make a Transmission Control Protocol (TCP) connect to port 80
- And send a request for a web page once the server has accepted to connection.
- The server send the file and releases the TCP connection
- The client displays the document.

Stateless connection

- Both client and server release TCP connection after a page has been transferred.
- HTTP1.0 is stateless
 - Connections are not persistent
 - There is no indication to the server whether new transactions involve the same client
- HTTP 1.1 is persistent
 - By keeping track of the client IP addresses
 - However, there is no way of identifying a repeated visits to the site by the same user.
 - Furthermore, Internet Service Provider (ISP)s reallocate IP addresses to dial-up customers as new user dial in.

Cookies

- Request the browser to store a small data file (cookie) on the users hard disk.
- Which can serve to identify users only.
- For instance it could contain a key into a database on the server machine.
- Most browsers nowadays allow you to decide whether or not you want cookies on your machine.



W3C

- The World Wide Web Consortium (W3C) is an international community where Member organizations, a full-time staff, and the public work together to develop Web standards. Led by Web inventor Tim Berners-Lee and CEO Jeffrey Jaffe, W3C's mission is to lead the Web to its full potential.
- <http://www.w3.org/Consortium/>



Tài Liệu Tham Khảo

- [1] Stepp, Miller, Kirst. Web Programming Step by Step. (1st Edition, 2009) Companion Website:
<http://www.webstepbook.com/>
- [2] W3Schools,
<http://www.w3schools.com/html/default.asp>

