

# Semantic Web

# How to Use HTML Elements Properly?

# HTML5

## Telerik Software Academy

<http://academy.telerik.com>

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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, Flash, Silverlight, 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



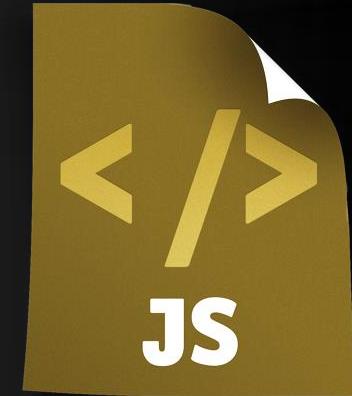
# The Elements of a Web Page: CSS Rules

- ◆ 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

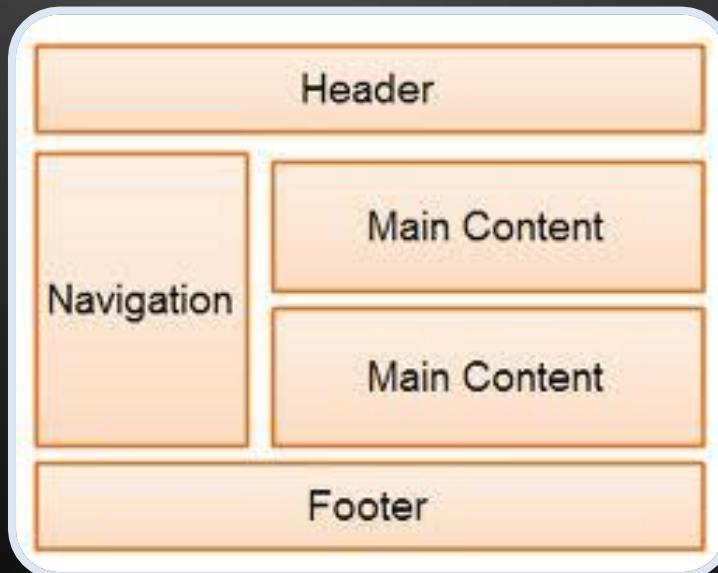


# The Elements of a Web Page: Other Resources

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



# The Semantic HTML



<address> <div>  
<ul> </fieldset> <  
</em> <br>  
<form> <  
<a> </ol> <header>  
<p> <table> <abl

- ◆ Semantic HTML is:

- ◆ The use of HTML markup to reinforce the semantics of the information in Web pages
  - ◆ Make the content understandable for computers
  - ◆ 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, parsers, bots, machines, AIs
  - A way to show the search engines the correct content



- ◆ 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>
<nav> ... </nav>
<main> ... </main>
<article> ... </article>
<section> ... </section>
<aside> ... </aside>
<footer> ... </footer>
```



# HTML5 Structure Tags

- ◆ <main>
  - ◆ Specifies the main content of a document ([info](#))
  - ◆ There must not be more than one <main> element in a document
- ◆ <header>
  - ◆ Site header or section header or article header
  - ◆ Could include navigation (<nav>)
- ◆ <footer>
  - ◆ Site footer (sometime can be a section footer)
  - ◆ Providing author, copyright data, etc.

# HTML5 Structure Tags (2)

- ◆ <nav>
  - ◆ Defines a set of navigation links.
  - ◆ E.g. site navigation (usually in the header)
- ◆ <aside>
  - ◆ Content slightly related to primary content
  - ◆ E.g. sidebar (usually on the left or on the right)
- ◆ <section>
  - ◆ Grouping of content usually with a heading, similar to chapters
  - ◆ Site section (e.g. news, comments, links, ...)

- ◆ <article>
  - ◆ Independent content such as blog post or an article (e.g. news item)
- ◆ <details> + <summary>
  - ◆ Specifies additional details that the user can view or hide on demand (accordion-like widget)
- ◆ <time>
  - ◆ Specifies date / time (for a post / article / news)
- ◆ <mark>
  - ◆ Defines marked/highlighted text

# HTML5 Content Tags (2)

- ◆ <figure>
  - ◆ Grouping stand-alone content (video or image)
  - ◆ Figure (a figure, e.g. inside an article)
- ◆ <figcaption>
  - ◆ A caption of a figure (inside the <figure> tag)
- ◆ <video> ([info](#))
  - ◆ Video element (uses the built-in player)
- ◆ <audio> ([info](#))
  - ◆ A standard for playing audio files (built-in player)

# HTML5 Content Tags (3)

- ◆ <dialog>

- ◆ Defines a dialog box or window

- ◆ <meter> / <progress>

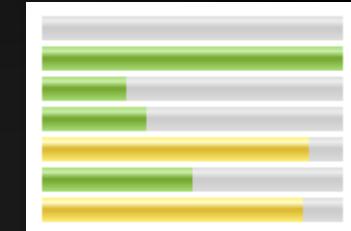
- ◆ Defines a scalar measurement within a known range (a gauge) or task progress

- ◆ <output>

- ◆ Defines the result of a calculation

- ◆ <wbr>

- ◆ Defines a possible line-break



[More info](#)

# 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>`

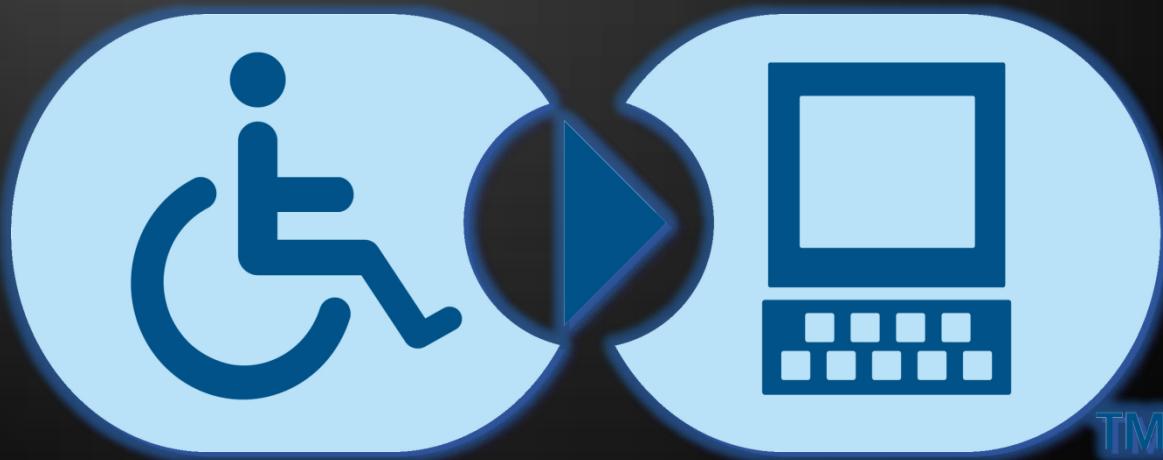
- ◆ `<b>` does not mean anything
  - ◆ It just makes the text bolder
- ◆ `<strong>` marks the text is "*stronger*" than the other, surrounding text

- ◆ 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 set with CSS
  - Not by HTML
- ◆ Old browsers (like IE6)?
  - Use Modernizr or HTML5shiv

# Accessibility

*"A person's a person,  
no matter how small"*

Dr. Seuss



- ◆ Craft content minding disabled users
  - ◆ Blind - include text equivalents of images, use labels in forms
  - ◆ Colorblind - do not convey information using color only
  - ◆ Visually impaired - avoid small font sizes
  - ◆ Epileptic - avoid flashing content (3Hz or more)
  - ◆ Physical disabilities - avoid functionality that relies only on the mouse or keyboard

- ◆ Why implement accessibility?
  - ◆ Some accessibility features are mandatory for government sites in some countries (US, NL, SW)
  - ◆ “Everyone gets visited by a very important blind user, named Google”
  - ◆ Some SEO and accessibility considerations overlap

## ◆ Standards

- ◆ Web Content Accessibility Guidelines (WCAG) -  
<http://www.w3.org/WAI/intro/wcaq>
- ◆ Section 508 - <http://www.section508.gov>

## ◆ Tools

- ◆ Will never replace manual testing, but may help
- ◆ WAVE - <http://wave.webaim.org/>

# Search Engine Optimization

Getting ahead in search engines



# Search Engine Optimization

- ◆ Search engines use so-called “crawlers” to get the content of the page and index it
- ◆ The crawlers weigh the data on the page
  - <title>, page URL and headings have great weight
  - Links from highly valued pages to your page increase its value (Google Page Rank)
  - Add alt text to images
  - Use relevant keywords in the content and <meta> tags
- ◆ No SEO technique will replace good content

# Structured Data Markup

Annotate your content so machines  
can understand it



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MICRODATA

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# Structured Data Markup

- ◆ A standard way to annotate your content so machines can understand it
- ◆ Google (and other search engines) can
  - ◆ use that data to index your content better
  - ◆ present it more prominently in search results



- ◆ Provide answers from the Knowledge Graph

|               |  |
|---------------|--|
|               | Keith Urban > Upcoming events                          |
| Feb 14<br>Sat | San Antonio, TX<br>San Antonio Livestock Show          |
| Jun 12<br>Fri | Hunter, NY<br>Taste of Country Music Festival at Hu... |
|               | Jun 18<br>Thu  |
|               | Sheridan, WY   |
|               | Jun 19<br>Fri  |
|               | Grand Junction, CO                                     |

# Structured Data Markup (2)

- ◆ Three alternative formats:
  - ◆ Microdata and RDFa
    - ◆ Define new HTML attributes
    - ◆ More info:  
[http://schema.org/docs/gs.html#microdata\\_how](http://schema.org/docs/gs.html#microdata_how)
  - ◆ JSON-LD
    - ◆ Newest and simplest markup format
    - ◆ Embed a block of JSON data inside a script tag
      - ◆ Specification: <http://www.w3.org/TR/json-ld/>
      - ◆ Examples: <http://json-ld.org/playground/>

# Questions?

# Free Trainings @ Telerik Academy

- ◆ "Web Design with HTML5, CSS3 and JavaScript" course @ Telerik Academy



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