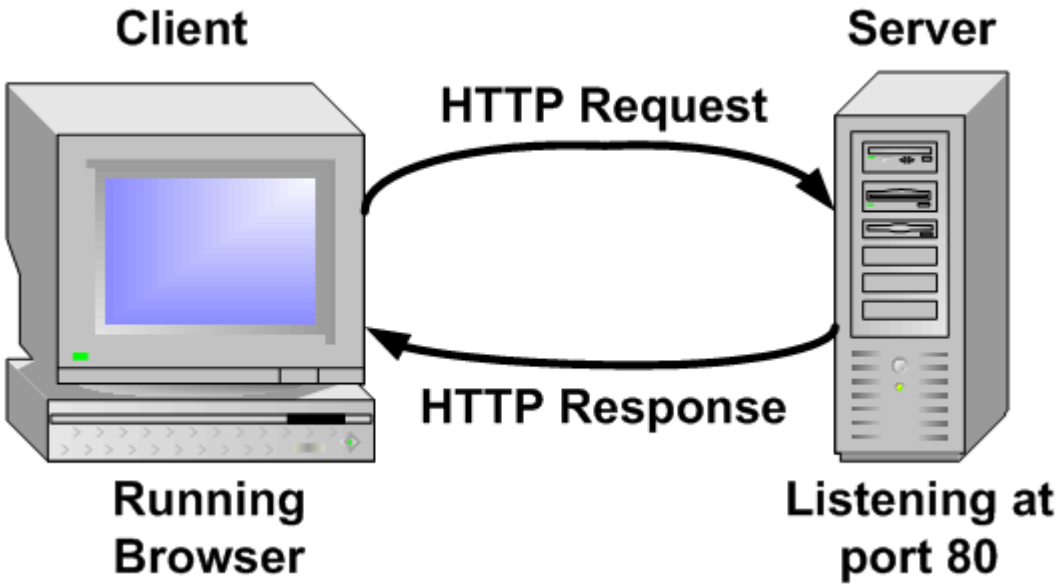
Web Programming - part 1

HTTP
HTML & CSS
Firebug

HTTP

- HTTP(Hyper Text Transfer Protocol), was implemented first by Tim Berners-Lee in CERN during the early 1990s.
- HTTP protocol works in a client and server model. A web browser, usually where a request is initiated, is called a ***client*** and web server software, which responds to that request, is called a ***server***.

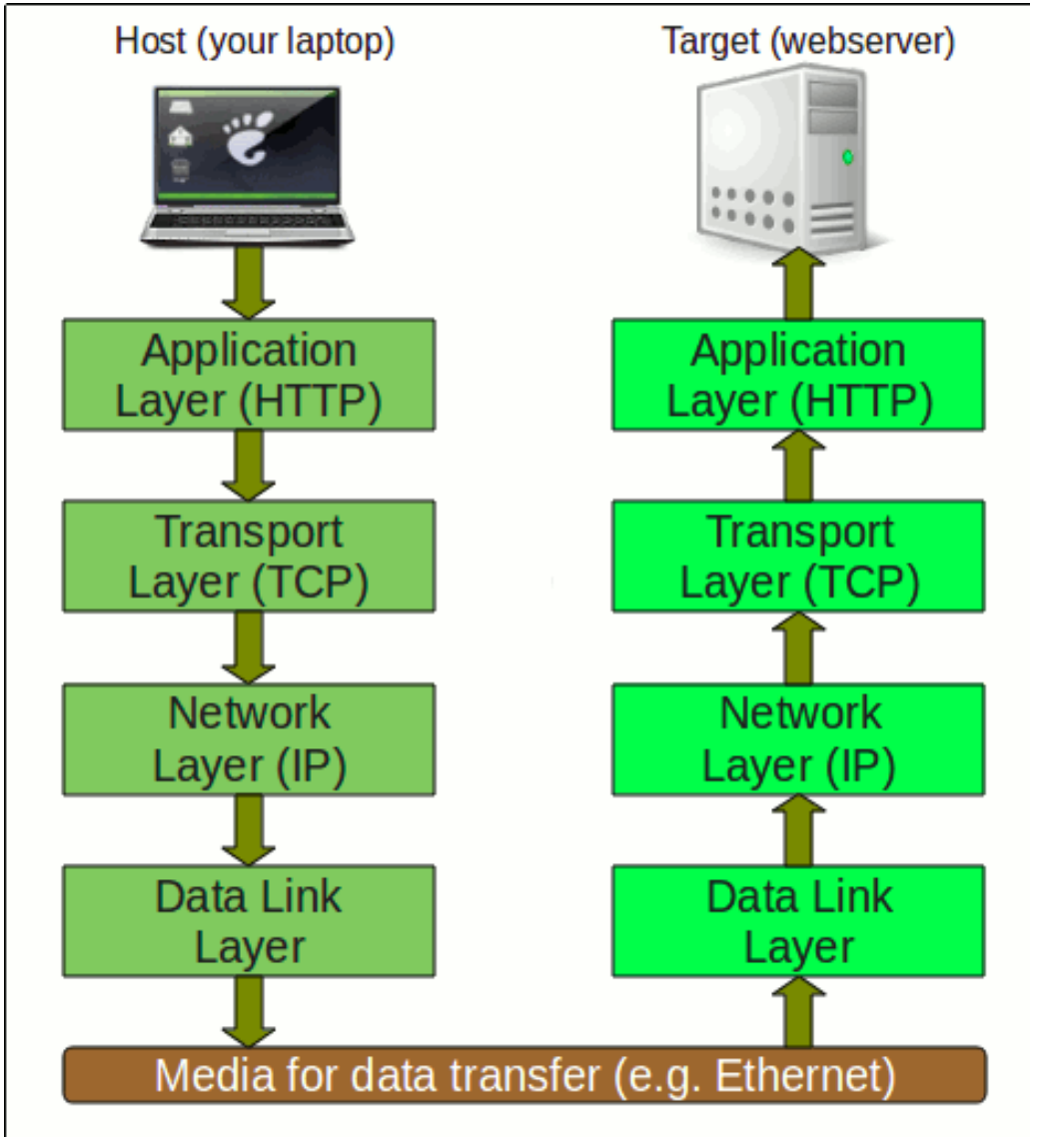


More on HTTP

- The Harvard way: cs50net
- cURL is a tool for transferring files and data with URL syntax, supporting many protocols including HTTP, FTP, TELNET and more
  - Try this: ***curl http://www.example.com***
  - Now try this ***curl --trace-ascii debugdump.txt http://www.example.com***
- A series of request and response in HTTP is a *session*
- HTTP is a stateless protocol (which means each and every connection is independant of each other.)

More on HTTP

The Step-byStep way



Firebug

- Firebug is a web development tool that integrates into the Firefox web browser (as an add-on). It allows you to inspect and edit html elements, CSS styles and layout, and debug and profile JavaScript, and analyze the network activity on web pages.

- There are two ways to get Firebug:
  - From within Firefox: in the Tools menu, select “Add-ons”, then in the “Get Add-ons” tab, search for “Firebug”. Click the “Install” button to proceed.
  - Go to http://getfirebug.com. Click the “Install Firebug” button; select a specific version to download.
- To start Firebug, press F12 within Firefox.
- To turn it off, click the power button at the top right of the Firebug panel.

Firebug tabs

- The main Firebug tabs are:
  - Console Tab: JavaScript console
    - Contains command line JavaScript.
    - Shows the JavaScript error message log.
    - Allows entering arbitrary JavaScript commands (after the >>> prompt at the bottom).
    - Includes tool for profiling JavaScript activity and memory consumption.
  - HTML Tab: Shows HTML
    - The right sub-panel displays CSS styles, computed styles, layout information and DOM variables for the currently selected tag.
  - CSS Tab: CSS inspector
    - Displays all loaded style sheets.
    - Allows modification of styles on the fly.
  - Script Tab: JavaScript debugging tool
    - Displays JavaScript files and the variable stack.
    - Set breakpoints and watch expressions.
    - Step through JavaScript code execution.
  - DOM Tab: Shows information about the page objects, properties and methods. As variables are properties of the window object, Firebug displays all JavaScript variables and their values.
  - Net Tab: Shows all the downloads, how long each resource took to download, the HTTP request headers and server response sent for each resource.
  - Cookies Tab: Display and manipulate cookies set by the current web page.

Resources

- Firebug screencast
- Joomla Firebug tutorial
- HTML Video
- HTML Lecture
- HTML quick reference
- CSS Video
- CSS Lecture
- CSS quick reference

Saving Edits in Firebug

- All HTML, CSS and JavaScript can be edited on the fly; edits take effect immediately.
  - NOTE: the original source page is **NOT** changed.
- To save changes:
  - I had no luck with Firediff and Fireformat, although they are available as plugins
  - Try
    - Right-click in a clear portion of the web page
    - Choose ***Select All*** from the pop-up menu
    - Right-click in the page again and choose ***View Selection Source***
    - Save the source to a file with the .html extension
    - Load the new page to make further edits
  - Use a similar procedure for the css files
    - Copy the contents from the CSS tab with ctrl-a, ctrl-c and paste into a file

In-class Exercise

- Download and unpack aboutMe.tar.gz
  - To unpack: ***tar xfvz aboutMe.tar.gz***
- Open aboutMe.html in the firefox browser
- Start Firebug and edit the contents of aboutMe.html so that it is really (at least somewhat) about **you**
- Make at least two changes to the associated CSS files
- Show me your modified web page