

# 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



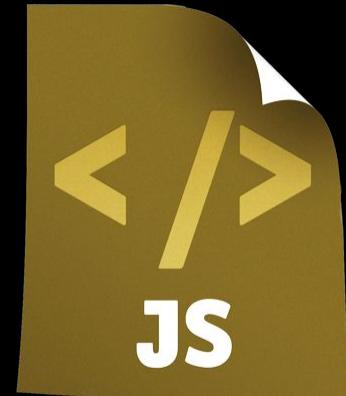
# The Elements of a Web Page: CSS Rules

- 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

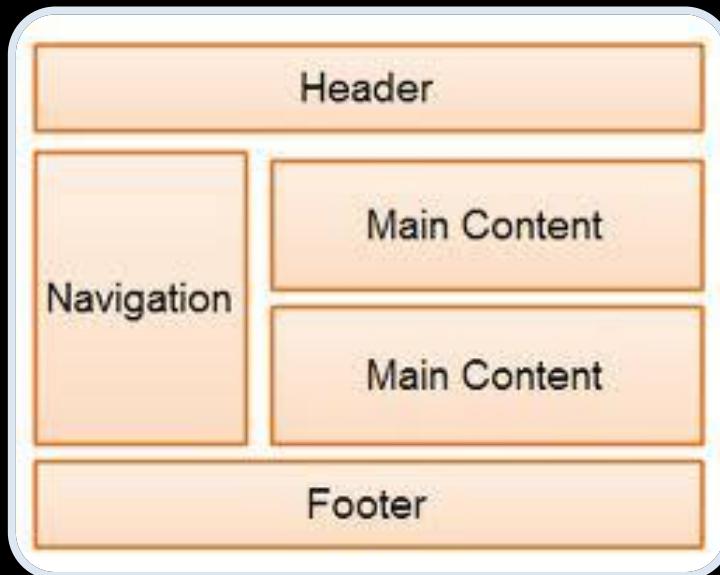


# The Elements of a Web Page: Other Resources

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



# The Semantic HTML



The diagram illustrates the structure of a semantic HTML page. It features a grid layout with the following sections:

- Header**: A single column at the top.
- Navigation**: A single column on the left side.
- Main Content**: A single column in the center.
- Main Content**: A single column below the center one.
- Footer**: A single column at the bottom.

# Semantic HTML

- 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)

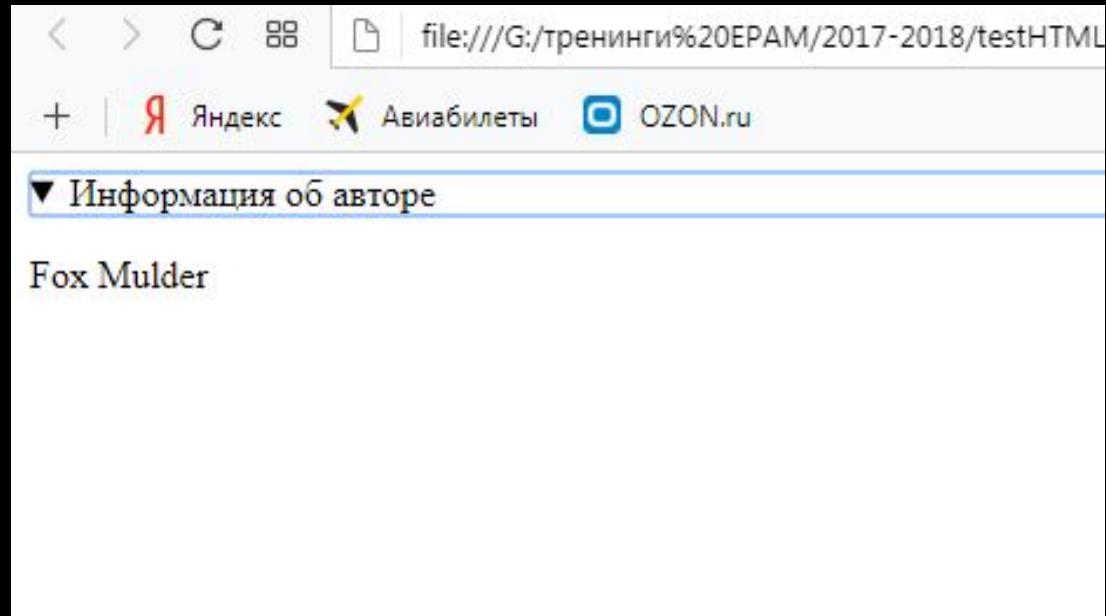
# HTML5 Semantic Tags (5)

- ◆ <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)

# details> + <summary>

## Example

```
<!DOCTYPE html>
<html>
<head>
<title>summary</title>
</head>
<body>
<details>
<summary>Информация об авторе</summary>
<p>Fox Mulder</p>
</details>
</body>
</html>
```



# Other Semantics

Headings, ems, strongs



# Other Semantics

- 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

# Other Semantics (2)

- 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](#)
  - IE6-8, Safari 4.x, Firefox 3.x, iphone 3.x

# Homework

## 1. Refactor the html web page and make its HTML semantic (use article, header, nav, section, h1..., footer)

### The Header

- 1. [nav item 1](#)
- 2. [nav item 2](#)
- 3. [nav item 3](#)
- 4. [nav item 4](#)

### This is the heading of the main section

#### Post header

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#### Post header

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#### Post header

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and the footer

# Homework(2)

2. Create a web page using semantic HTML (use nav, header, section, h1). Logo is an image!

Logo

Welcome to Our Web Site

- nav item 1
- nav item 2
- nav item 3
- nav item 4

| First name | Last name | Score |
|------------|-----------|-------|
| Ivan       | Ivanov    | 8.54  |
| Petr       | Petrov    | 7.31  |
| Sidor      | Sidorov   | 6.54  |

# Homework(3)

## 3. Create a web page using semantic HTML

The screenshot shows the LinkedIn homepage. At the top, there's a navigation bar with links to Home, What is LinkedIn?, Join Today, and Sign In. The Sign In section contains fields for Email and Password, and a Sign In button. Below this, a large banner states "Over 175 million professionals use LinkedIn to exchange information, ideas and opportunities" with a list of benefits: Stay informed about your contacts and industry, Find the people & knowledge you need to achieve your goals, and Control your professional identity online. A "Join LinkedIn Today" section follows, featuring a "Sign Up" form with fields for First Name, Last Name, Email, and Password, along with a note that the password must be 6 or more characters. A "Join Now" button is present, and a link for existing users to "Sign in".

- Use some kind of approach to support old (non-HTML5-compatible) Web browsers like IE6-IE8 for all exercises

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