



# 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" />  
    <meta http-equiv="Content-Script-Type" content="text/javascript" />  
    <link rel="stylesheet" href="style.css" />
```

# 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



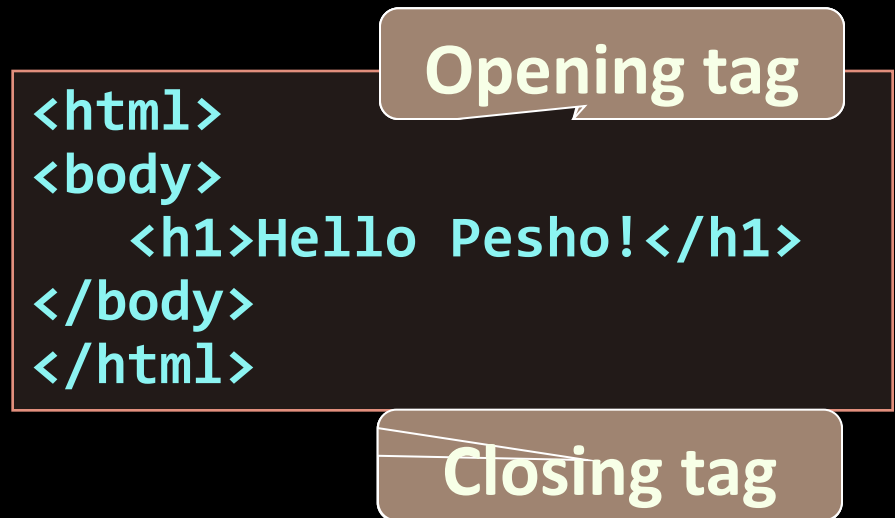
# HTML Terminology

- 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 "</"



# 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

<code>&lt;b&gt;&lt;/b&gt;</code>	<b>bold</b>
<code>&lt;i&gt;&lt;/i&gt;</code>	<i>italicized</i>
<code>&lt;u&gt;&lt;/u&gt;</code>	<u>underlined</u>
<code>&lt;sup&gt;&lt;/sup&gt;</code>	Sample <sup>superscript</sup>
<code>&lt;sub&gt;&lt;/sub&gt;</code>	Sample <sub>subscript</sub>
<code>&lt;strong&gt;&lt;/strong&gt;</code>	<b>strong</b>
<code>&lt;em&gt;&lt;/em&gt;</code>	<i>emphasized</i>
<code>&lt;pre&gt;&lt;/pre&gt;</code>	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

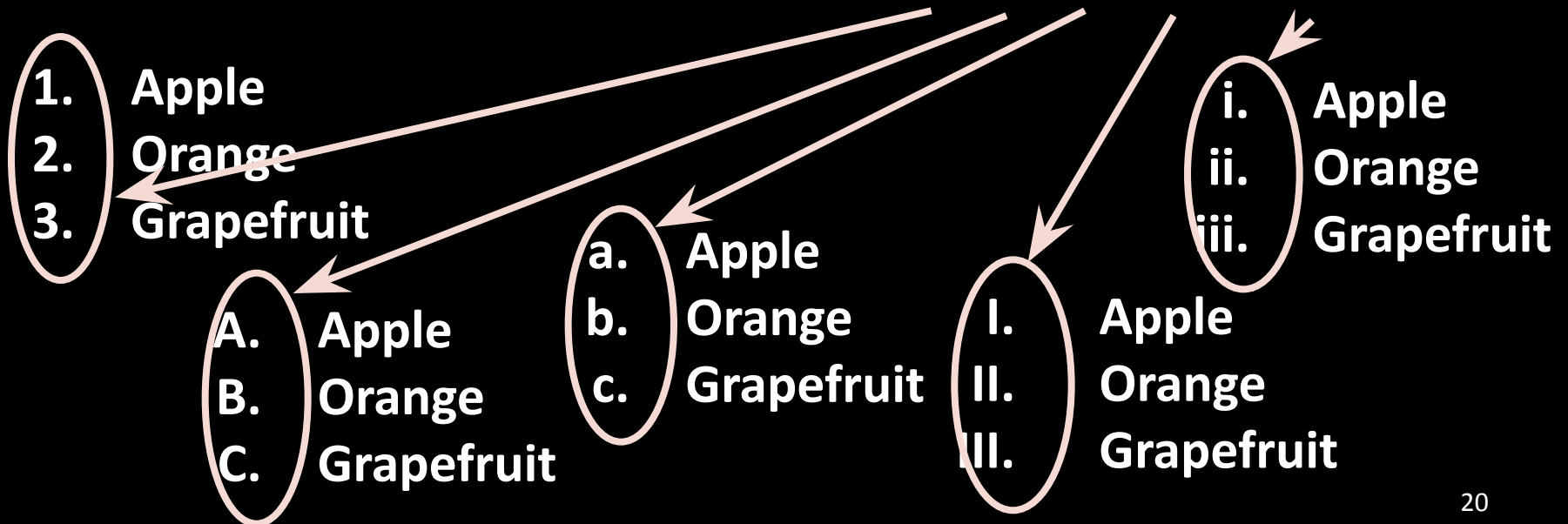
```
<div style="background: skyblue;">  
  This is a div</div>
```

# 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

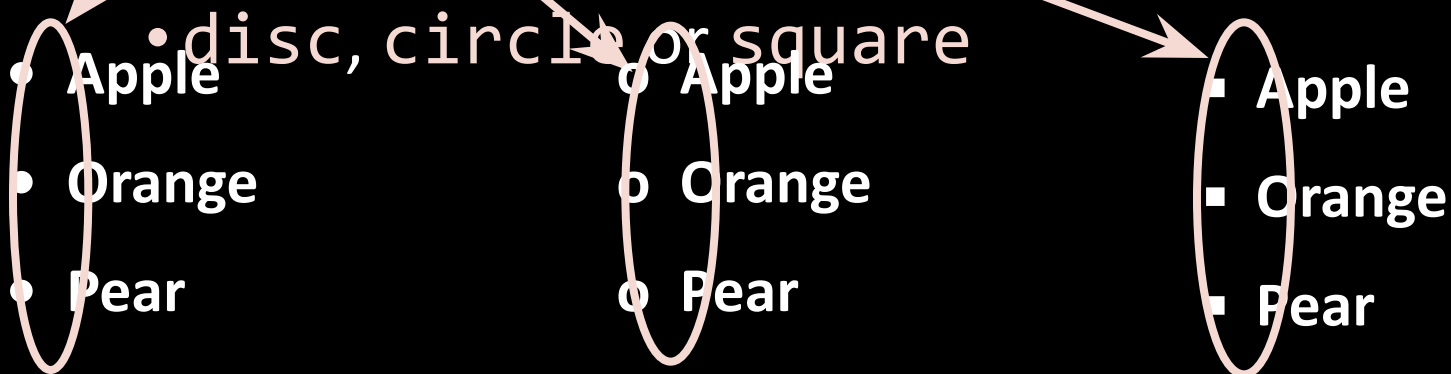


# Unordered Lists: <ul> Tag

- 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:



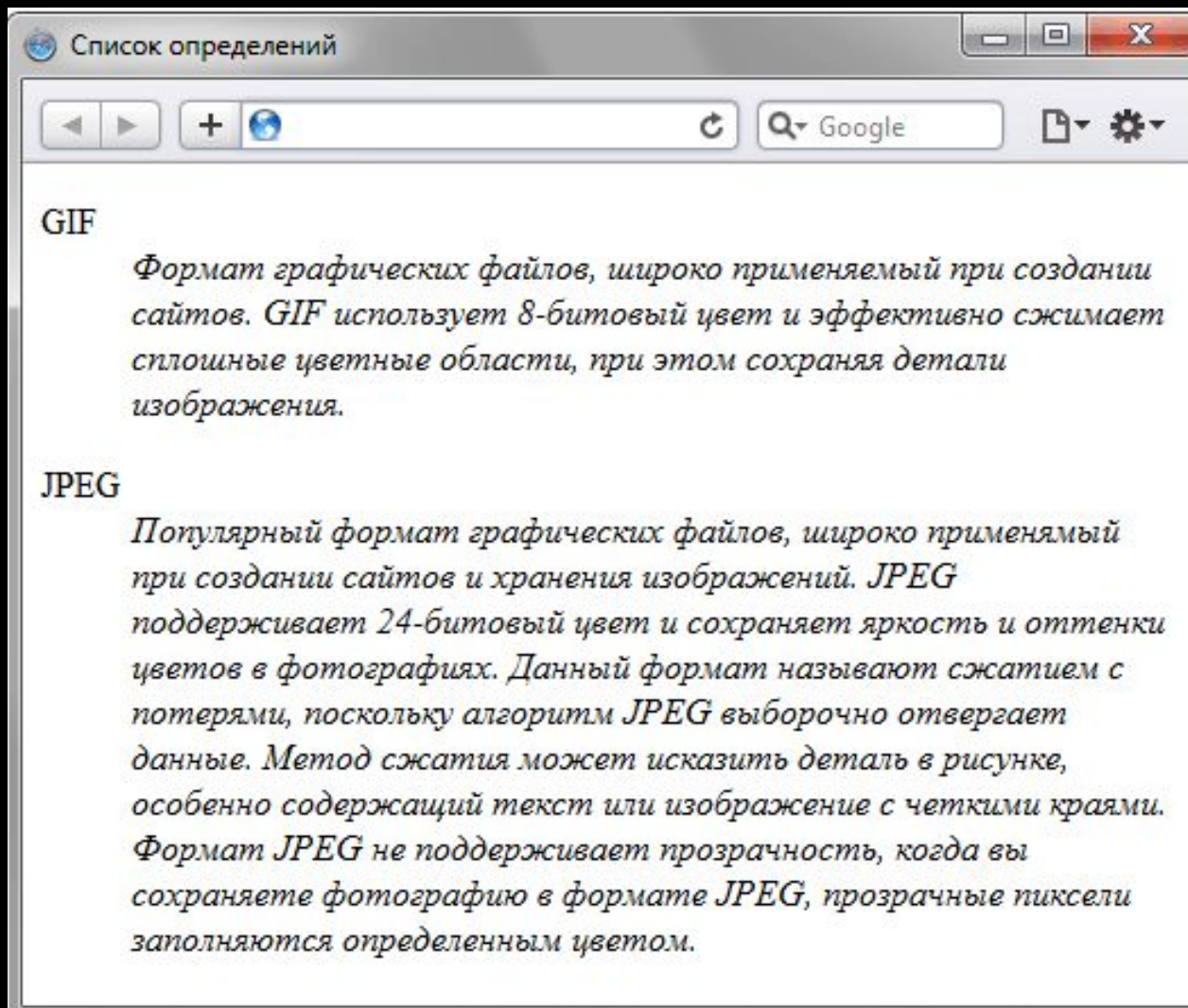
# Definition lists: <dl> tag

- 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 ...</dd>  
  <dt>CSS</dt>  
  <dd>Language used to ...</dd>  
</dl>
```

- Renders without bullets
- Definition is indented

# Definition list



Список определений

← → + 🌐 ↻ 🔍 Google 📄 ⚙️

**GIF**

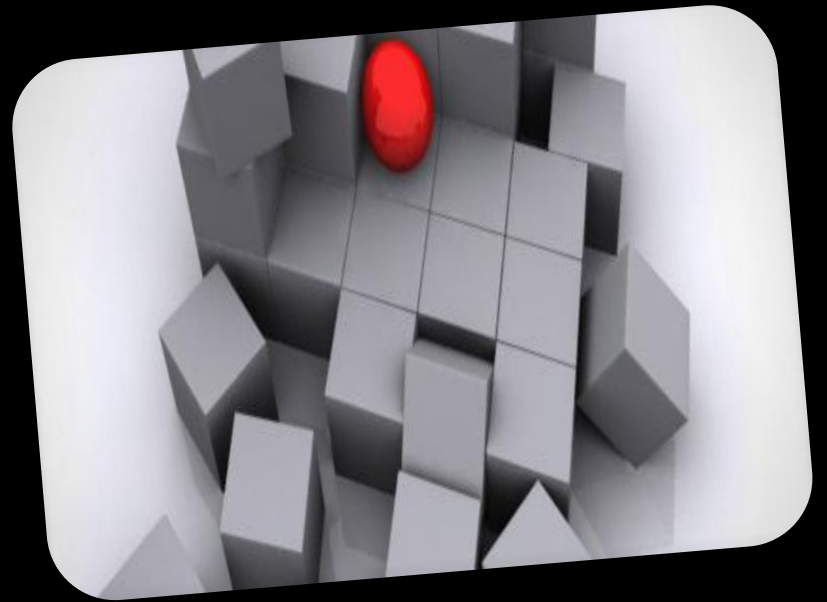
*Формат графических файлов, широко применяемый при создании сайтов. GIF использует 8-битовый цвет и эффективно сжимает сплошные цветные области, при этом сохраняя детали изображения.*

**JPEG**

*Популярный формат графических файлов, широко применяемый при создании сайтов и хранения 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
```



# Section Elements

The <div> and The <span>



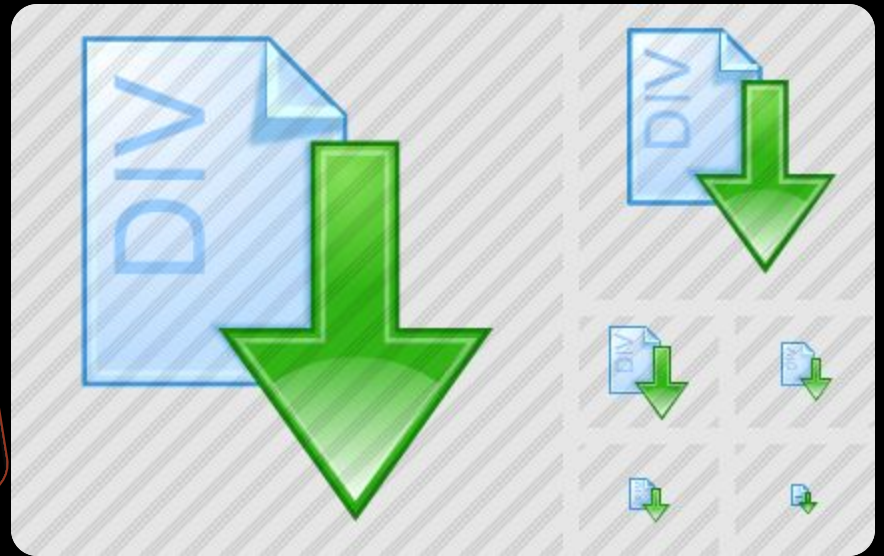
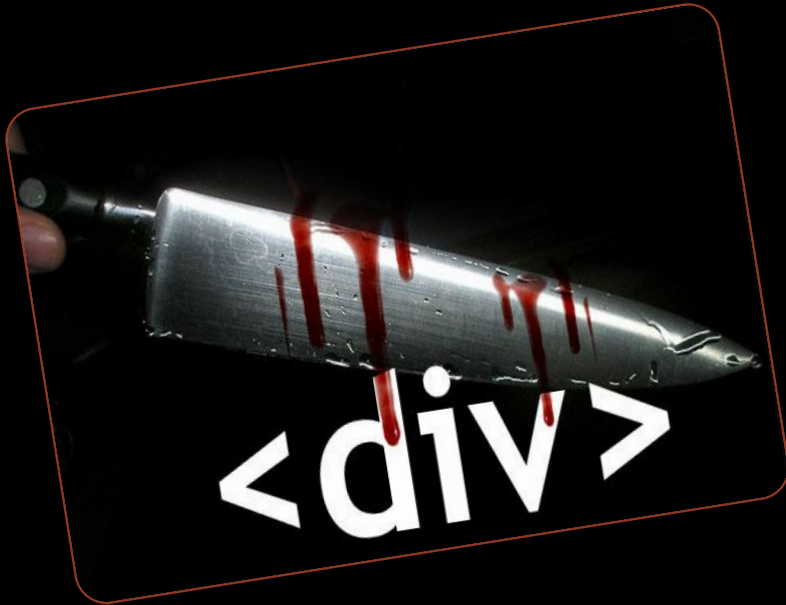
# The <div> Tag

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



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

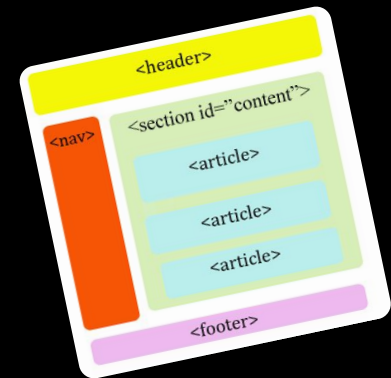
```
<p>This one is <span style="color:red;  
font-weight:bold">only a test</span>.</p>
```



`<DIV>`

Live Demo

`<DIV>`



# 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

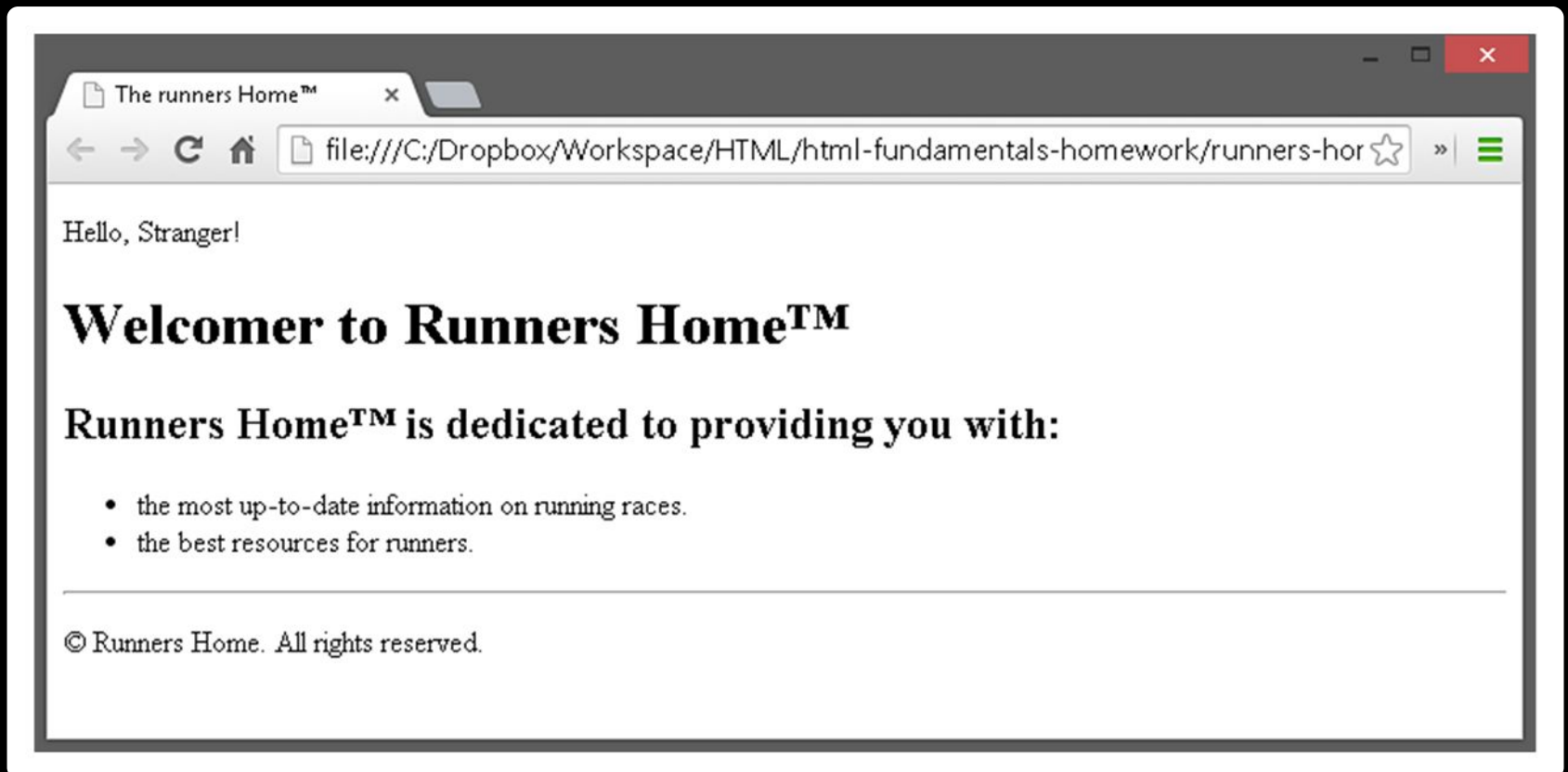


# Remember

- 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
    - Nested Item 2.2.1
    - Nested Item 2.2.2
      - Nested Item 2.2.2.1
      - Nested Item 2.2.2.2
    - 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

