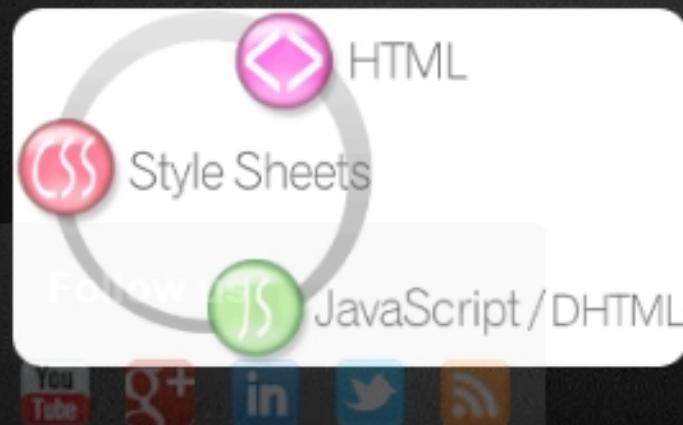


# Semantic Web use HTML Elements Properly?





# Table of Contents

- Web Page
  - HTML, CSS and JavaScript
- The Semantic HTML
- HTML5 Semantic Tags
- Other Semantics
- Accessibility
- Search Engine Optimization
- Structured Data Markup



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# Web Page



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# 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...

JavaScript  
HTML

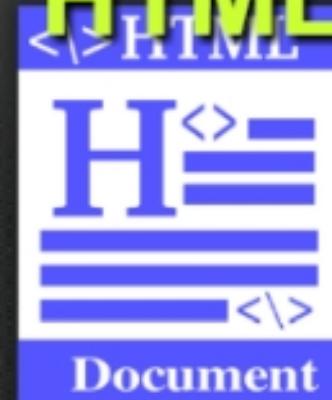
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# The Elements of a Web Page: HTML Markup

- 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, text boxes, etc...
  - Not define size, color and/or positioning



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# 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



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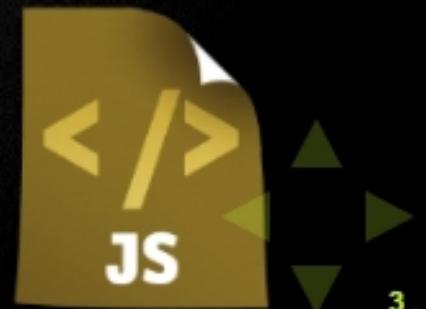
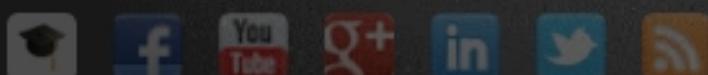




# The Elements of a Web Page: JavaScript Code

- **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

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# The Elements of a Web Page: Other Resources

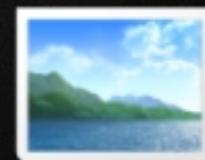
- Other resources are needed for a Web page to run properly
  - Images, fonts (glyph icons), audio, video files
  - Flash / Silverlight / ActiveX objects



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Microsoft®  
Silverlight





# The Semantic HTML



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<address> <div>  
<ul> </fieldset> <  
</em> <form> **<h1>**  
<a> </ol> <header>  
<p> <table> <tbody>  
<li> <tr> <td>



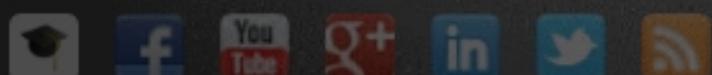


# Semantic HTML

- 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



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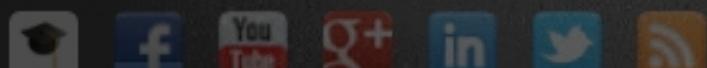


# Why Use Semantic HTML?

- Semantic HTML is:
  - Easier to read by developers, parsers, bots, machines, Al's
  - A way to show the search engines the correct content



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# 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>



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# HTML5 Semantic Tags



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# 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



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- 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>
```

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- <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.

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# HTML5 Structure Tags

- <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, ...)

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# HTML5 Content Tags

- <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

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- <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)

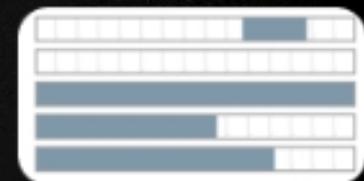
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# HTML5 Content Tags

- <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](#)



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# Other Semantics

## Headings, ems, strongs



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- 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

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- 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](#)

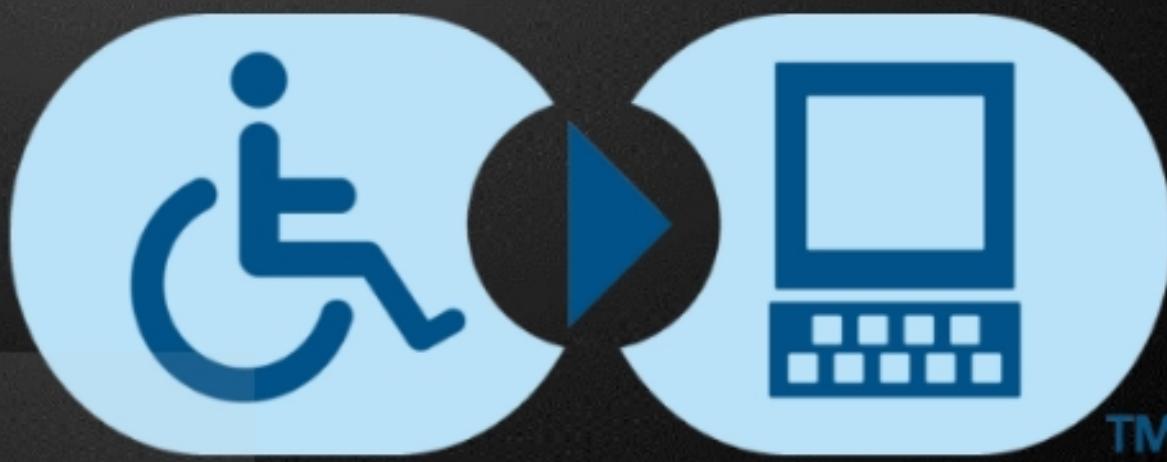
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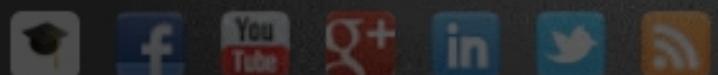


# Accessibility

**“A person’s a person, no matter how small”**



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- 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

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- 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

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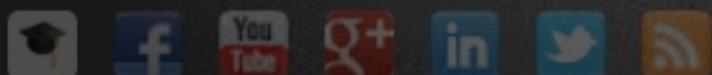
- Standards

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

- Tools

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

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# Search Engine Optimization

Getting ahead in search engines



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# 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

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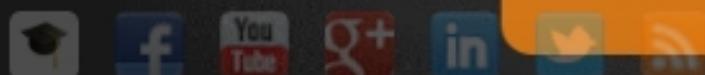
# Structured Data Markup

Annotate your content so machines can understand it



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 Sat	San Antonio, TX San Antonio Livestock Show	Jun 18 Thu	Sheridan, WY
Jan 12 Fri	Hunter, NY Taste of Country Music Festival at Hu...	Jun 19 Fri	Grand Junction, CO

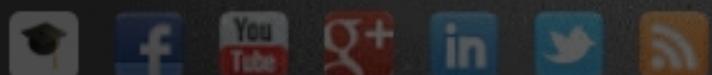
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- Three alternative formats:
  - Microdata and RDFa
    - Define new HTML attributes
      - [More info](#)
  - JSON-LD
    - Newest and simplest markup format
    - Embed a block of JSON data inside a script tag
      - [Specification](#)
      - [Examples](#)

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# Semantic Web



# Questions?



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