

HTML 5 OVERVIEW

- Document Structure, Basic Tags, Common Elements



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HYPERTEXT MARKUP LANGUAGE

- What is HTML?

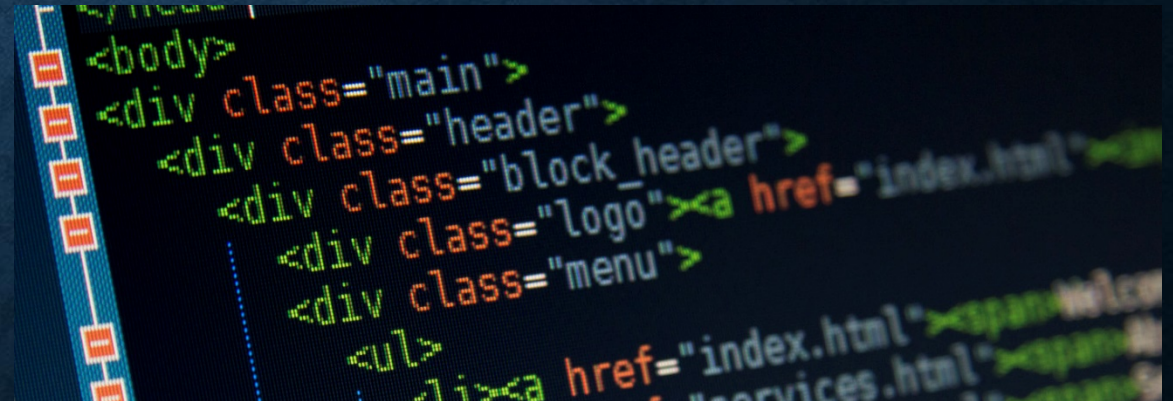
HYPERTEXT MARKUP LANGUAGE

- HTML – **H**yper **T**ext **M**arkup **L**anguage
 - A notation for describing
 - **document structure** (semantic markup)
 - **formatting** (presentation markup)
 - Looks (looked?) like:
 - A Microsoft Word document
- The markup tags provide meta-information about the page content and define its structure
- A HTML document consists of many tags (with nesting)



CREATING HTML PAGES

- An HTML document must have an `.htm` or `.html` file extension
- HTML files can be created with text editors:
 - Notepad++, GEdit, Sublime Text, WebStorm, ...
- Or HTML editors (WYSIWYG Editors):
 - Microsoft WebMatrix
 - Microsoft Expression Web
 - Microsoft Visual Studio
 - Adobe Dreamweaver
 - Adobe Edge



HTML – PAST, PRESENT, FUTURE

- 1991 – HTML first mentioned – Tim Berners-Lee – HTML tags
- 1993 – HTML (first public version, published at IETF)
- 1993 – HTML 2 draft
- 1995 – HTML 2 – W3C
- 1995 – HTML 3 draft
- 1997 – HTML 3.2 – “Wilbur”
- 1997 – HTML 4 – “Cougar” – CSS
- 1999 – HTML 4.01 (final)
- 2000 – XHTML draft
- 2001 – XHTML (final)
- 2008 – HTML5 / XHTML5 draft
- 2011 – feature complete HTML5
- http://en.wikipedia.org/wiki/HTML5#Plan_2014



HTML TERMINOLOGY

- Tags, Attributes and Elements



HTML TERMINOLOGY

• Concepts in HTML

• Tags

- Opening tag and closing tag
- The smallest piece in HTML

• Attributes

- Properties of the tag, e.g. size, color, etc...

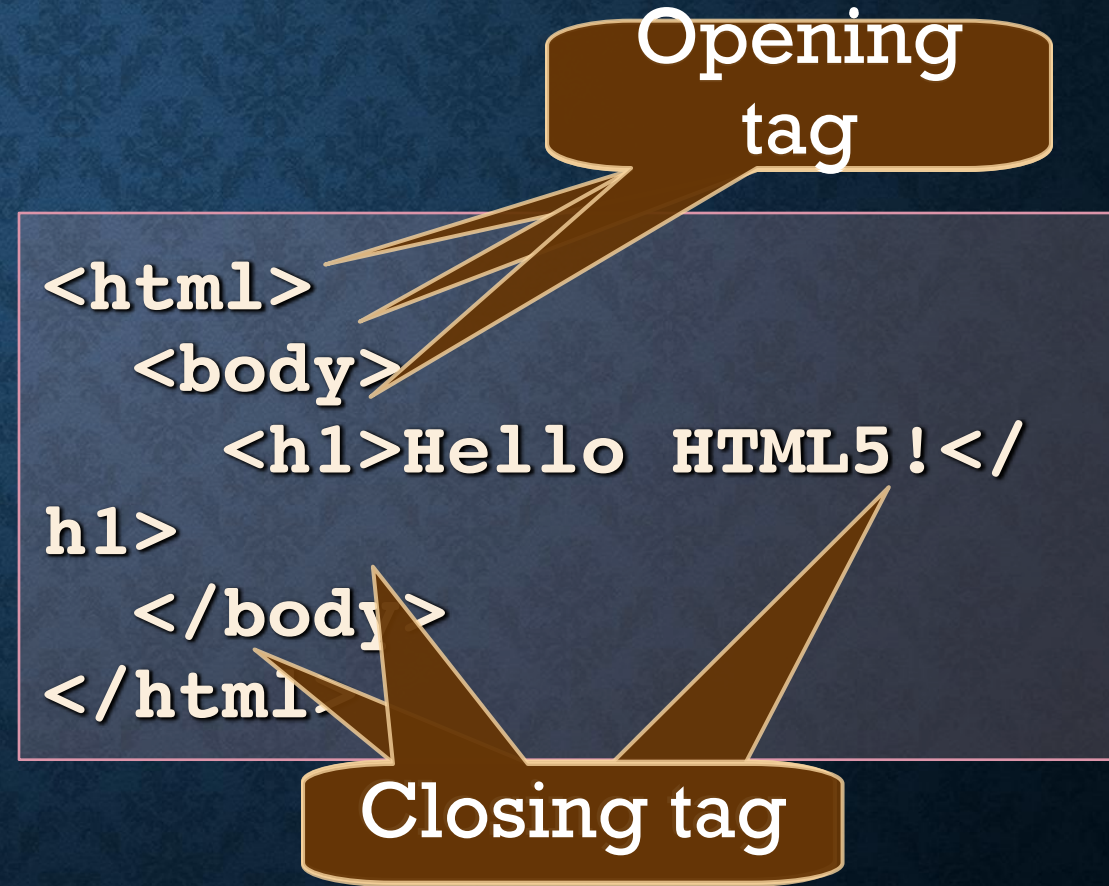
• Elements

- Combination of opening, closing tag and attributes



HTML TAGS

- **Tags** are the smallest piece in HTML Document
 - Start with "<" and end with ">"
- Two kinds of tags
 - Opening
 - Mark the start of an HTML element
 - Closing
 - Mark the end of an HTML element
 - Start with "</" and end with ">"



ATTRIBUTES

- **Attributes** are properties of the HTML elements
 - Used to specify size, color, borders, etc...
 - Has value surrounded by " " or ' ' (always a string)

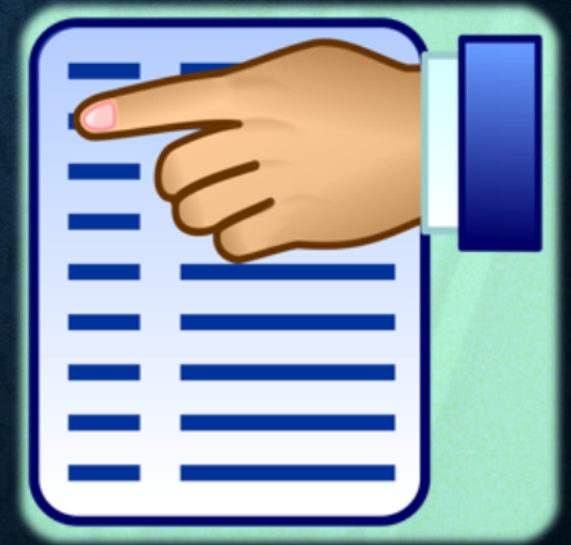
```
<!-- makes a hyperlink to Chochev.EU -->  
<a href="http://chochev.eu">go to Chochev SITE</a>  
  
<!-- makes a horizontal line -->  
<hr width="95%" size="3px" />  
  
<!-- adds an image in the web page -->  

```

**Some tags don't
have s closing tag**

MOST COMMON ATTRIBUTES

- Common attributes for every HTML element
 - **id** – assigns a unique element identifier (ID)
 - **class** – assigns CSS class to styling
 - **name** – assigns a name (for form elements)
 - **style** – defines inline CSS style definitions
- Specific attributes for certain elements
 - E.g. attribute **src** of the **img** element
 - Shows the path to the image to be shown



HTML ELEMENTS

- HTML **elements** are tags with content
 - Opening tag (+ attributes) + content + closing tag

```
<a href="http://chochev.eu">Chochev.EU  
Team</a>
```

**Opening
tag**

**HTML
element**

```
<div class="item">
```

```
  
<span>Books</span>
```

**Element
body
(content)**

```
</div>
```

**Closing
tag**

HTML TERMINOLOGY

- Live Demo



HTML DOCUMENT STRUCTURE

- HTML Document, Doctype, Head, Body



HTML DOCUMENT STRUCTURE

- Essential elements for each HTML document:
 - `html`, `head`, `body`, `doctype`
- The `<html>` element
 - Used to mark the start and ending of the HTML document
 - All the content of the web page is inside this tag

```
<html>  
...  
</html>
```

HEAD ELEMENT

- The `<head>` contains markup not visible to the user
 - But helps the browser to render correctly the HTML document
- What is in there?
 - Styles declarations
 - Scripts declarations
 - Encoding specification
 - Metadata definitions
 - The `title` tag – the text in the title (tab title) of the browser



DOCTYPE AND BODY ELEMENT

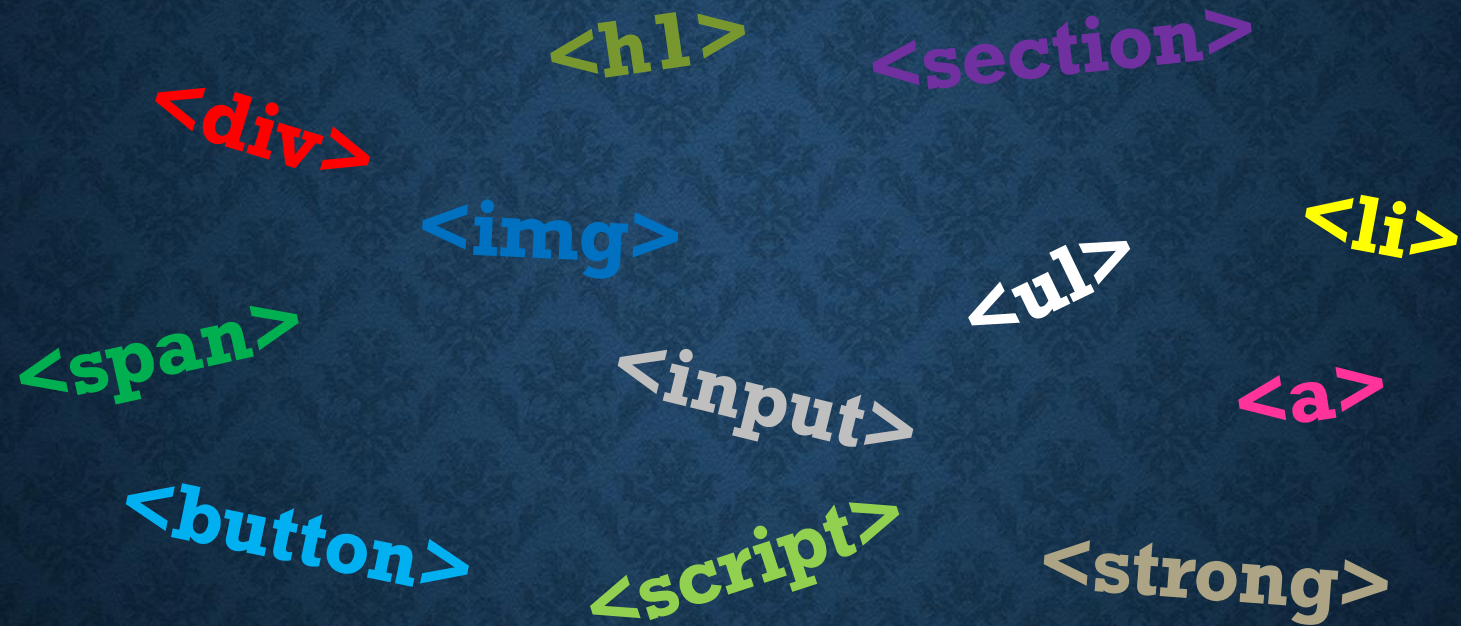
- The **DOCTYPE** declaration is kind of the validator of the page
 - Tells the browser which version of HTML to use
 - Prefer the HTML 5 Doctype:
- The **<body>** element contains the entire visible markup
 - Headings, paragraphs, text, hyperlinks, images, etc...
 - Forms, textboxes, sliders, buttons, ...

```
<!DOCTYPE html>
```



HTML DOCUMENT STRUCTURE

- Live Demo



HTML COMMON ELEMENTS

- Used in 90% of All Internet Sites

TEXT FORMATTING

- The text formatting tags modify the text inside them
 - Ex. `<b>Hello</b>` makes the text "Hello" bold
 - Most of them are deprecated → use CSS instead!

HTML Element	Result
<code></code>	strong (bold)
<code></code>	<i>emphasized</i>
<code><sub></sub></code>	Sample _{subscript}
<code><sup></sup></code>	Sample ^{superscript}
<code></code>	bold
<code><i></i></code>	<i>italicized</i>
<code><u></u></code>	<u>underlined</u>
<code><pre></pre></code>	Preformatted text

SOME SIMPLE TAGS

- Hyperlink tag

```
<a href="http://www.chochev.eu" title="Chochev">CHOCHEV</a>
```

- Image tag

```

```

- Text formatting tags

```
This text is <em>emphasized.</em>  
<br />  
new line<br />  
This one is <strong>more emphasized.</strong>
```

HYPERLINKS

- External hyperlink

```
<a href="http://www.chochev.eu" title="Chochev">Chochev</a>
```

Local hyperlink

```
<h1 id="exercises">Exercises</h1>  
...  
See the <a href="#exercises">exercises</a>
```

- Relative hyperlink

```
<a href="../2.%20HTML5-Overview.pptx">presentation</a>
```

IMAGES

- Images are inserted by the `<img>` tag

```

```

- Recommended attributes for all images:
 - `alt` – image alternative text (acts like a description)
 - `title` – image description (shown on mouse hover)
 - `width, height` – the image size
 - Always assign size to all images!

HEADINGS AND PARAGRAPHS

- Heading Tags: `<h1>` – `<h6>`

```
<h1>Heading 1</h1>  
<h2>Sub heading 2</h2>  
<h3>Sub heading 3</h3>
```

- Paragraph Tags: `<p>`

```
<p>This is my first paragraph</p>  
<p>This is my second paragraph</p>
```

Sections: `<div>` and `<span>`

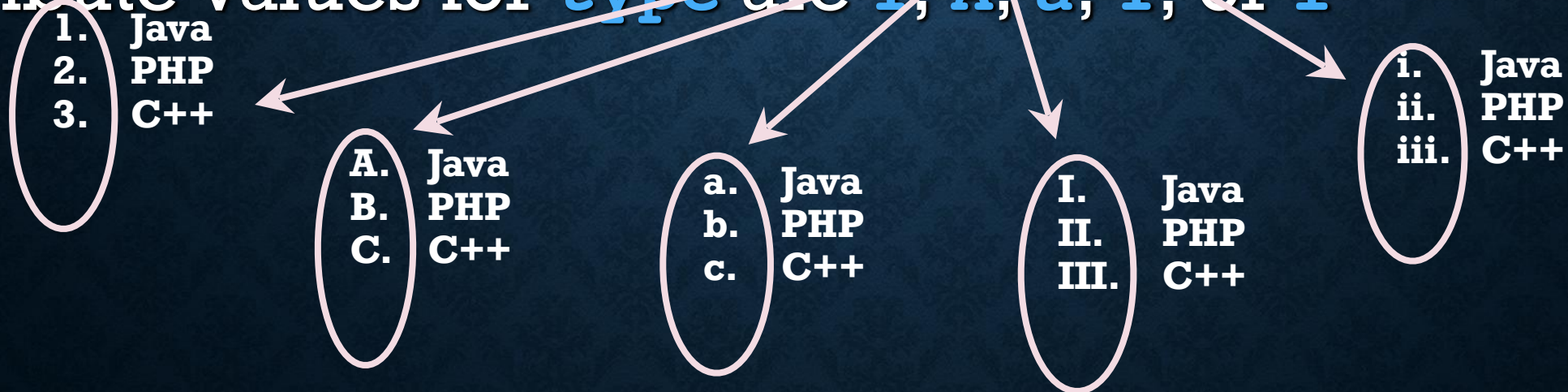
```
<div style="background: skyblue;">  
  This is a div  
</div>
```

ORDERED LISTS: TAG

- Create an **O**rdered **L**ist using `<ol></ol>`:

```
<ol type="1">  
  <li>Java</li>  
  <li>PHP</li>  
  <li>C++</li>  
</ol>
```

- Attribute values for **type** are **1**, **A**, **a**, **I**, or **i**

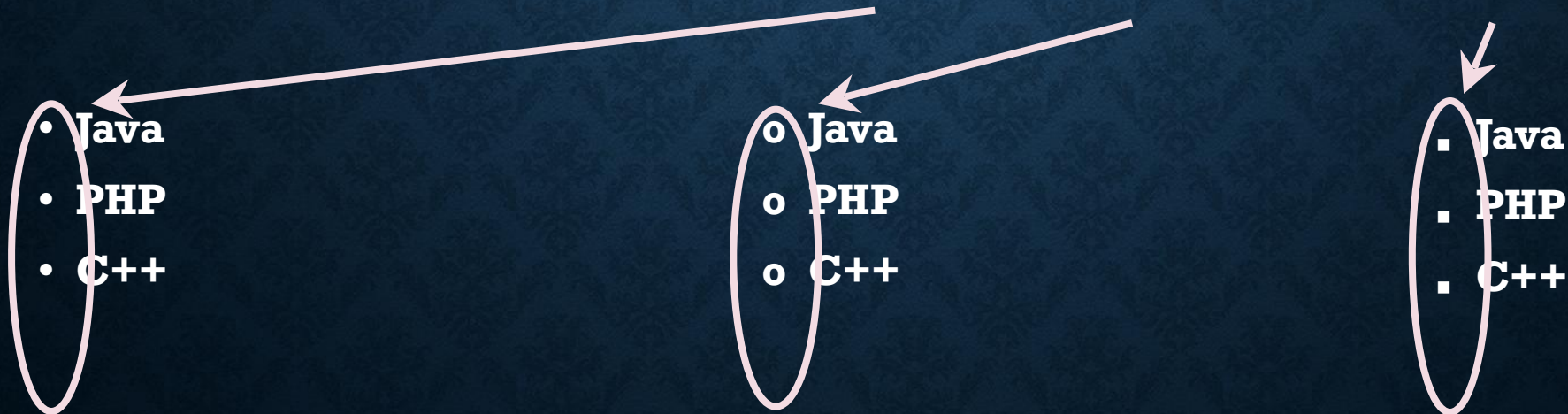


UNORDERED LISTS: TAG

- Create an **Unordered List** using `<ul></ul>`:

```
<ul type="disc">  
  <li>Java</li>  
  <li>PHP</li>  
  <li>C++</li>  
</ul>
```

- Attribute values for type are: **disc**, **circle** and **square**



DEFINITION LISTS: <DL> TAG

- Create definition lists using <dl>
 - Pairs of text (<dt>) and associated definition (<dd>)

```
<dl>  
  <dt>HTML</dt>  
  <dd>A markup language ...</dd>  
  <dt>CSS</dt>  
  <dd>Language used to ...</dd>  
</dl>
```

- Renders without bullets
- Definition is indented

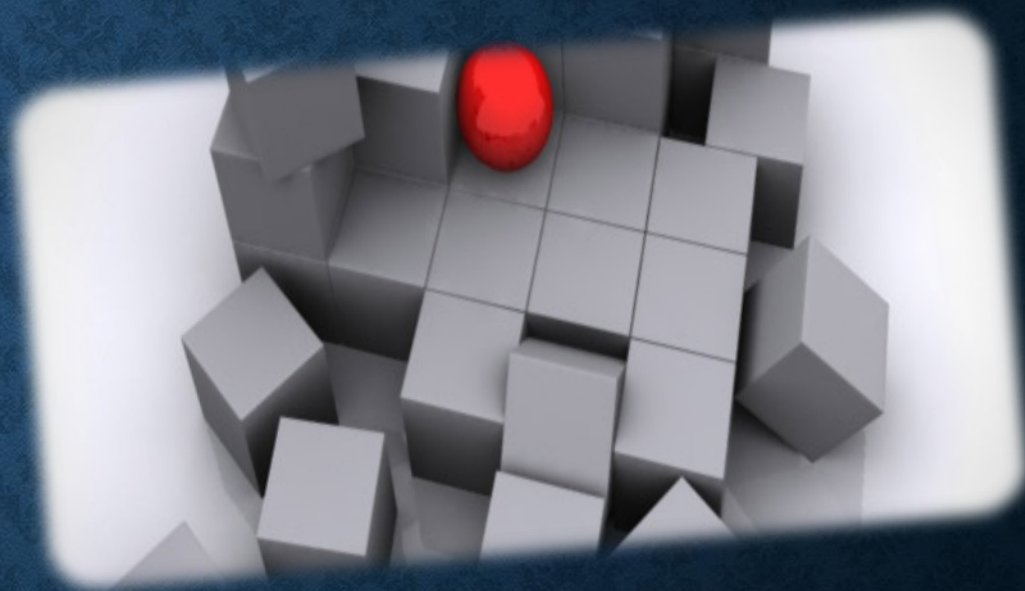
`<div>` `<h1>` `<section>`
`<img>` `<li>`
`<span>` `<ul>` `<a>`
`<input>`
`<button>` `<script>` `<strong>`

HTML COMMON ELEMENTS

- Live Demo

```
4 <head>
5 <meta http-equiv="Content-Type" />
6 <title>Home</title>
7 <link rel="stylesheet" href="sty
8 <style type="text/css">
9 .style1 {
10     color: #FF0000;
11 }
12 </style>
13 </head>
```

```
<span class="style1">You will have to p
separate license to use the OpenCube me
```



SECTION ELEMENTS

- <div> and

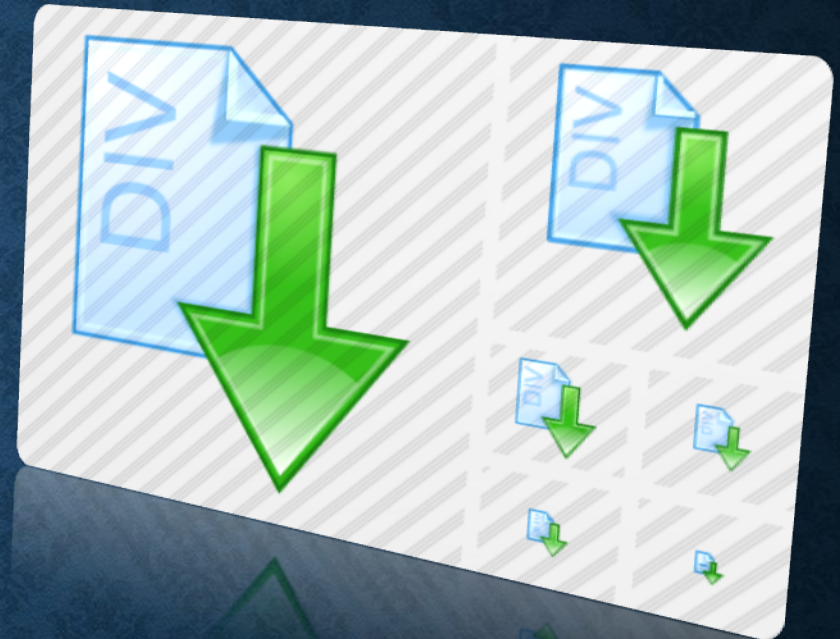
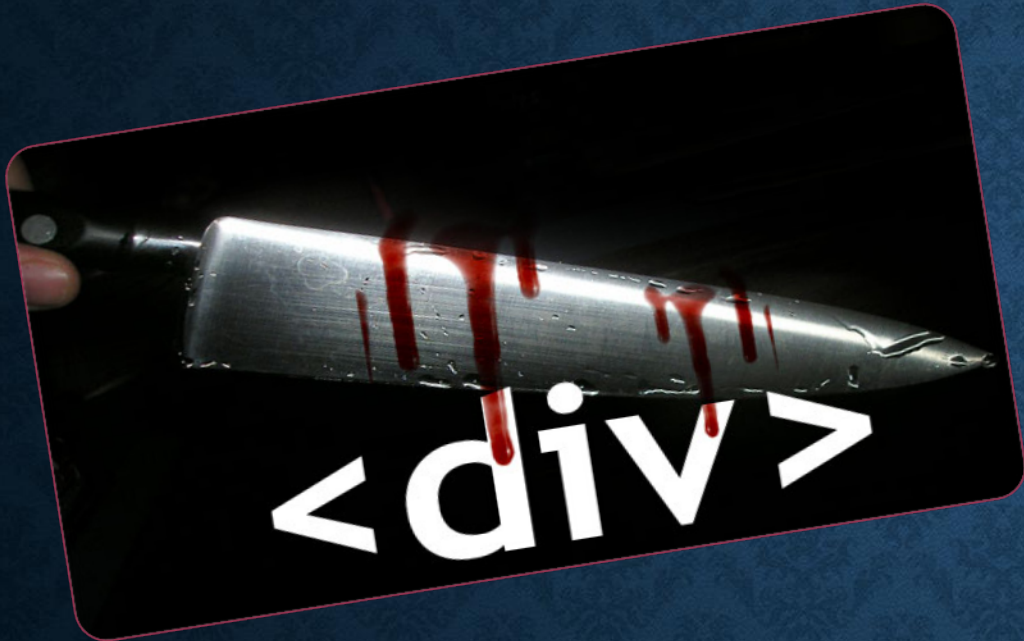
THE <DIV> TAG

- `<div>` creates logical divisions within a page
 - Block element (rendered as rectangle)
 - Typically used with CSS classes
 - `<div>`s can be nested as blocks
- Example:

```
<div id="body">  
  <h2>Header</h2>  
  <div class="contents">  
    <p>P1</p>  
    <p>P2</p>  
  </div>  
</div>
```

```
<div style="font-size:24px; color:red">DIV example</div>
```

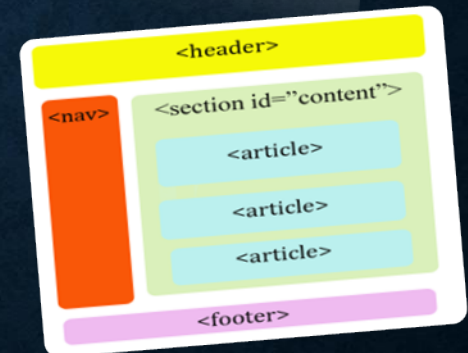
```
<p>This one is <span style="color:red; font-weight:bold">only a test</span>.</p>
```



`<DIV>`

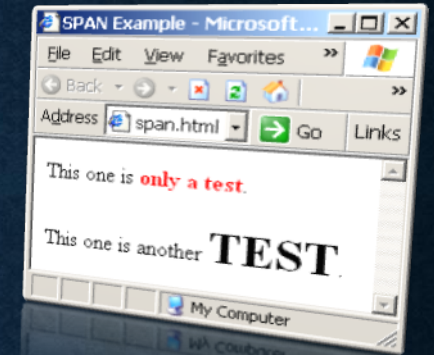
- Live Demo

`<DIV>`



THE TAG

- **** is inline styling element
- Useful for modifying a specific portion of text
 - Inline element → doesn't create a separate area (paragraph) in the document
- Used to style pieces of text

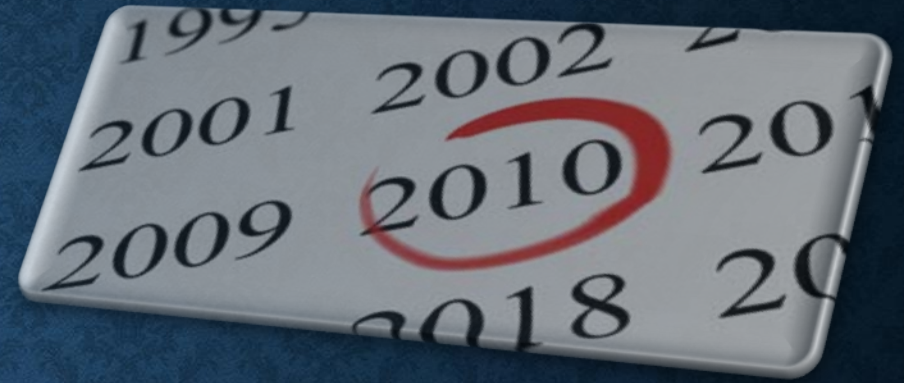


```
<div class="k-widget k-tooltip k-tooltip-validation"
  <span class="k-icon k-warning">Not ready</span>
</div>
```

```
<p>This one is <span style="color:red; font-weight:bold">only a test</span>.</p>
```

```
<p>This one is another <span style="font-size:32px; font-weight:bold">TEST</span>.</p>
```





- Live Demo

some text



SEMANTIC STRUCTURAL TAGS

THE STRUCTURE OF A WEB PAGE

- A typical layout structure of a Web page



THE "HTML 4 AND BEFORE" WAY

- Using `<div>`s with `IDs` (the IDs are needed for styling)

```
<html>
<head> ... </head>
<body>
    <div id="header"> ... </div>
    <div id="navigation"> ... </div>
    <div id="sidebar"> ... </div>
    <div id="content"> ... </div>
    <div id="footer"> ... </div>
</body>
</html>
```



THE HTML 4 WAY

- Live Demo

THE HTML 5 WAY

- In HTML 5 there are **semantic** tags for layout
 - **<header>**, **<footer>**, **<nav>**, **<aside>**, **<section>**

```
<html>
<head> ... </head>
<body>
  <header> ... </header>
  <nav> ... </nav>
  <aside> ... </aside>
  <section> ... </section>
  <footer> ... </footer>
</body>
</html>
```

HTML5

Unleashed

SEMANTIC STRUCTURAL TAGS

- Live Demo

HTML CODE FORMATTING

- HTML should be [well formatted](#)
 - Nested tags should be indented on the right, but not always!

```
<div class="book">  
  <span class="book-logo"></span>  
</div>
```

Any sequence of whitespace converts to a single space

```
<div class="book">  
  <span class="book-logo">  
      
  </span>  
</div>
```

We have a space before the image!

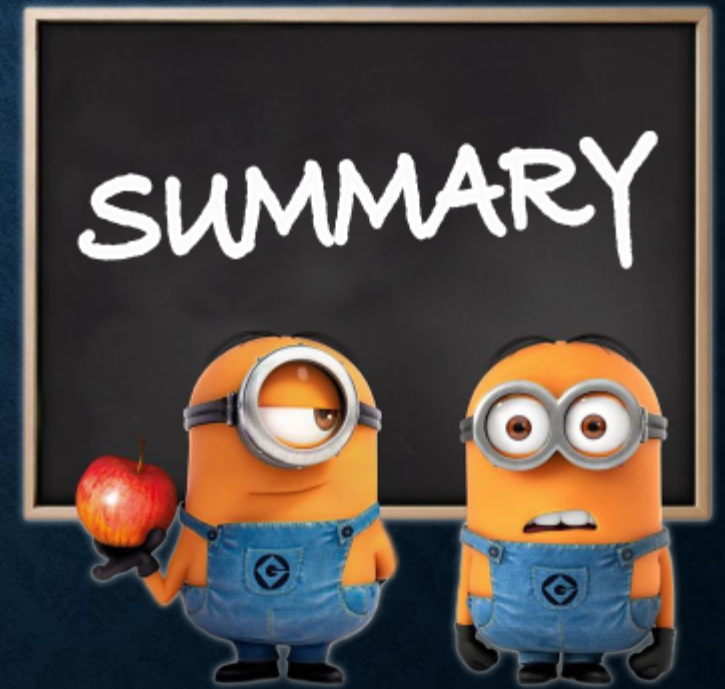
We have a space after the image!

HTML TIPS AND PRACTICES

- Have the correct vision and attitude towards HTML
 - HTML is only about **structure**, not appearance
 - Browsers tolerate invalid HTML code and parse errors
 - You should always write **correct HTML**
 - Format your HTML code
 - Always think about **semantics**
- The **W3C HTML Validator** is a way to validate your HTML
 - <http://validator.w3.org>

SUMMARY

- HTML describe **structured content** (text, images, tables, figures, etc.)
in HTML elements
- Elements consist of **open / closing tag + content**
- HTML documents consist of **<head> + <body>**
- Commonly used HTML tags:
 - **<html>**, **<head>**, **<body>**, **<p>**, **<h1>**, **<h2>**,
<h3>, ..., ****, ****, ****, ****,
****, **<div>**, ****
- **<div>** are block elements
- **** is inline element



Questions???