



# Semantic Web

# How to Use HTML Elements Properly?

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# Web Page



# The Elements of a Web Page

- ◆ A Web page consists of:
  - ◆ HTML markup
  - ◆ CSS rules
  - ◆ JavaScript code
    - ◆ JS libraries
  - ◆ Images
  - ◆ Other resources
    - ◆ Fonts, audio, video, etc...



# The Elements of a Web Page: HTML Markup

- ◆ The HTML is used to define the content of a Web page
  - ◆ Not the layout
  - ◆ Not the decorations
- ◆ HTML's role is to present the information in a meaningful manner
  - ◆ Like a paper document
  - ◆ Define headers, paragraphs, textboxes, etc...
  - ◆ Not define size, color and/or positioning



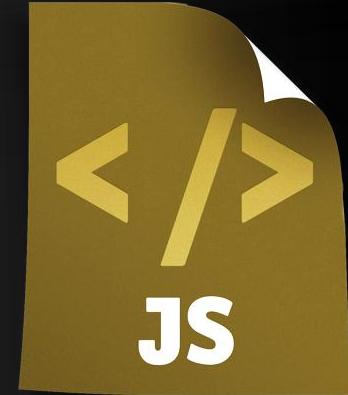
# The Elements of a Web Page: CSS Rules

- ◆ Cascading Style Sheets (CSS) is the way to make a Web page look pretty
    - ◆ Define styling rules
      - ◆ Fonts, colors, positioning, etc.
    - ◆ Define the layout of the elements
    - ◆ Define the presentation
  - ◆ The CSS files are attached to a web page and the browser applies these styles to elements



# The Elements of a Web Page: JavaScript Code

- ◆ JavaScript is the programming language for the Web
  - ◆ Makes the Web pages dynamic
  - ◆ Dynamically adding / removing HTML elements, applying styles, etc.
  - ◆ Modern JavaScript UI libraries provide UI components like dialog boxes, grids, tabs, etc.
- ◆ Like CSS the JavaScript files are attached to a web page

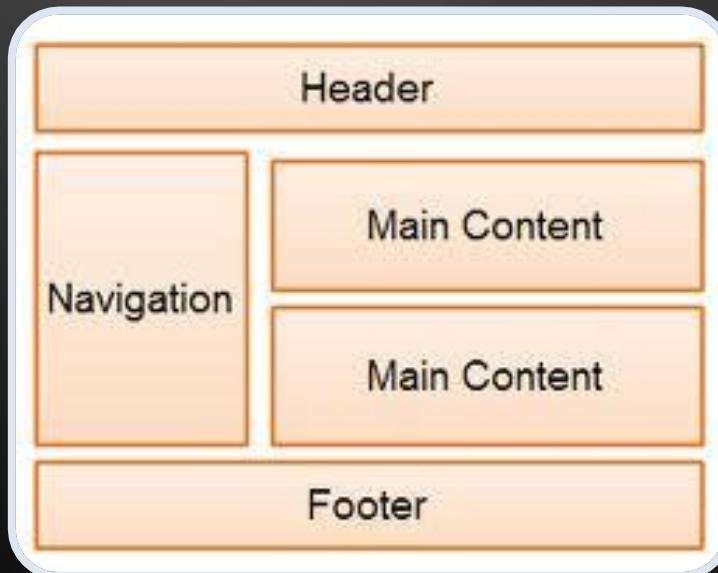


# The Elements of a Web Page: Other Resources

- ◆ Other resources are needed for a Web page to run properly
  - ◆ Images, audio files, video files
  - ◆ Flash / Silverlight / ActiveX objects



# The Semantic HTML



<address> <div>  
<ul> </fieldset> <  
</em> <br> <  
<form> <  
<h1>  
<a> </ol> <head>  
<p> <table> <ab

- ◆ Semantic HTML is:

- The use of HTML markup to reinforce the semantics of the information in Web pages
  - Rather than merely to define its presentation
  - A kind of metadata about the HTML content
- ◆ Semantic HTML is processed by regular Web browsers and other user agents
    - CSS is used to suggest its presentation to human users



# Why Use Semantic HTML?

- ◆ Semantic HTML is:
  - Easier to read by developers
  - Easier to render by browsers
  - A way to show the search engines the correct content



# How To Write Semantic HTML

- ◆ Just follow some guidelines when creating a Web site
  - ◆ Use HTML5 semantic tags
    - ◆ <header>, <nav>, <section>, <article>, <aside>, <footer>
    - ◆ Use Headings when you need to structure the content into sub-headings
      - ◆ In increasing order, starting with <h1>
    - ◆ Do not use empty tags
      - ◆ Like a clearing <div>



# HTML5 Semantic Tags



# HTML5 Semantic Tags

- ◆ HTML5 introduces semantic structure tags
  - ◆ Imagine the following site:



- ◆ This is a common Web page structure
  - ◆ Used in 90% of the web sites

# HTML5 Semantic Tags (2)

- ◆ This can be created using all kind of HTML elements
  - ◆ `<div>`, `<span>`, even `<p>`
  - ◆ Browsers will render invalid / wrong / pseudo valid HTML
- ◆ The correct way: use the HTML 5 semantic tags:

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



- ◆ More about semantic tags:  
<http://pavelkolev.com/html5-snippets/>

# HTML5 Semantic Tags (3)

- ◆ <header>
  - ◆ Site header or section header or article header
- ◆ <footer>
  - ◆ Site footer (sometime can be a section footer)
- ◆ <nav>
  - ◆ Site navigation (usually in the header)
- ◆ <section>
  - ◆ Site section (e.g. news, comments, links, ...)
- ◆ <article>
  - ◆ Article in a section (e.g. news item)

# HTML5 Semantic Tags (4)

- ◆ <aside>
  - ◆ Sidebar (usually on the left or on the right)
- ◆ <figure>
  - ◆ Figure (a figure, e.g. inside an article)
- ◆ <figcaption>
  - ◆ A caption of a figure (inside the <figure> tag)
- ◆ <audio> / <video>
  - ◆ Audio / video element (uses the built-in player)

# HTML5 Semantic Tags (5)

- ◆ <details> + <summary>
  - ◆ Accordion-like widget (can be open / closed)
- ◆ <hgroup>
  - ◆ Group article header + subheader (<h1> + <h2>)
- ◆ <time>
  - ◆ Specifies date / time (for a post / article / news)

# Other Semantics

## Headings, ems, strongs



- ◆ Headings

- ◆ Always use headings (`<h1>` – `<h6>`) when you need a heading or title
  - ◆ Like in a MS Word document
  - ◆ Google uses it to mark important content

- ◆ Strong `<strong>` vs. Bold `<b>`

- ◆ `<b>` does not mean anything
  - ◆ It just makes the text bolder
- ◆ `<strong>` marks the text is "*stronger*" than the other, surrounding text

- ◆ Emphasis <em> vs. Italic <i>
  - Emphasis does not always mean, that the code should be *italic*
  - It could be bolder, italic and underlined
  - The styles for the emphasis text should be given with CSS
  - Not by HTML
- ◆ Old browsers (like IE6)?
  - Use Modernizr or HTML5shiv

# Questions?

1. Refactor the `refactoring-homework.html` web page and make its HTML semantic
2. Create a web page using semantic HTML by the design in `homework-design-1.pptx`
3. Create a web page using semantic HTML by the design in `homework-design-2.pptx`
  - ♦ \*Note: do not try to make the same styles in Exercise 2 and Exercise 3
    - ♦ Implement just the content with its semantics
    - ♦ Use some kind of approach to support old (non-HTML5-compatible) Web browsers like IE6-IE8