

CS 146: Intro to Web Programming and Project Development

Instructor: Iraklis Tsekourakis

Lieb 213

Email: itsekour@stevens.edu



Introduction to HTML5

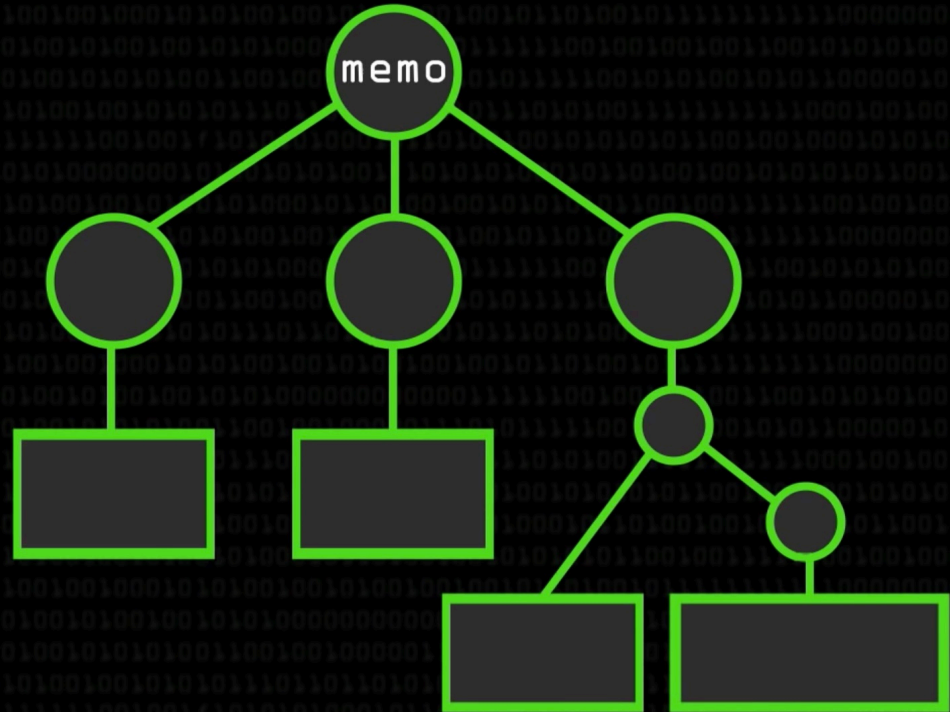


What is HTML?

- HyperText Markup Language
- It is based on the use of tags to format content as in all other markup languages,
 - SGML – Standard Generalized Markup Language (1986)
 - XML – eXtensible Markup Language (1998)
 - XHTML - eXtensible HyperText Markup Language (2000)
- *A standardized system for tagging text files to achieve font, color, graphic, and hyperlink effects on World Wide Web pages*

Memorandum example of SGML

to
Tony Blair
from
The White House
message
The President says,
"Thanks for your support!"





SGML example

```
<MEMO>
<TO> Tony Blair </TO>
<FROM> The White House </FROM>
<BODY>
<P> The President says,
<Q> "Thank you for your support!" </Q>
</P>
</MEMO>
```

**



HTML history

- 1989 – Tim Berners-Lee invented www
- 1991 – Tim Berners-Lee invented HTML
- 1995 – HTML Working Group defined HTML 2.0
- 1997 – W3C Recommendation: HTML 3.2
- 1999 – W3C Recommendation: HTML 4.01
- 2000 – W3C Recommendation: XHTML 1.0
- 2014 – W3C Recommendation: HTML5 (finally)
- 2016 – W3C Recommendation: HTML 5.1

HTML5



- HTML5 is the most recent standard
- The specification was finalized and published on October 28th 2014 by the World Wide Web Consortium (W3C), but the first draft was created in 2008
- Most browsers already support a large portion of the new tags that have been created
- Improves the language with support for the latest multimedia while keeping it easily readable by humans and consistently understood by computers and devices
 - Streaming HD videos
 - Mobile devices (vector graphics)



Should we still learn HTML 4?

- While it would be easier to learn a mature standard (and necessary for supporting old web sites), you might as well learn the current standard
- It will prevent you from using features that have been removed, like frames
- There are exciting new features in HTML5 worth learning:
 - `<canvas>`, `<audio>`, `<video>` elements
 - SVG
 - MathML



HTML5: Let's begin!

Every HTML5 page should have the same skeleton:

```
<!DOCTYPE html>
<html>
<head>
  <title>Page Title</title>
</head>
<body>
  <h1>My First Heading</h1>
  <p>My first paragraph.</p>
</body>
</html>
```



Example Explained..

- The `<!DOCTYPE html>` declaration defines this document to be HTML5
- The `<html>` element is the root element of an HTML page
- The `<head>` element contains meta information about the document
- The `<title>` element specifies a title for the document
- The `<body>` element contains the visible page content
- The `<h1>` element defines a large heading
- The `<p>` element defines a paragraph



Formatting your Content

- After getting the basic elements in place, the next thing to do is decide how to organize your page
- For now we will constrain ourselves to have good structure in our code
- Styling will come later with the use of CSS3
- HTML5 introduces meaningful tags to explain portions of your page



HTML Tags

- HTML tags are element names surrounded by angle brackets
 - `<tagname>Content..</tagname>`
- HTML tags normally come **in pairs** like `<p>` and `</p>`
- The first tag in a pair is the **start tag**, the second tag is the **end tag**
- The end tag is written like the start tag, but with a **forward slash** inserted before the tag name



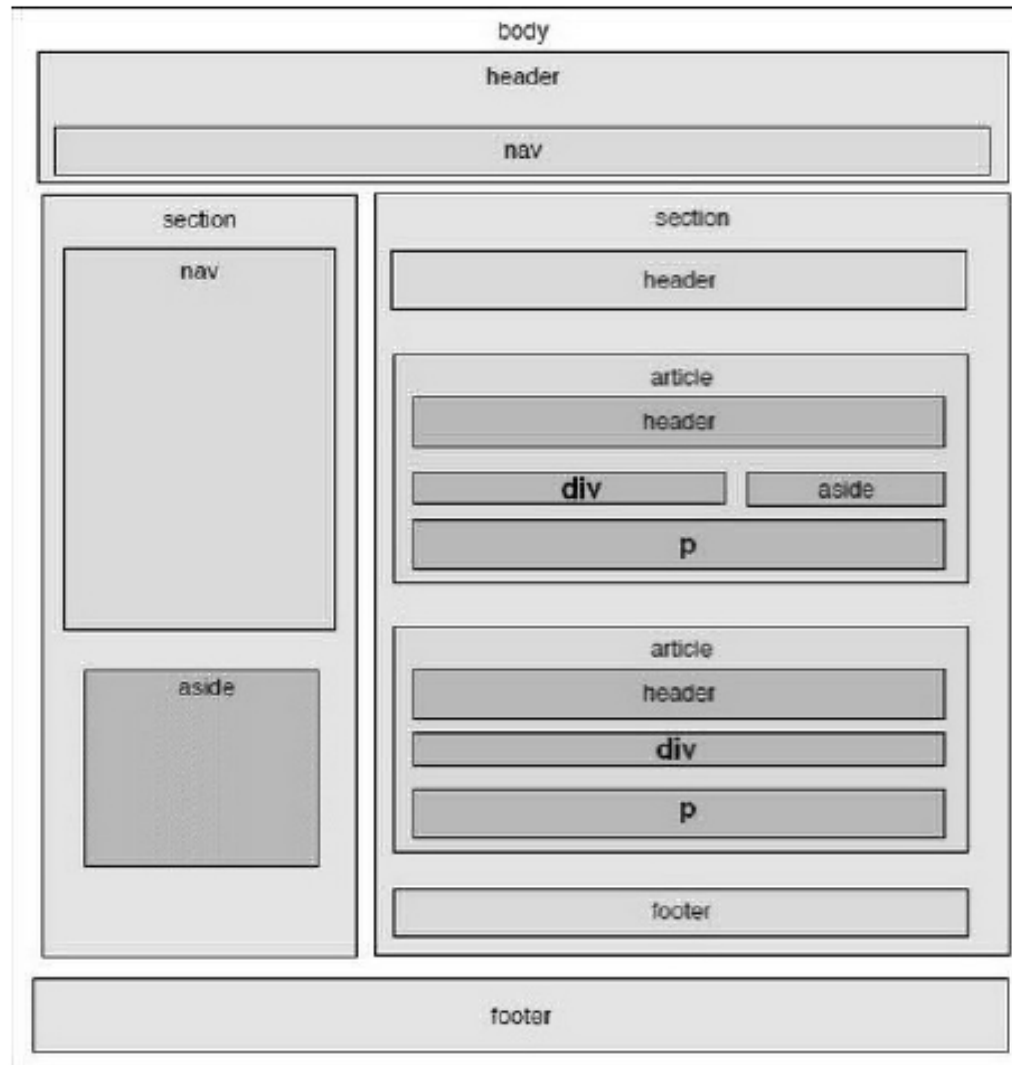
Organizational Tags

- In order to write clean HTML, you must structure your code correctly. HTML5 achieves this through new tags:
 - `<header>`
 - `<footer>`
 - `<nav>`
 - `<article>`
 - `<section>`
 - `<aside>`
 - `<figure>`
 - `<details>`

Structure of a Simple Document



Slightly More Complicated





Structure

- HTML headings are defined with the **<h1>** to **<h6>** tags from the most important to the least important heading *
- **<p>** tag defines a paragraph
- An HTML element usually consists of a **start** tag and **end** tag, with the content inserted in between
- There can be empty elements: eg. **
**
- We can also have nested elements



Headings

- Headings are important!
 - Search engines use the headings to index the structure and content of your webpages
 - Users skim your pages by its headings; show structure by using proper headings
- HTML horizontal rules
 - `<hr>` tag defines a thematic break in an HTML page, and is most often displayed as a horizontal rule



Exercise

```
<h1>This is heading 1</h1>
```

```
<p>This is some text.</p>
```

```
<hr>
```

```
<h2>This is heading 2</h2>
```

```
<p>This is some other text.</p>
```

```
<hr>
```



HTML `<head>` element

- The HTML **`<head>`** element has nothing to do with HTML headings
- The `<head>` element is a container for metadata; HTML metadata is data about the HTML document; Metadata is not displayed
- The `<head>` element is placed between the `<html>` tag and the `<body>` tag



Example

```
<!DOCTYPE html>
<html>
<head>
  <title>My First HTML</title>
  <meta charset="UTF-8">
</head>
<body>

<p>The HTML head element contains meta data.</p>
<p>Meta data is data about the HTML document.</p>

</body>
</html>
```



Exercise 1:

Mark up the following text with appropriate tags:

"Universal Studios Presents" is the most important content.

"Jurassic Park" is the next most important content.

"About" is of lesser importance than Jurassic Park.

The last sentence is just a paragraph.

```
<!DOCTYPE html>
```

```
<html>
```

```
<body>
```

```
Universal Studios Presents
```

```
Jurassic Park
```

```
About
```

```
On the Island of Isla Nublar, a new park has been built: Jurassic Park is a  
theme park of cloned dinosaurs!!
```

```
</body>
```

```
</html>
```



White space

- When writing HTML, be aware that a group of white spaces (including new lines, tabs, and regular white spaces) will always translate to a single space
- `<p>For`

Example`</p>`

Will show as “For Example”

- To force a line break, use `
`



HTML `<pre>` Element

```
<!DOCTYPE html>
<html>
<body>
```

```
<p>The pre tag preserves both spaces and line breaks:</p>
```

```
<pre>
  My Bonnie lies over the ocean.

  My Bonnie lies over the sea.

  My Bonnie lies over the ocean.

  Oh, bring back my Bonnie to me.
</pre>
```

```
</body>
</html>
```