

Web Development I

Instructor Information

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Course objectives

- Understand how to create Web sites.
- Understand how to use **HTML editors**.
- Understand about HTML (Hyper Text Markup Language).
- Understand about CSS (Cascading Style Sheets).
- Work as a team member with other students on assignments and a term **project**.

The Internet vs. WWW

- The **Internet** is a global system of interconnected networks that exchange data.
- Whereas the physical networks make up the Internet, the publicly available documents hosted on these networks make up the **World Wide Web**.

World Wide Web

- The World Wide Web is a set of interlinked documents, images and other resources, linked by hyperlinks.
 - Hyperlinks are references to other pieces of information.
- We can access files stored on the web using the **Hypertext Transfer Protocol (HTTP)**.

HTTP

- HTTP is the most widely used communication protocols on the Internet
- Its use for retrieving inter-linked text documents (hypertext).
- It behaves in a **client-server** fashion.

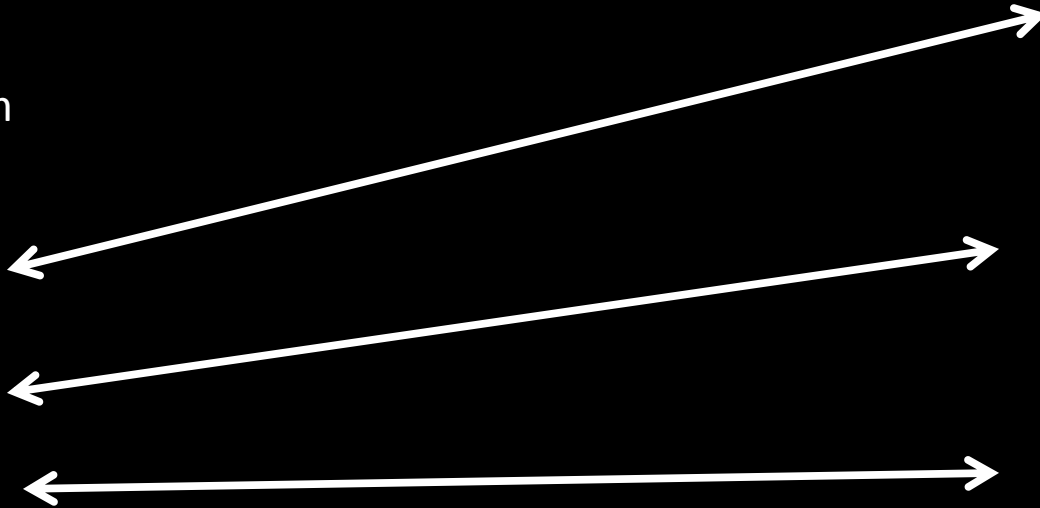
Client Server Model

- In the client-server model there are 2 types of systems, **client systems** from **server systems**.
- A client system is designed to send requests to the server and process any results the server sends to the client.
- A server system (particularly web server) is designed to take requests from various clients.
- Client: Send Request, Receive Reply
- Server: Receive Request, Send Reply

Server :
www.google.com



Clients





HTTP Requests

- HTTP Requests are very complex pieces of code, they contain:
 - The file your trying to get and its location.
 - Your computer address so the server knows where to return the file
 - Extra information for the server
 - login information
- Every time we request something from the server we need this information, so we should find a way to automate it.

Browser

- Browsers help users by supplying all the information needed to the server, as well as displaying the result if it understands it.
- All the browser needs is the location of the file.

User types in
google.com

Browser appends extra information and
sends to server

<http://www.google.com/>



<http://www.google.com/index.html>

Server sees request for a directory, returns
Web Server directory index page

Web Server Directory Index

- When an HTTP client requests a URL that points to a directory. The index page is returned.
- In particular the actual default index is setup by the server, but if unchanged is usually `index.html`.

HTML Hypertext Markup Language

- If the file requested is recognized by the browser it will attempt to display the file.
- Different browsers will recognize different files, however all web browsers will be able to recognize **HTML documents (web pages)**
- HTML documents are text documents that end in the extension .html

HTML Structure

```
<html>
```

```
  <head>
```

```
    <title>Hello HTML</title>
```

```
  </head>
```

```
  <body>
```

```
    <p>Hello World!</p>
```

```
  </body>
```

```
</html>
```

HTML Syntax

- HTML is comprised of tags/entities to structure data.
- Tags can be opening or closing.
- All tags except `<!DOCTYPE>` need to be opened and closed.
- An opening tag is comprised of:
 1. An opening angle bracket
 2. A Keyword
 3. 0 or more attribute value pairs (discussed later)
 4. A Closing angle bracket
- A closing tag is comprised of:
 1. An opening angle bracket and a slash
 2. a keyword
 3. Closing angle bracket

Self Closing Tags

- Tags that do not need internal data and thus have no need for an opening and closing tag such tags, are self closing.
- Examples of this include:
 - Break Lines (Next Line) `
`
 - Horizontal Rules (Lines) `<hr />`
 - Images ``
- An self closing tag is comprised of:
 1. Opening angle bracket
 2. Keyword
 3. 0 or more attribute value pairs (discussed later)
 4. A Slash and a Closing angle bracket

HTML Semantics

- Every thing between the opening and closing tag is considered nested inside of it. **All of the formatting from one nest cascades down to the next.**
- For instance:
 - A <p> tag denotes a paragraph.
 - A tag denotes emphasis by bolding
- A piece of code like the following:
 - <p>Hello World</p>
- Would display a paragraph Hello World, with Hello emphasized.

DOCTYPES

```
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.1//EN"  
  "http://www.w3.org/TR/xhtml11/DTD/xhtml11.dtd">
```

- Doctypes are complex pieces of HTML so don't memorize them. You can always just look up the syntax.
- HTML since its creation has had several revisions. A page created for an older HTML specification may look different if the doctype is not specified.
- **Doctypes specify which version of HTML this web page uses. HTML is interpreted by the browser according to its version.**
- The doctype in this sense is simple, it's almost always the same piece of code.

DOCTYPES

Version	DTD list	DOCTYPE Declaration in documents
HTML 2.0	DTD	<code><!DOCTYPE html PUBLIC "-//IETF//DTD HTML 2.0//EN"></code>
HTML 3.2	DTD	<code><!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 3.2 Final//EN"></code>
HTML 4.01	Strict , Transitional , Frameset	<code><!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 4.01//EN"</code> <code> "http://www.w3.org/TR/html4/strict.dtd"></code> <code><!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 4.01 Transitional//EN"</code> <code> "http://www.w3.org/TR/html4/loose.dtd"></code> <code><!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 4.01 Frameset//EN"</code> <code> "http://www.w3.org/TR/html4/frameset.dtd"></code>
XHTML 1.0	Strict , Transitional , Frameset	<code><!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Strict//EN"</code> <code> "http://www.w3.org/TR/xhtml1/DTD/xhtml1-strict.dtd"></code> <code><!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN"</code> <code> "http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd"></code> <code><!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Frameset//EN"</code> <code> "http://www.w3.org/TR/xhtml1/DTD/xhtml1-frameset.dtd"></code>
XHTML 1.1	DTD	<code><!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.1//EN"</code> <code> "http://www.w3.org/TR/xhtml11/DTD/xhtml11.dtd"></code>

XHTML vs. HTML

- HTML is an application of SGML. (Standard Generalized Markup Language)
 - SGML exchanges precision and speed for syntax tolerance.
- XHTML's is an application of XML (Extended markup Language)
 - XML is syntax strict. Pages may not render if the code is incorrect. Because of this XML code always has the exact meaning to all browsers and will render faster than SGML based code.