

HTML Basics

CS 115 Computing for the Socio-Techno Web

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HTML

- Hypertext Markup Language (HTML)
 - Hypertext → Electronic text with [hyperlink](#) references
 - Markup → Like a print editor marking a page with format notes (e.g., bold)
 - Language → Set of instructions that can be translated to a machine
- Language used to define web pages
- Server sends HTML to the browser
- Browser reads HTML and renders the page
 - May require downloading data from server (e.g., images)
- Right click on a webpage and select “View Page Source” to see the HTML

HTTP

- Hypertext Transfer Protocol (HTTP)
 - Protocol that defines how user agents (e.g., browser) and a web server can communicate
- HTTP is a request/response protocol between clients and servers
- Some methods (operations) defined as part of the protocol
 - GET → Download a resource (e.g., image, web page).
 - HEAD → Returns only the header
 - POST → Submits data (e.g., form data) to the server
- Do not confuse with HTML

Creating web pages with HTML

- HTML Standard
 - Developed by the World Wide Web Consortium (W3C)
 - <http://www.w3.org>
- Document is described through a series of commands and directives in a text file
- When interpreted by an HTML viewer, those commands determine the appearance of the page
- HTML documents are entirely ASCII text
- Commands are explicitly inserted

Three languages working together

- We will learn to make webpages using three languages that fulfill different roles
- HTML → Defines content and structure
- Cascading Style Sheets (CSS) → Defines appearance
- JavaScript (JS) → Defines behavior

Some HTML resources

- Tutorial site and reference for HTML, CSS, and JavaScript
 - <http://www.w3schools.com/>
- HTML Cheat Sheet
 - <https://html.com/wp-content/uploads/html-cheat-sheet.pdf>
- HTML Validation
 - <http://validator.w3.org/>

HTML tags

- Specify a command or directive
- Surround content and apply meaning to that content
 - `<title>`This is the document title`</title>`
- General format → `<elementName attributes>`
- Most HTML elements have two tags (start tag and end tag)
 - `<h1>` text `</h1>`

Two main parts of HTML document

- **Head** → provides all the information and resources needed by the browser to render the page
 - Does not generate displayed contents
- **Body** → Content of the page

Basic HTML Structure

- `<head></head>` and `<body></body>` tags **nested** in `<html></html>` tags
- General form with indentation for readability:

```
<html>
```

```
  <head>
```

```
    Information for browser...
```

```
  </head>
```

```
  <body>
```

```
    Content of page...
```

```
  </body>
```

```
</html>
```

Example of minimum HTML

- **Example file** → basic-page.html
- Let's validate our document
- Let's introduce an error and try validation

Attributes in HTML tags

- **Attribute** → Extends or modifies a tag
 - Only appears in the **start tag**
 - Can have several attributes in one tag separated by spaces
 - Order is immaterial
 - Some take values specified after an =
 - Example → `<html lang="en"> </html>`
- General format of a tag with value assigned to attribute
 - `<ELEM ATTR="attrValue">Displayed Text</ELEM>`
- A single = symbol is often used for assignment in programming
 - "X = 7" means "assign the value of 7 to X"

Elements in the <head>

- `<head>` tag may include lang attribute to define the human language
 - `<html lang="en">`
- `<title>Your Page Title</title>`
 - Required
 - Search engines depend on it
 - Provides a meaningful name as it is bookmarked
- Other tags we'll learn more about later
 - `<meta>` → Document's metadata (e.g., keywords, encoding, etc.)
 - `<link>` → Specifies relationship between document and resource
 - `<style>` → One way to define CSS style in the document
 - `<script>` → To declare or load JavaScript

Nested tags and spaces

- Nested tags are possible but don't overlap sets of them
- Incorrect → `Message`
- Correct → `Message`
 - Resulting output: ***Message***
- Browser Processing
 - Multiple spaces are converted to one space.
 - Line returns are ignored
 - Just like
 this
 - Just like this
 - Verbatim tags → `<pre>Spaces in here are NOT ignored</pre>`

Some common tags

- Headings → `<h1>`biggest heading`</h1>` to `<h6>`smallest heading`</h6>`
- Emphasis
 - ``text here`` → Text usually rendered in italics
 - ``text here`` → Text usually rendered in bold
- Line Breaks → `
`
- Paragraph → `<p>`paragraph text here`</p>`
- Subscript → `_{`text here`}`
- Superscript → `^{`text here`}`
- Quotations → `<q>`quote here`</q>`
- **Example file** → common-tags.html

Comments

- Represented by `<!-- -->`
 - Note that's two sets of double -
- We can use comments to disable HTML
- `<!--This text will not appear-->`
- `<!--We can leave comments to describe our code-->`

Software for the course

- Chrome web browser
 - Web page performance can differ with browsers
 - Assignments will be graded based on Chrome performance
- Atom text editor
 - You may use any text editor you like
 - This is the one TAs will support
- Cyberduck file transfer
 - It is free, but you can also buy/donate
 - Use others if you like (e.g., fetch)
 - This is the one TAs will support

Reminders

- Check the webpage calendar to prepare for classes
- Get a CS 115 account
- Install Cyberduck
- Install Atom
- Submit Assignment 0 ASAP
- Reading and social implications for Thursday