

# HTML 5

The past, the present, the future

Learning & Development Team



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# Hypertext Markup Language

```
<!DOCTYPE html>
<html>
  <head>
    <title>Welcome</title>
    <meta http-equiv="Content-Type" content="text/html; charset=UTF-8" />
    <meta name="viewport" content="width=device-width, initial-scale=1.0" />
    <link rel="stylesheet" href="style.css" />
  </head>
  <body>
    <h1>Hello World!</h1>
    <p>This is a simple example of an HTML document. It consists of a header, some content, and a footer. The code is written in a plain text file, and can be viewed and edited with any text editor.</p>
    <h2>Getting Started</h2>
    <ul>
      <li>HTML</li>
      <li>CSS</li>
      <li>JavaScript</li>
    </ul>
  </body>
</html>
```

# Hypertext Markup Language

- HTML – Hyper Text Markup Language
  - A notation for describing
    - document structure (semantic markup)
    - formatting (presentation markup)
  - Looks (looked?) like:
    - A Microsoft Word document
- The markup tags provide information about the page content structure
- A HTML document consists of many tags

# Creating HTML Pages

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

# HTML – Past, Present, Future

- 1991 – HTML first mentioned – Tim Berners-Lee – HTML tags
- 1993 – HTML (first public version, published)
- 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
- 2022 – HTML5 – final specification



# 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
    - 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 in "</"

```
<html>
<body>
    <h1>Hello Pesho!</h1>
</body>
</html>
```

Opening tag

Closing tag

# Attributes

- Attributes are properties of HTML Elements
  - Used to set size, color, border, etc...
  - Put directly in the tags
  - Has value surrounded by " " or ''
    - The value is always a string

```
<!-- makes a hyperlink to Google -->
<a href="http://google.com"> go to Google</a>

<!-- makes a horizontal line -->
<hr width="95%" size="3px"/>

<!-- adds an image in the web page -->

```

Some tags don't have closing tag

# Most Common Attributes

- There are some attributes that are common for every HTML element
  - Id, class, name, style
- And some attributes are specific
  - For example the attribute `src` of the `img` element
    - Shows the path to the image to be shown

# HTML Elements

- HTML Elements are combination of tags and attributes
  - Opening tag with some or none attributes and a closing tag

```
<a href="http://google.com"> go to Google</a>
```

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

# HTML Document Structure

- Some elements are essential to each HTML Document:
  - html, head, body, doctype
- The `html` element
  - Used to mark the beginning and ending of a HTML document
  - All the content of the web page is inside this tag

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

# Head Element

- The head tag contains markup that is not visible to the user (i.e. the person using the browser)
  - But helps the browser to render correctly the HTML document
- What is in there?
  - Styles, scripts
  - Declare encodings
  - Etc..
  - The title tag - the text in the tab of a browser



# Body Element and Doctype

- body element contains all the visible to the user markup
  - Headings, text, hyperlinks, images, etc...
  - Textboxes, sliders, buttons...
- Doctype is kind of the validator of the page
  - Tells the browser in which version of HTML the page is written
  - HTML 5 Doctype

```
<!DOCTYPE html>
```

# HTML Common Elements

Used in 90% of all the sites

# Text Formatting

- Text formatting tags modify the text between the opening tag and the closing tag
  - Ex. <b>Hello</b> makes "Hello" bold

<b></b>	<b>bold</b>
<i></i>	<i>italicized</i>
<u></u>	<u>underlined</u>
<sup></sup>	Sample <sup>superscript</sup>
<sub></sub>	Sample <sub>subscript</sub>
<strong></strong>	<b>strong</b>
<em></em>	<i>emphasized</i>
<pre></pre>	Preformatted text

- ◆ Many of the formatting tags are deprecated
  - ◆ Use CSS instead

# Some Simple Tags

- Hyperlink Tags

```
<a href="http://www.telerik.com/"  
    title="Telerik">Link to Telerik Web site</a>
```

- Image Tags

```

```

- Text formatting tags

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

# Headings and Paragraphs

- Heading Tags (h1 – h6)

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

- Paragraph Tags

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

- Sections: div and span

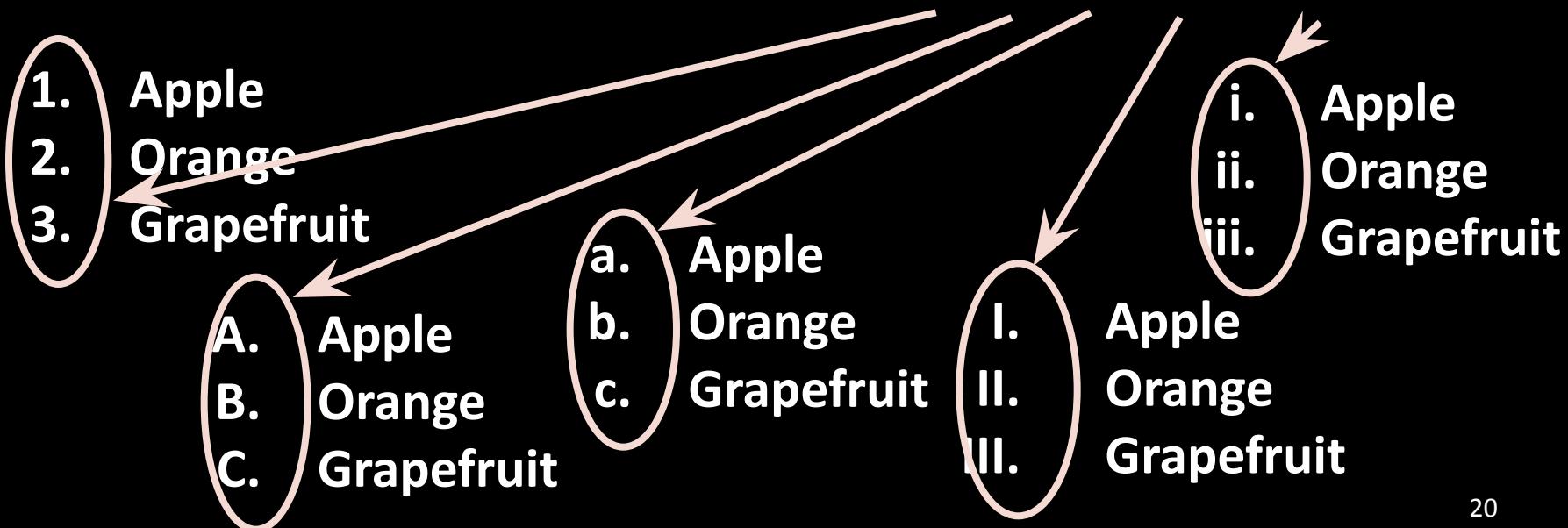
```
<div style="background: skyblue;">
  This is a div</div>
```

# Ordered Lists: <ol> Tag

- Create an Ordered List using <ol></ol>:

```
<ol type="1">
  <li>Apple</li>
  <li>Orange</li>
  <li>Grapefruit</li>
</ol>
```

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



# Unordered Lists: <ul> Tag

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

```
<ul type="disc">
  <li>Apple</li>
  <li>Orange</li>
  <li>Grapefruit</li>
</ul>
```

- Attribute values for type are:

- Apple
- Orange
- Pear

- disc, circle or square
- Apple
- Orange
- Pear

- Apple
- Orange
- Pear

# Definition lists: <dl> tag

- Create definition lists using <dl>
  - Pairs of text and associated definition; text is in <dt> tag, definition in <dd> tag

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

- Renders without bullets
- Definition is indented

# Definition list

Список определений

GIF

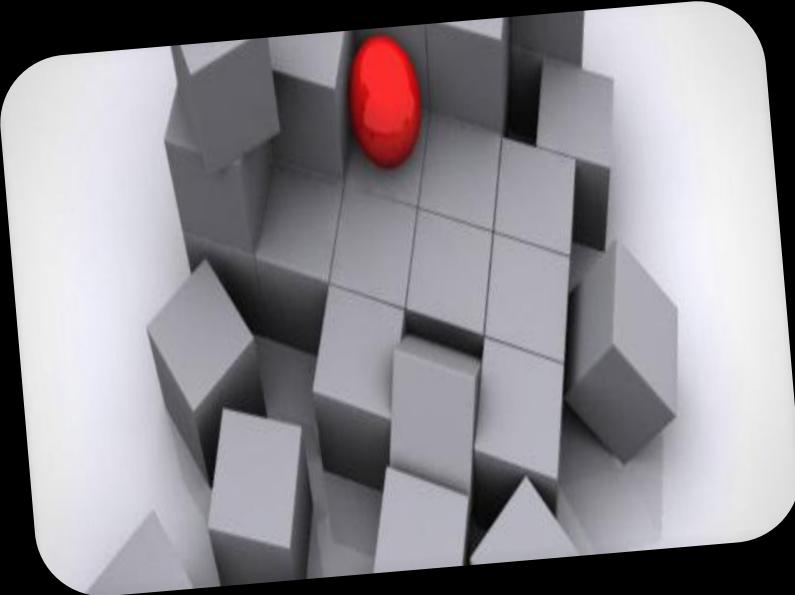
*Формат графических файлов, широко применяемый при создании сайтов. GIF использует 8-битовый цвет и эффективно сжимает сплошные цветные области, при этом сохраняя детали изображения.*

JPEG

*Популярный формат графических файлов, широко применяемый при создании сайтов и хранении изображений. JPEG поддерживает 24-битовый цвет и сохраняет яркость и оттенки цветов в фотографиях. Данный формат называют сжатием с потерями, поскольку алгоритм JPEG выборочно отвергает данные. Метод сжатия может исказить деталь в рисунке, особенно содержащий текст или изображение с четкими краями. Формат JPEG не поддерживает прозрачность, когда вы сохраняете фотографию в формате JPEG, прозрачные пиксели заполняются определенным цветом.*

```
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  
separate license to use the OpenCube p



# Section Elements

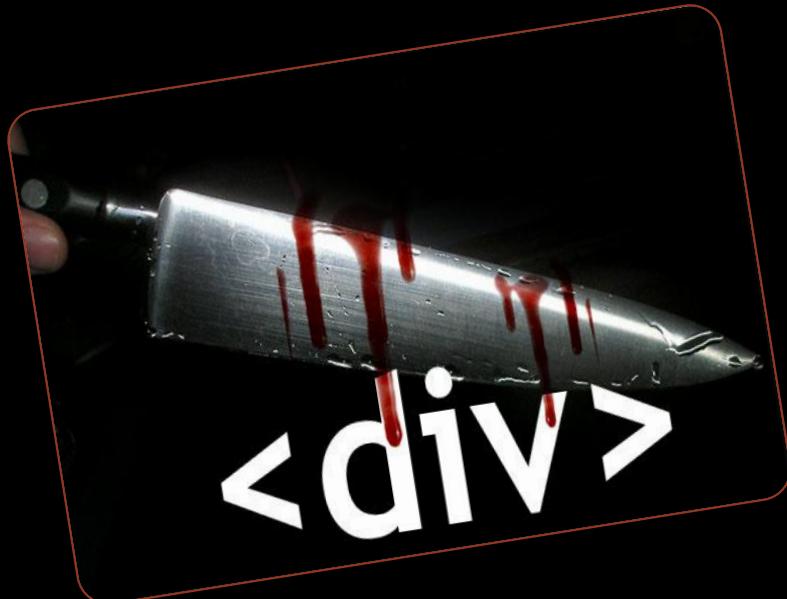
The <div> and The <span>

# The <div> Tag

- <div> creates logical divisions
  - Block element
  - Used with CSS
- Example:

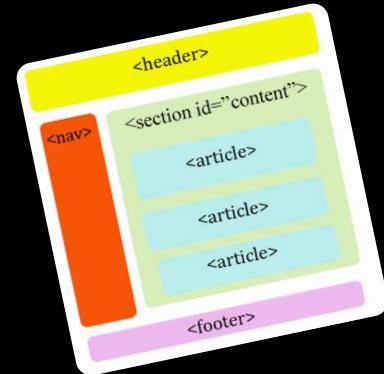


```
<div style="font-size:24px; color:red">DIV  
example</div>  
  
<p>This one is <span style="color:red;  
font-weight:bold">only a test</span>.</p>
```



<div> <DIV>  
<DIV>

Live Demo



# The <span> Tag

- Inline style element
- Useful for modifying a specific portion of text
  - Don't create a separate area (paragraph) in the document
- Mainly used to style parts of a text



```
<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>
```

Hello World

The quick brown fox **jumped** over the lazy dog.



# <SPAN>

Live Demo

<SPAN>some text</span>

# Semantic Structural Tags

# The Structure of a Web Page

- A sample layout structure of a Web Page



# The "HTML 4 and Before" Way

- Using divs 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 5 Way

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

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

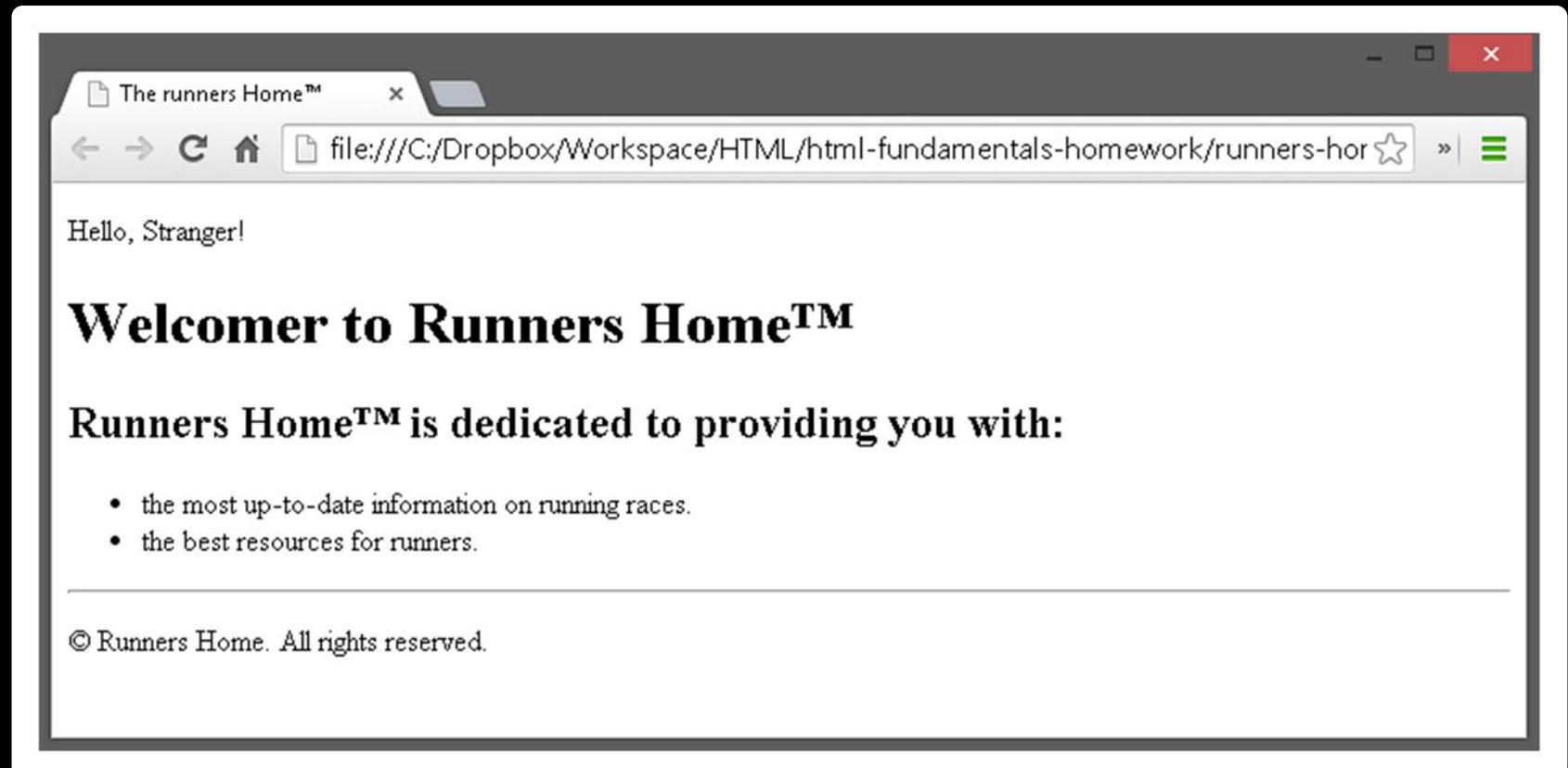
- Work only on newer browsers

# Remember

- It is important to 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 not
  - Always think about semantics
- The W3C HTML Validator is a way to validate your HTML
  - <http://validator.w3.org/>

# Exercises

1. Write an HTML page like the following:



# Exercises (2)

2. Write an HTML page like the following:

## Preceding Text

- I. List Item 1
  - a. Nested Item 1.1
  - b. Nested Item 1.2
- II. List Item 2
  - 1. Nested Item 2.1
  - 2. Nested Item 2.2
    - o Nested Item 2.2.1
    - o Nested Item 2.2.2
      - Nested Item 2.2.2.1
      - Nested Item 2.2.2.2
    - o Nested Item 2.2.3
  - 3. Nested Item 2.3
- III. List Item 3
  - Nested Item 3.1
  - Nested Item 3.1
  - Nested Item 3.1

# Exercises (3)

## 3. Create an user profile Web

page `profile.html`, friends  
page named `friends.html`  
and info page named  
`home.html`. Link them to

one

