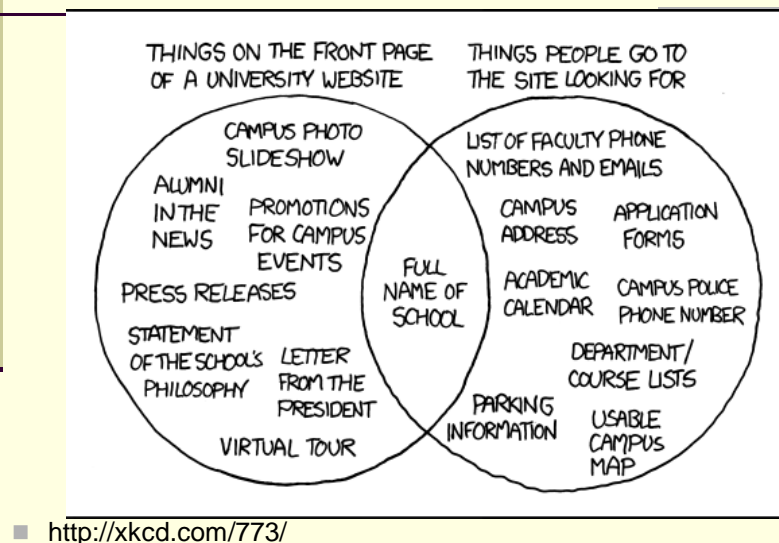# CIS 370

Server-Side Web Programming

Jon ODonnell   1

Site Organization

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CIS 270 Review

- Basic Development Environment
  - Firefox with firebug and web developer toolbar.
  - Notepad++
  - Page Validation Service
- Flash vs. Silverlight vs. HTML 5 Canvas vs. Java FX
- Publishing to cisprod.clarion.edu
- Working with Images
  - http://www.pixlr.com/ (general)
  - http://www4.flamingtext.com/# (logos)
  - http://www.rw-designer.com/online_icon_maker.php

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Multiple Device Sites

- Google White Paper – October, 2013
  - http://ssl.gstatic.com/think/docs/multi-screen-consumer-whitepaper_research-studies.pdf
- Prepare to Go Mobile
  - Screen Resolution, Bandwidth, GPS, Camera
- Chose the right technology
  - Responsive Web Design, Dynamic Serving, Separate Mobile Site
- Optimize a User Experience
  - Layout – screen width, font, touch-friendly, avoid mouse-overs
  - Content – check media files, don't overload users or hide key actions
  - Speed – image and file overloads
- Measure Your Success
  - Bounce Rates, Speed, Avg. Time on Page

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Responsive Web Design

■ A clever design technique that uses a single HTML code base for all platforms. (starbucks.com)

Pros:	Cons:	Common Mistakes:
• One URL for all content. • Flexible orientation. • No redirects.	• Holistic Approach Required.	• Data bloat.

■ Responsive vs. Adaptive vs. Fluid Design
  ■ http://www.hyperarts.com/blog/what-is-responsive-adaptive-and-fluid-design-defining-terms-in-a-multi-device-world/

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Dynamic Serving

■ The web server detects the type of device a visitor is using, and then presents a custom page designed just for that device. (cnn.com)

Pros:	Cons:	Common Mistakes:
• One URL for all content. • Custom User Experience. • Faster Loading.	• Content Forking.	• Faulty Device Detection • User Confusion

■ Dynamic serving is a resource-intensive solution for companies that make frequent changes to their website, and who often need to adjust display for one device.

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Separate Mobile Site

- Create a mobile site that's separate from your original desktop site. Your system detects mobile visitors and redirects them to your mobile-optimized site.
 - Often using a sub-domain like m.yourname.com).
  - homedepot.com

Pros:	Cons:	Common Mistakes:
• Customer User Experience. • Easier Changes.	• Multiple URLs. • Content Forking.	• Faulty Redirects. • Inconsistent User Experience

- Some businesses may want to use a different vendor for mobile, or may want a mobile structure that simply wouldn't be possible with RWD.

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Site Organization

- Organizing Code
  - Folders for css, images, js, data
  - Relative addressing
  - MVC organization

- Search Engine Optimization

- Navigation Examples
  - CBSSports
  - CNN
  - CUP
  - jQuery
  - NetBeans
  - newegg

controller
css
images
js
lib
model
view
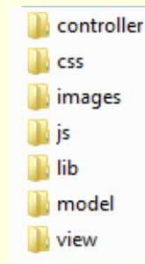
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HTML Basics

```
<!DOCTYPE html>
<html lang="en">
   <head>
       <meta charset="utf-8" />
       <title>This is the title </title>
       <link rel="stylesheet" href="../css/main.css" />
   </head>
   <body>
   </body>
</html>
```
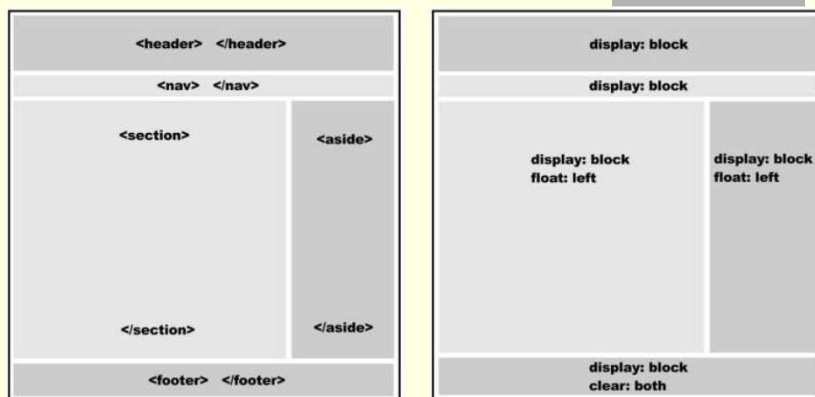
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HTML 5 and Box Layouts

`<header>  </header>`	
`<nav>  </nav>`	
`<section>`	`<aside>`
`</section>`	`</aside>`
`<footer>  </footer>`	

display: block	
display: block	
display: block float: left	display: block float: left
display: block clear: both	

■ **Backwards Compatibility with older browsers:**

- `<script src="http://html5shiv.googlecode.com/svn/trunk/html5.js"></script>`
- `header, section, footer, aside, nav, article, figure, figcaption, hgroup{`
  `display: block;  }`

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jQuery

- A fast, concise JavaScript library that simplifies HTML document traversing, event handling, animating, cross-browser compatibility and Ajax interactions for rapid web development.
  - Version 1.x vs 2.x
  - Minified vs. Development

- Loading Content with jQuery
```
$(document).ready(function() {
  // Set the nav to the contents of HorizontalMenu.html
  $('#mainNav').load('HorizontalMenu.html');
});
```

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XAMPP Install

- Download from http://sourceforge.net/projects/xampp/files

- Run the xampp-control.exe file.
- Start Apache
- Go to http://localhost/
- Default home page provided.
- Web Site Home Directory:
  - C:\xampp\htdocs

- NetBeans PHP Version
- http://netbeans.org/downloads

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Simple Web Request

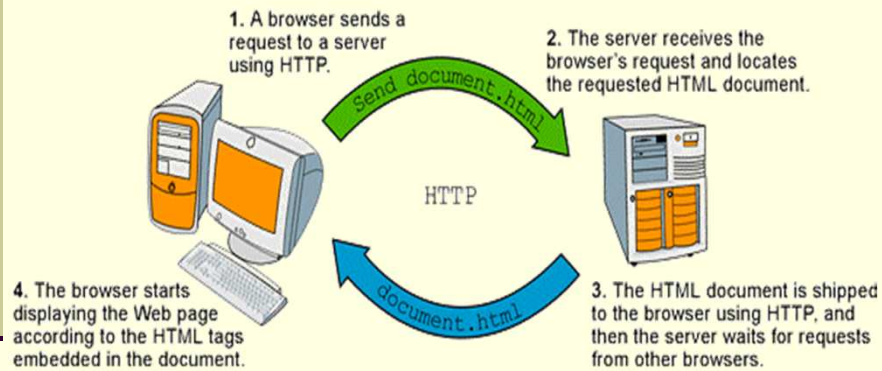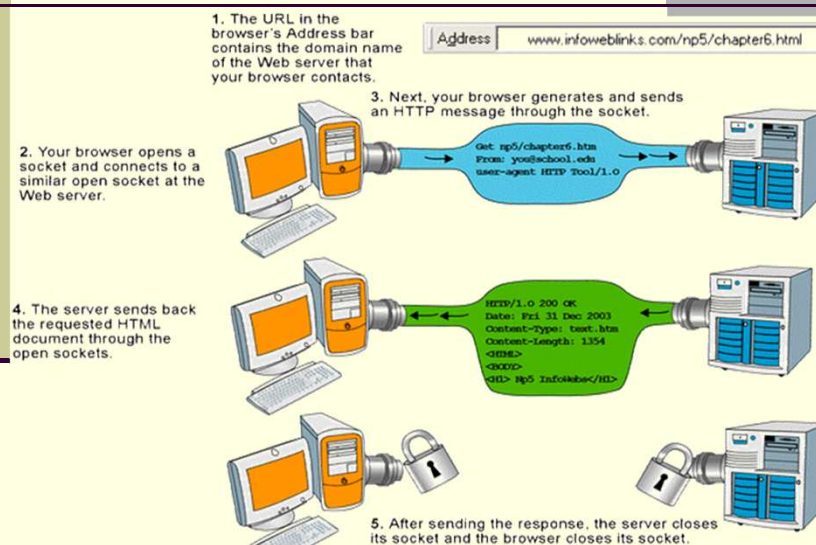1. A browser sends a request to a server using HTTP.

2. The server receives the browser's request and locates the requested HTML document.

4. The browser starts displaying the Web page according to the HTML tags embedded in the document.

3. The HTML document is shipped to the browser using HTTP, and then the server waits for requests from other browsers.

HTTP

send document.html

document.html

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HTTP 1.0 Interaction

1. The URL in the browser's Address bar contains the domain name of the Web server that your browser contacts.

Address   www.infoweblinks.com/np5/chapter6.html

3. Next, your browser generates and sends an HTTP message through the socket.

2. Your browser opens a socket and connects to a similar open socket at the Web server.

Get np5/chapter6.htm
From: you@school.edu
user-agent HTTP Tool/1.0

4. The server sends back the requested HTML document through the open sockets.

HTTP/1.0 200 OK
Date: Fri 31 Dec 2003
Content-Type: text.htm
Content-Length: 1354
<HTML>
<BODY>
<H1> Np5 InfoWebs</H1>

5. After sending the response, the server closes its socket and the browser closes its socket.

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HTTP 1.1 Interaction

Client request

```
GET /index.html HTTP/1.1
Host: www.example.com
```

Server response

```
HTTP/1.1 200 OK
Date: Mon, 23 Jan 2014 22:38:34 GMT
Server: Apache/1.3.3.7 (Linux)
Last-Modified: Wed, 08 Jan 2014
ETag: "3f80f-1b6-3e1cb03b"
Content-Type: text/html
Content-Length: 131
Accept-Ranges: bytes
Connection: close
```

HTTP Status Codes
- Informational 1XX
- Successful 2XX
- Redirection 3XX
- Client Error 4XX
- Server Error 5XX

```
<html>
<head>
  <title>The Title</title>
</head>
<body>
  Hello World.
</body>
</html>
```

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