

Introduction to Web Development

Code: COMP07009

Credit: 20 points

Staff Contact Details

Module Coordinator

- Frances McCormick
- Based at Hamilton Campus, staff room - A326
- Email: frances.mccormick@uws.ac.uk
- Telephone: 01698-283100 x8312

This module is delivered across ALL campuses so please contact YOUR lecturer at YOUR campus with any queries in the first instance.

Other Campuses

- Ayr Campus
 - Henry Hunter, henry.hunter@uws.ac.uk
- Dumfries Campus
 - Rebecca Redden, rebecca.redden@uws.ac.uk
 - Sandra Marshall, sandra.marshall@uws.ac.uk
- Paisley Campus
 - Graeme McRobbie, graeme.mcrobbie@uws.ac.uk
 - Mark Davison, mark.davison@uws.ac.uk

Overview of Module

- The aim of the module is to enable you to understand how the world wide web evolved and has developed over the years as well as look at current technologies used in web development.
- The module will use a mark-up language such as HTML5 for presenting content for a web page and CSS such as CSS3 to control the style and layout of web pages.

Overview of Module

- There will be discussion on design, navigation and accessibility as well as the use of validators for mark-up and styling.
- There will also be some discussion on client-server architecture, web servers and hosting sites and an introduction to other features such as search engine optimisation and Javascript.

Learning Outcomes

At the end of the module, you will be able to:

- L1. Demonstrate awareness of the principles of web development;
- L2. Demonstrate a knowledge and understanding of contemporary techniques for web page creation;
- L3. Develop and upload a web site using a defined range of technologies and fulfilling specific design criteria.

Assessment

- The module is 100% coursework with two assessments.
- Both are based on an assessment theme.
- Assessment 1
 - worth 30%
 - due in by 23.59pm, Friday of week 6
- Assessment 2
 - worth 70%
 - due in by 23.59pm, Friday of week 12

Assessment Theme

- **London Olympics 2012**
- For example, this could range from the countries which take part, the athletes, the various sporting activities, venues, results and/or something else relevant to the theme. You can use various sporting activities or you can focus on a specific sport in more detail.

Assessment 1

- Create an index page with links to other pages with information on how you plan to do the second assessment.
- This will include:
 - Introduction
 - Design/Usability
 - Navigation/Accessibility
 - Markup
 - HTML5 code

Assessment 2

- Develop a web site:
 - HTML5
 - Styling
 - CSS
 - Validation
 - Javascript
 - Other features

Submission of Assessments

- Both assessments must be uploaded onto a UWS server (media.uws.ac.uk)
- All students will be given a unique account for uploading the assessments.
- Lecturers will provide you with these details.
- A penalty of 10% will be applied to an assessment which is submitted late, up to 1 week after the submission deadline. Thereafter the submission will be noted but will not be marked.

Client-Server Architecture

- All of the machines on the Internet are either servers or clients.
- The machines that provide services (like Web servers or FTP servers) to other machines are servers.
- And the machines that are used to connect to those services are clients.
- A machine may be a client and a server.

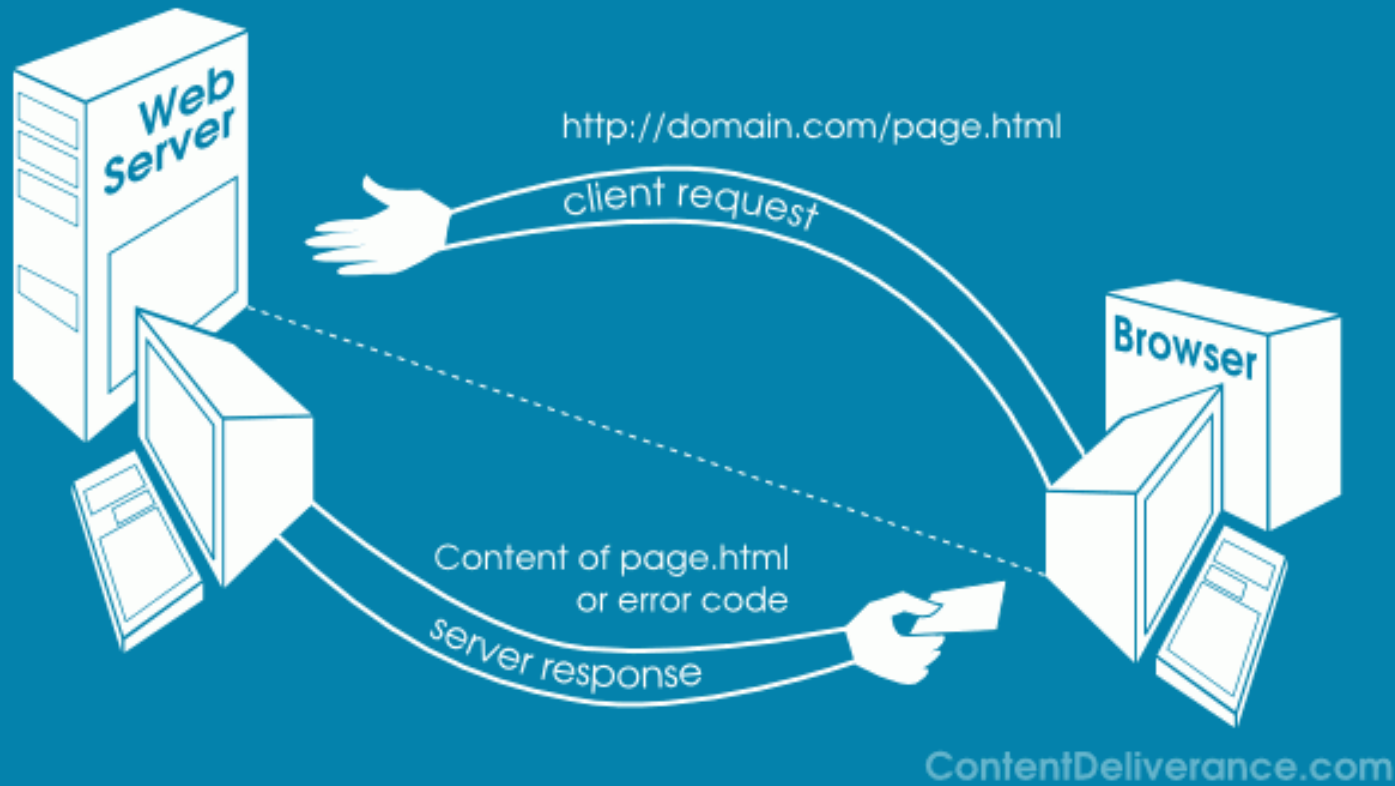
Request/Response

- There are Web servers, e-mail servers, FTP servers and so on serving the needs of Internet users all over the world.
- When you connect to www.uws.ac.uk to request a page, you are a user sitting at a client's machine.
- You are accessing the University Web server.
- The server machine finds the page you requested and sends it to you.

Request/Response

- Clients that come to a server machine do so with a specific intent, so clients direct their requests to a specific software server running on the server machine.
- For example, if you are running a Web browser on your machine, it will want to talk to the Web server on the server machine, not the email server.

Client-Server Architecture of the Internet



Web Servers

- The collection of web pages is called a web site.
- The web site must be published to enable others view the web pages.
- The site needs to be copied (uploaded) to a web server to publish the work.
- A PC can act as a web server if it is connected to a network.

ISP

- Internet Service Provider
- Allows connection to a network
- An ISP provides Internet services
- A common Internet service is web hosting
- Storing your web site on a public server

Web Hosting

- A web hosting service is a type of Internet hosting service that allows individuals and organizations to make their website accessible via the World Wide Web.
- Web hosts are companies that provide space on a server owned or leased for use by clients, as well as providing Internet connectivity, typically in a data center.

Web Hosting

- Personal web site hosting typically free, advertisement-sponsored or inexpensive.
- Business web site hosting often expensive.
- Normally includes email services
- Often includes domain name registration
- If choosing domain name:
 - Short, meaningful, clear

Web Host Services

- Space
- Reliability
- Uptime
- Cost
- Backup
- Bandwidth or content restriction
- Traffic

Examples

- www.000webhost.com
- www.freevirtualservers.com
- www.free-webhosts.com

Different Webs

- Web 1.0
- Web 2.0
- Web 3.0
- The Future!!

Web 1.0

- 1st generation of WWW, created by Tim Berners Lee
- One-way communication
- Static, Read-only era
- Millions of web sites mushroomed during .com boom
- Use of framesets and tables to position and align elements on a page

Internet vs WWW

Internet

- Massive network of networks
- Networking structure
- Connects millions of computers together globally

WWW

- Simply the Web
- Way of accessing information over the medium of the Internet

Web 2.0

- 2nd generation WWW
- Platform for information sharing
- Interactivity and contributions from users
- Dynamic, user generated content
- Introduction of social networking sites
- Eg blogs/wikis

Web 3.0

- Still evolving
- Some definitions vary
- Intelligent Web
- Web Semantics
- Tailor made searches
- Deductive reasoning

Comparisons

- Web 1.0
 - Unidirectional, “push”
 - Eg traditional brochure style web sites
- Web 2.0
 - Interactive, “push” + “pull”
 - Eg social web sites like wikis, Facebook
- Web 3.0
 - Semantic web, immersive

IDEs for Markup

- HTML text editor to produce web pages
- Code-based or WYSIWYG
- Able to validate HTML is standards-compliant
- Support meta-tags
- Preview the page in different browsers
- Tabbed editing allows work on multiple pages
- An included FTP client is a bonus
- Commercial/Free

Examples of Editors

- Notepad++
- KompoZer
- Visual Studio
- HTML Kit
- WebStorm
- Blue Griffon

FTP

- File Transfer Protocol
- Simplest way to transfer files between computers, usually across the Internet
- Two components are needed:
 - FTP server listens for incoming connections on TCP port 21
 - FTP client connects to the server, authenticates and is able to copy file to and from the server
 - ie. Uploading from client to server and downloading from server to client

Examples of FTPs

- Built into the HTML editor
- Add-on for browser
- FTP Explorer
- cuteFTP
- FileZilla
- smartFTP

Useful Websites

- *w3schools*
 - <http://www.w3schools.com>
- *CSS3*
 - <http://www.w3schools.com/css3/>
- *Validating web pages*
 - <http://validator.w3.org/>
- *HowStuffWorks*
 - <http://howstuffworks.com>
- *Poor websites*
 - <http://www.topdesignmag.com/20-examples-of-bad-web-design/>
 - <http://www.webpagesthatsuck.com>

Components of a successful Website

