EE4717/IM4717 Web Application Design
Web Server Configuration

Lecturer :

Associate Professor CHONG Yong Kim
E-mail: eykchong@ntu.edu.sg
Tel: 67904535

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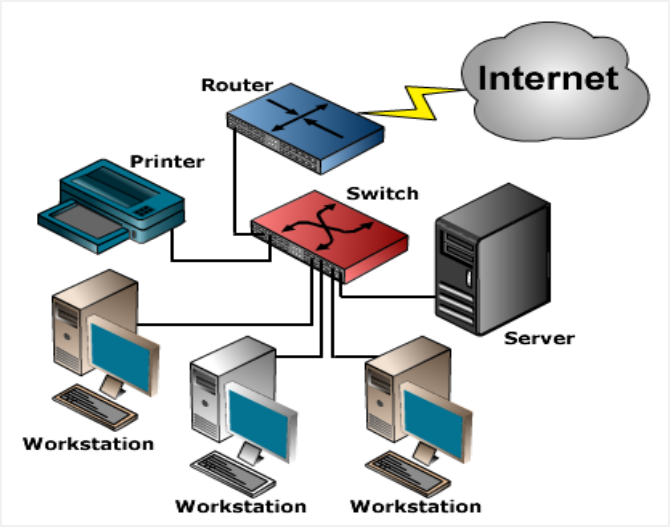
Background: The Internet and WWW

- Internet
  - Interconnected network of computer networks.
  - Network: two or more computers connected together for the purpose of communicating and sharing resources.
- WWW stands for World Wide Web
  - A graphical user interface to information stored on some of the computers connected to the Internet.



The Client/Server Model

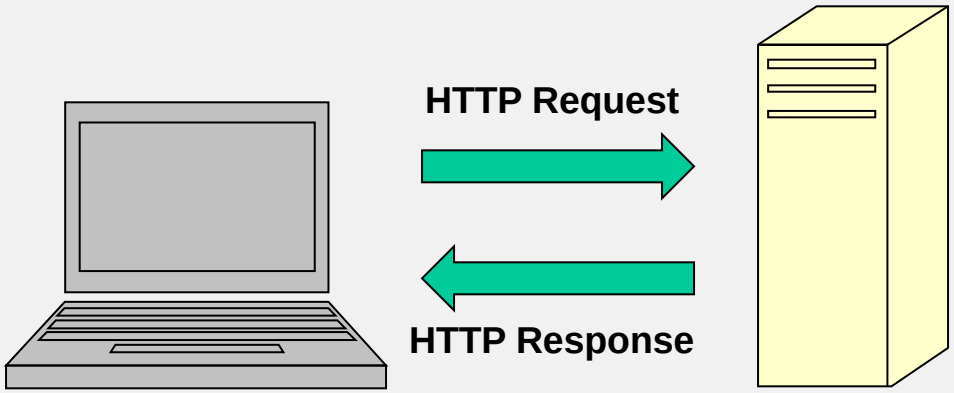
- Client
  - requests some type of service (such as a file or database access) from the server.
- Server
  - fulfills the request and transmits the results to the client over a network.
- The Internet Client/Server Model
  - Client: Web Browser
  - Server: Web Server

Internet Protocols

- There is no *single* protocol that makes the Internet and Web work. A number of protocols with specific functions are needed.
- Common Internet Protocols: TCP/IP
  - Transmission Control Protocol (TCP)
  - Internet Protocol (IP)
- Specialized Protocols:
  - File Transfer: FTP, SFTP
  - E-mail: SMTP, POP3, IMAP
  - Websites: HTTP (Hypertext Transfer Protocol)

HTTP - Hypertext Transfer Protocol

- A set of rules for exchanging files such as text, graphic images, sound, video, and other multimedia files on the Web.



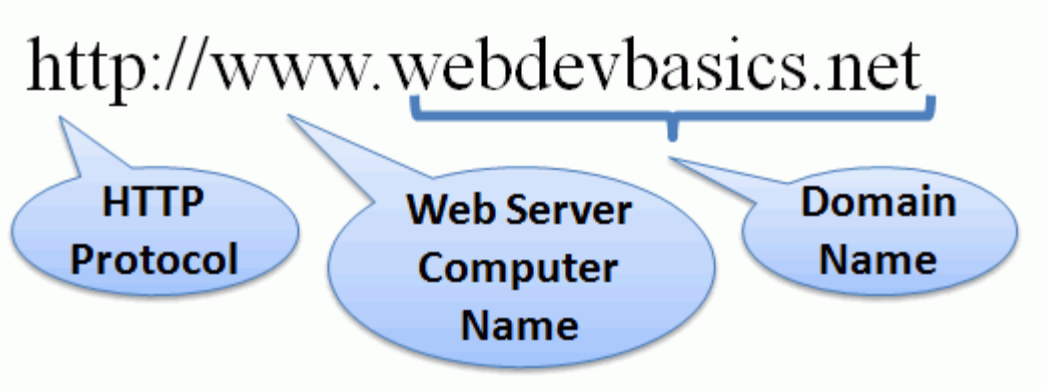
- Web browsers send HTTP requests for web pages and their associated files.
- Web servers send HTTP responses back to the web browsers.

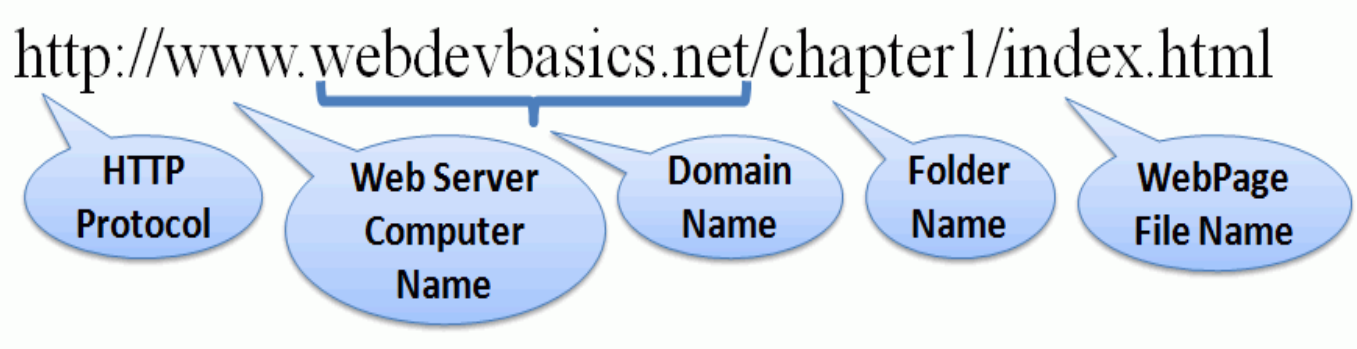
IP Address

- Each device connected to the Internet has a unique numeric IP address.
  - *Check the IP address assigned to your computer*
- An IP address may correspond to a domain name which locates an organization or other entity on the Internet**.**
- Try typing the following into your web browser:
  - Browser: http://www.ntu.edu.sg
  - IP Address: *155.69.6.163*
- Finding the IP address of web servers:
  - For Windows: open the command prompt window (Try it!)
  - For Mac : open the Terminal window (Try it!)
  - Type in the window: ping <servername>.
    Example: ping www.yahoo.com
    Note that you can see the IP address of the yahoo webserver.

URL - Uniform Resource Locator

- Represents the address of a resource on the Internet.





Setting up of Web Server for this course

- Every student is given a virtual machine. It runs in the VirtualBox.
- Steps to set up the virtual machine:
  1. Install VirtualBox: The lab computer has already been installed with VirtualBox. To install VirtualBox on your own computer, please watch this video (this is not compulsory).
  2. Import a pre-configured virtual machine: Watch this video.
  3. Export your virtual machine: What this video.
  4. Configure your web account: Watch this video.
  5. Trying out a few test pages: Watch this video.
- For students who wish to have the virtual machine running on their own computers. Please watch the following videos :
  - Windows user: you have seen how this is done through the above steps.
  - Mac user : Watch this video on YouTube. Then follow step 2.
  - Linux user : Watch this video on YouTube. Then follow step 2.
- Note that you are still required to use the virtual machine on the lab computer for the purpose of progress assessment and project demo.