HTML and CSS Overview

HTML Basic Tags, CSS Introduction

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HTML (HYPERTEXT MARKUP LANGUAGE)

What is HTML?

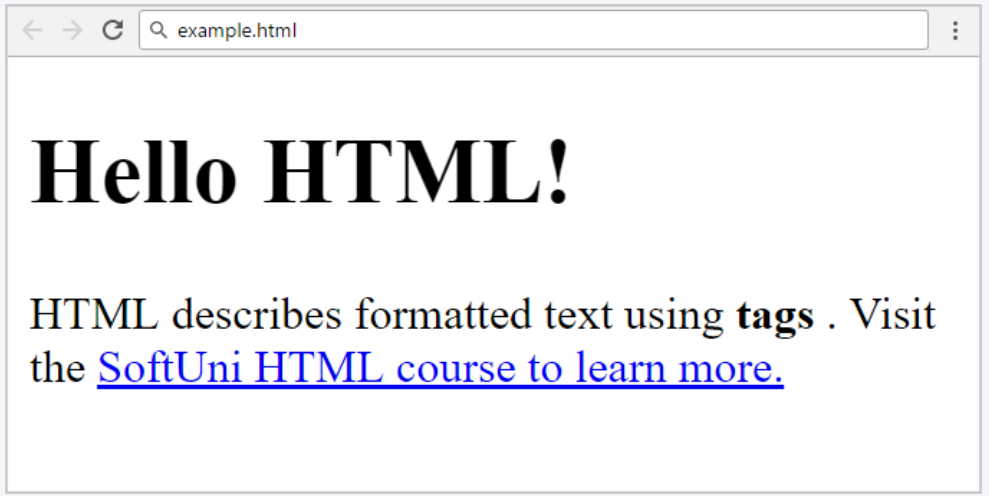
What is HTML?

- The HTML language describes Web content (Web pages)
  - Text with formatting, images, lists, hyperlinks, tables, forms, etc.
  - Uses **tags** to define **elements** in the Web page

Document content goes here…

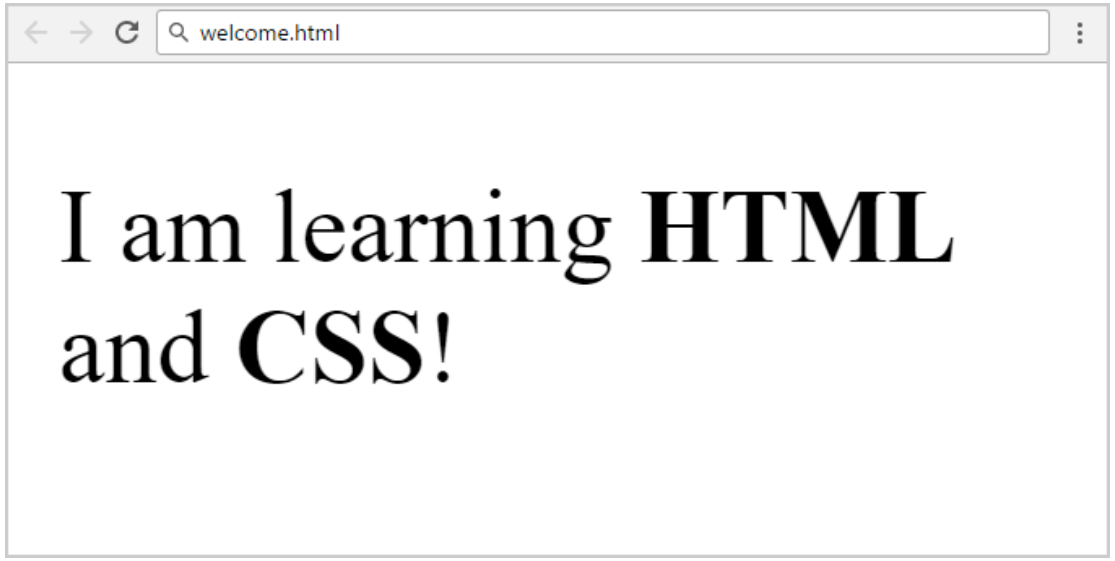
HTML Page – Example

```
<!DOCTYPE html>
<html>
  <head>
    <meta charset="UTF-8">
    <title>HTML Example</title>
  </head>
  <body>
    <h1>Hello HTML!</h1>
    <p>HTML describes formatted text using <strong>tags
</strong>. Visit the <a href="https://softuni.bg/trainings/
courses">SoftUni HTML course to learn more.</a></p>
  </body>
</html>
```



Problem: Welcome to HTML

- Create your first HTML page
  - File name: **`welcome.html`**
  - Title: Welcome
  - Paragraph of text:
    I am learning **HTML** and **CSS**!

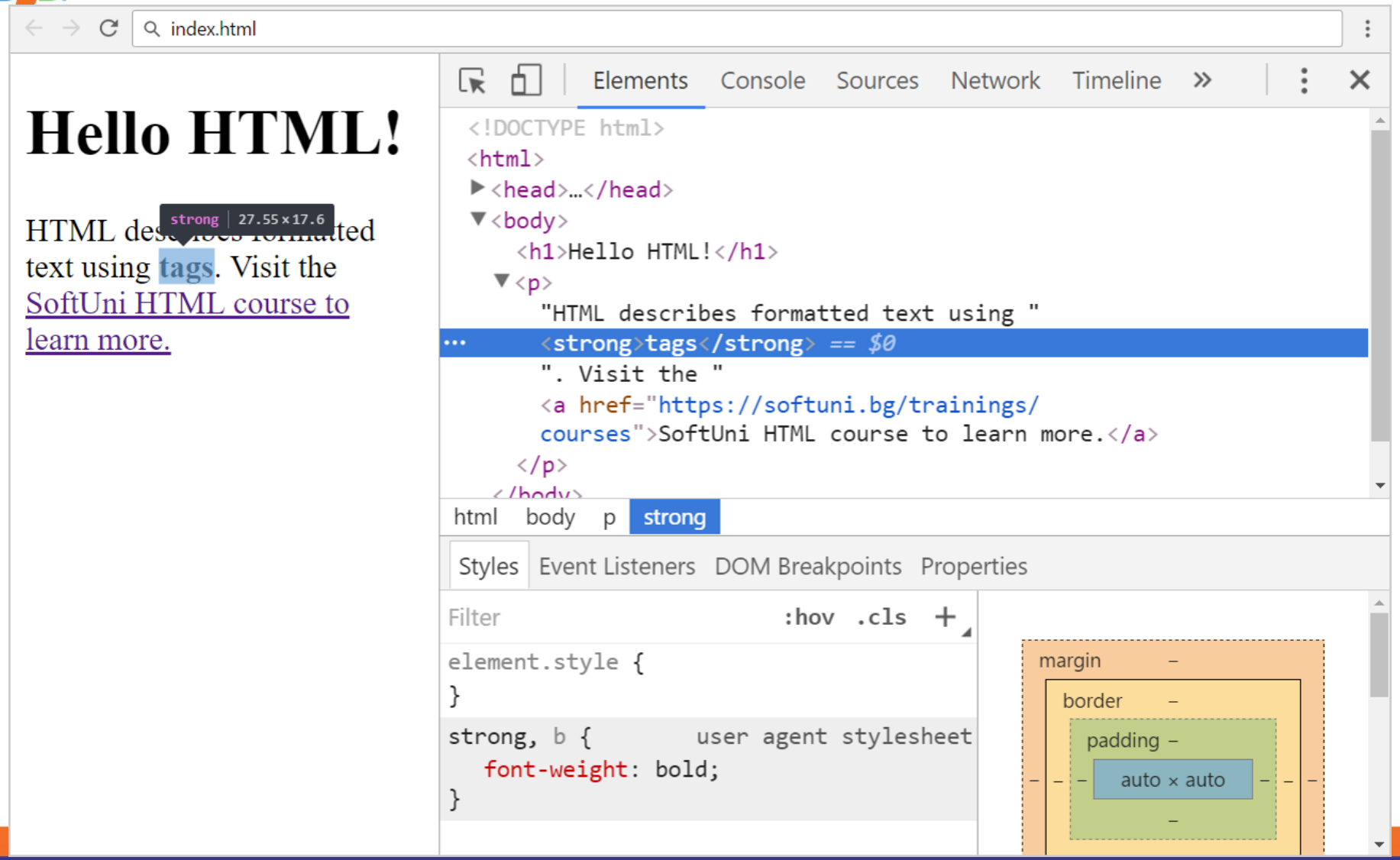


- Hints:
  - Modify the code from the previous slide, use **`<strong>`** tag
  - Submit the page in the judge: **`welcome.html`** in a **ZIP file**

HTML – Developer Environments

- WebStorm
  - Powerful IDE for HTML, CSS and JavaScript, paid product
- Visual Studio
  - Many languages and technologies, Windows & Mac
- Visual Studio Code, Brackets, NetBeans
  - Good free tools for HTML5, cross-platform
- Sublime Text, Vim, Notepad++
  - For hackers

Developer Tools: [F12] in the Browser



Zen Coding (Emmet) for Fast HTML Coding

```
ul>li.red*6
```

```
<ul>
  <li class="red"></li>
  <li class="red"></li>
  <li class="red"></li>
  <li class="red"></li>
  <li class="red"></li>
  <li class="red"></li>
</ul>
```

```
div#page>div.logo+ul#menu>li
*3>a
```

```
<div id="page">
  <div class="logo"></div>
  <ul id="menu">
    <li><a href=""></a></li>
    <li><a href=""></a></li>
    <li><a href=""></a></li>
  </ul>
</div>
```

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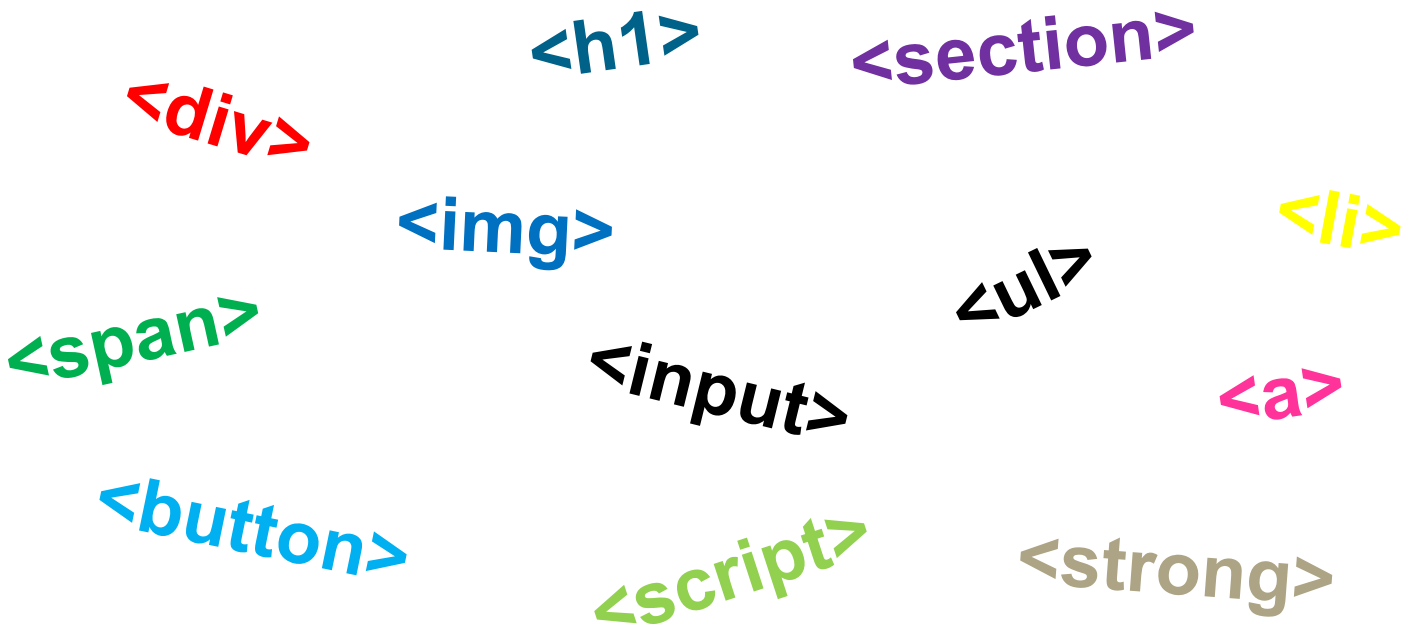
HTML COMMON ELEMENTS

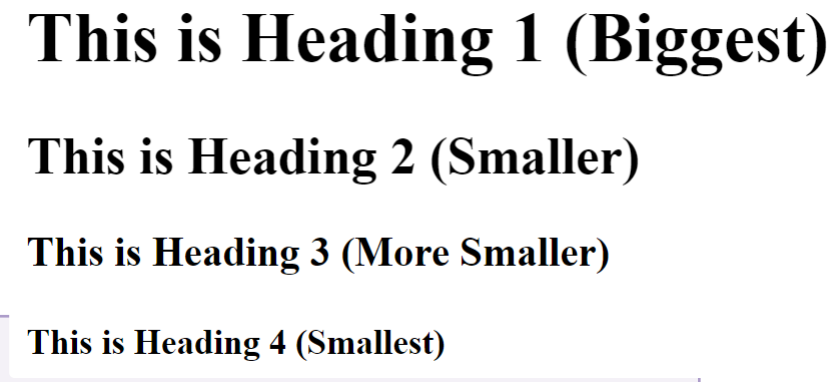


Used in 90% of All Internet Sites

Headings and Paragraphs

- Headings: **<h1>** to **<h6>**

```
<h1>This is Heading 1 (Biggest)</h1>
<h2>This is Heading 2 (Smaller)</h2>
<h3>This is Heading 3 (More Smaller)</h3>
<h4>This is Heading 4 (Smallest)</h4>
```



- Paragraphs: ** **

```
<p>First paragraph</p>
<p>Second paragraph</p>
<br /> <!-- empty line -->
<p>Third paragraph</p>
```

Comment

First paragraph

Second paragraph

Third paragraph

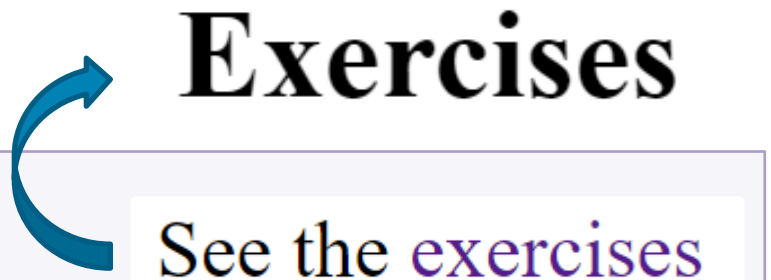
Hyperlinks

- External hyperlink

Specify the URL

```
<a href="https://google.com">Google</a>
```

- Local hyperlink




```
<h1 id="exercises">Exercises</h1>
…
See the <a href="#exercises" target="_blank">exercises</a>
```

- Relative hyperlink

presentation

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

Images

- Images are external files, inserted through the **<img>** tag

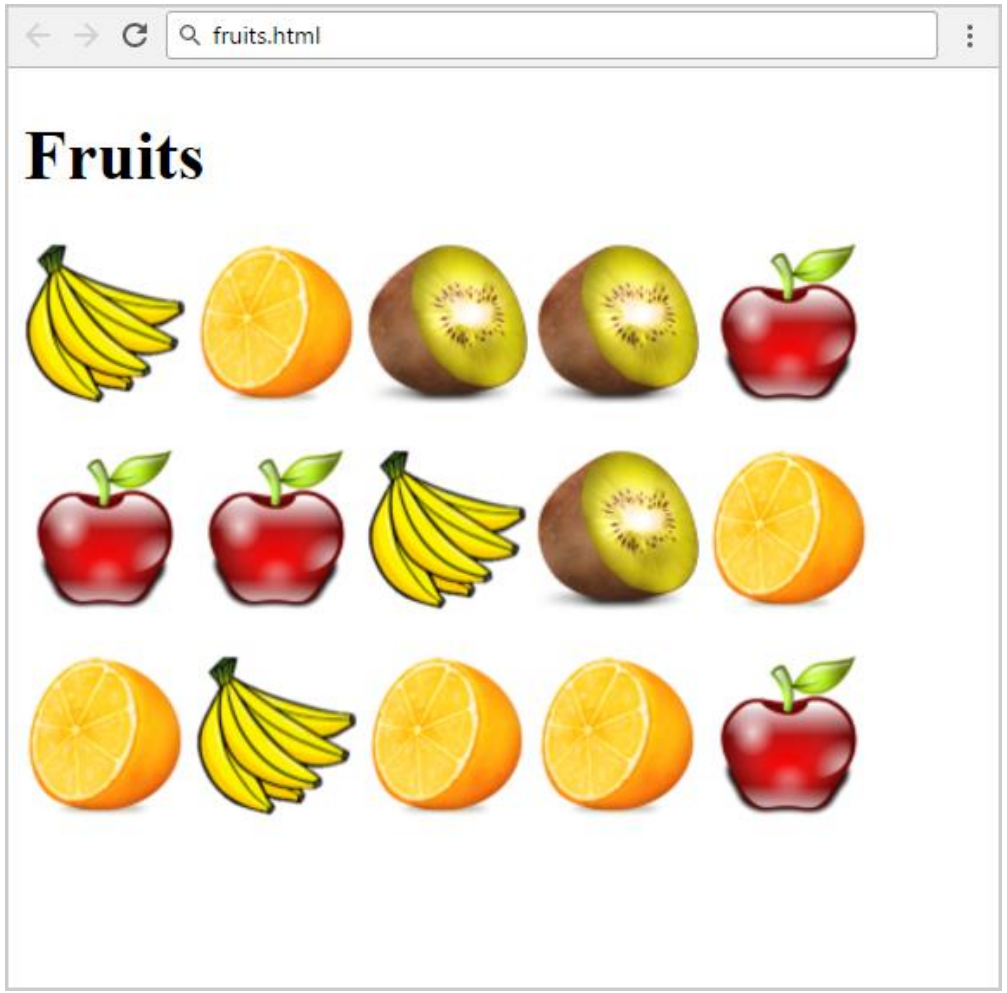
```
<img
  src="images/logo.png"
  width="400"
  height="313" />
```

- Embedded image (Data URI)

```
<img src=" R0lGODlhEAAOAL…"/>
```

Problem: Fruits

- You are given 4 image files:
  - **`apple.png`**, **`banana.png`**, **`kiwi.png`**, **`organge.png`**
- Create a Web page like the screenshot on the right
  - Hints: use 3 paragraphs, each holding 5 images



Ordered Lists: <ol> Tag

- Create an **O**rdered **L**ist
- Use `<ol></ol>`
  - Each holding `<li></li>`

```
<ol type="1">
  <li>One</li>
  <li>Two</li>
  <li>Three</li>
</ol>
```

1. One
2. Two
3. Three

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

1. One
2. Two
3. Three

A. One
B. Two
C. Three

a. One
b. Two
c. Three

I. One
II. Two
III. Three

i. One
ii. Two
iii. Three

Unordered Lists: <ul> Tag

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

```
<ul type="disc">
  <li>First item</li>
  <li>Second item</li>
  <li>Third item</li>
</ul>
```

- First item
- Second item
- Third item

- Attribute values for `type` are: `disc`, `circle`, `square` and `none`

- First item
- Second item
- Third item

- First item
- Second item
- Third item

- First item
- Second item
- Third item

First item
Second item
Third item

Definition Lists: <dl> Tag

- Create definition lists using **<dl>**
  - Holds terms (**<dt>**) with their definitions (**<dd>**)

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

Problem: Wiki Page

- Create the following HTML page:

(page continues here …)

wiki-page.html

The Brown Bear

The brown bear (Ursus arctos) is native to parts of northern Eurasia and North America. Its conservation status is currently "Least Concern." There are many subspecies within the brown bear species, including the Atlas bear and the Himalayan brown bear.

Learn More

Here are some bear species:

- Arctos
- Collarus
- Horribilis
- Nelsoni (extinct)

wiki-page.html

The following countries have the largest populations of brown bears:

1. Russia
2. United States
3. Canada

Hints: Wiki Page

- File name: **`wiki-page.html`**
- Title: **`The Brown Bear`**
  - Use **`<h1>`**
- Hyperlink: **https://en.wikipedia.org/wiki/Brown_bear**
- List: use ordered list and unordered list
- Text: use paragraph
- Image: use the file **`bear.jpg`**

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HTML TERMINOLOGY

Tags, Attributes and Elements

HTML Tags, Attributes and Elements

Element ID

Attribute: key = value

```
<a id="link" href="https://google.com">Google</a>
```

Attribute (CSS class)

HTML element

Opening tag

```
<div class="item">
  <img src="books.png" />
  <span>Books</span>
</div>
```

Element body (content)

Closing tag

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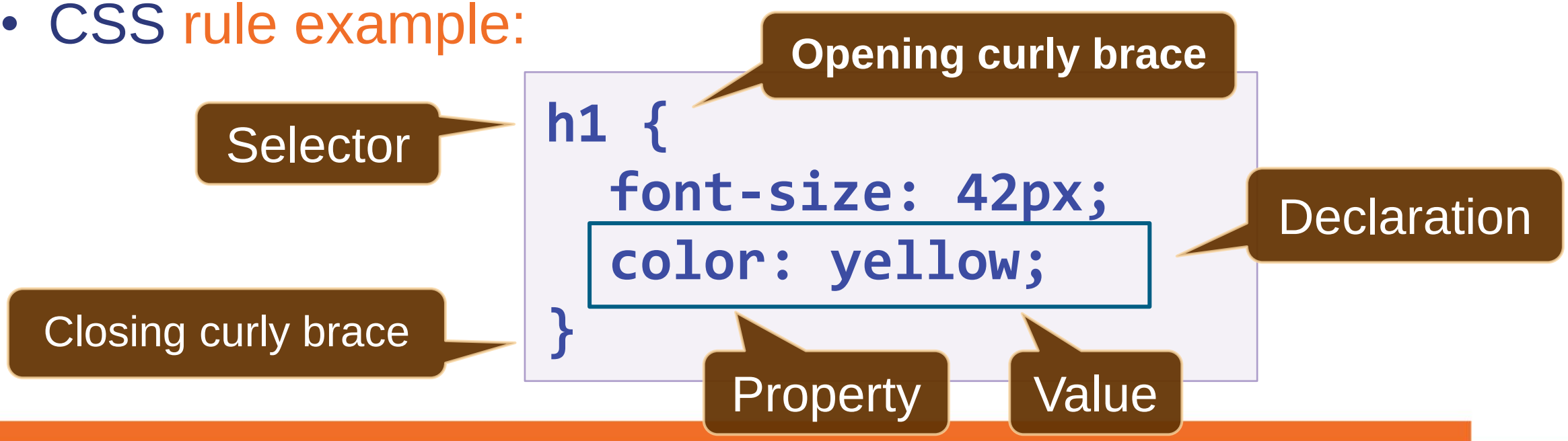
CASCADING STYLE SHEETS

What is CSS?

What is CSS?

- CSS defines styling of the HTML elements
  - Specifies fonts, colors, margins, sizes, positioning, floating, …
  - CSS rules format: **`selector { prop1:val1; prop2:val2; … }`**
- CSS rule example:



Combining HTML and CSS Files (External Style)

using-css.html

```
<!DOCTYPE html>
<html>
  <head>
    <link rel="stylesheet" type="text/css"
href="styles.css">
  </head>
  <body class="modern"><p>
    This is a <span class="special"> special
beer</span> for <span class= "special">special
drinkers</span>.</p>
  </body>
</html>
```

styles.css

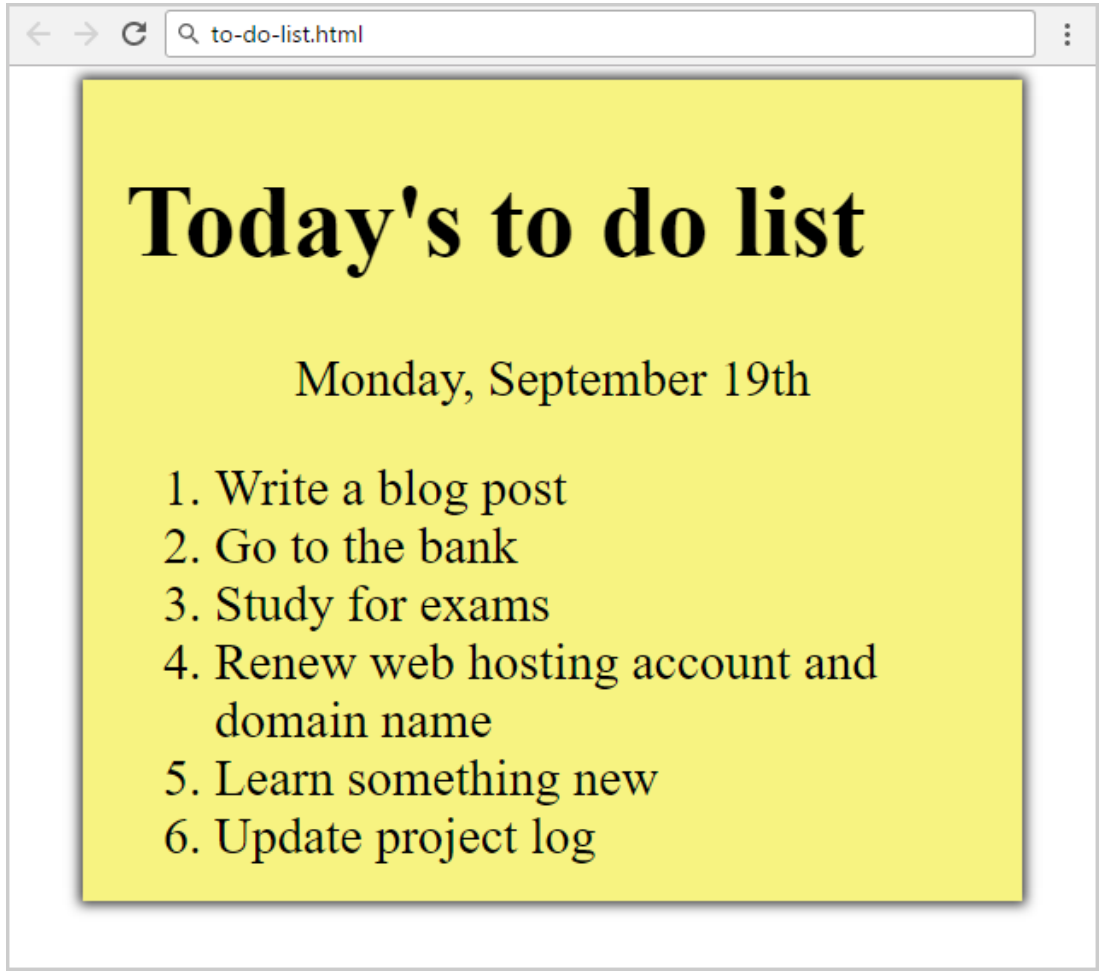
```
.special {
  font-style: italic;
  font-weight: bold;
  color: blue;
}

.modern {
  background: #EEE;
}

p {
  font-size: 24pt;
}
```

Problem: To Do List

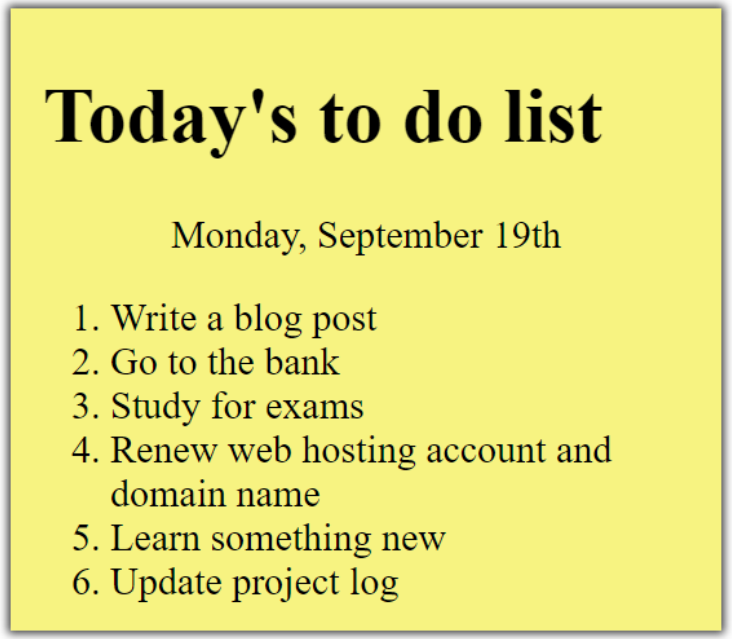
- Create the following page (HTML + CSS files)
- Hints:
  - Container: use **`<div>`**
    - Background color: **`#f7f381`**
  - Heading: use **`<h1>`**
  - Date: use **`<p>`** + center it
  - List: use **`<ol>`**



Solution: To Do List (HTML)

to-do-list.html

```
<!DOCTYPE html>
<html>
  <head><!-- TODO: Link the CSS here --></head>
<body>
  <div class="my-list">
    <h1>Today's to do list</h1>
    <p>TODO: Put day-info here</p>
    <ol>TODO: Put list-item here</ol>
  </div>
</body>
</html>
```



Solution: To Do List (CSS)

to-do-list.css

```
.my-list {
  margin: 0 auto;
  padding: 8px 24px;
  width: 500px;
  font-size: 30px;
  border: 1px solid #f7f381;
  background: #f7f381;
  box-shadow: 0 0 10px 2px #333333;
}
```

to-do-list.css

```
.my-list ol {
  margin: 12px;
}

.my-list p {
  text-align: center;
}
```

Inline CSS Style

- The **style** attribute in HTML elements

Attribute "style"

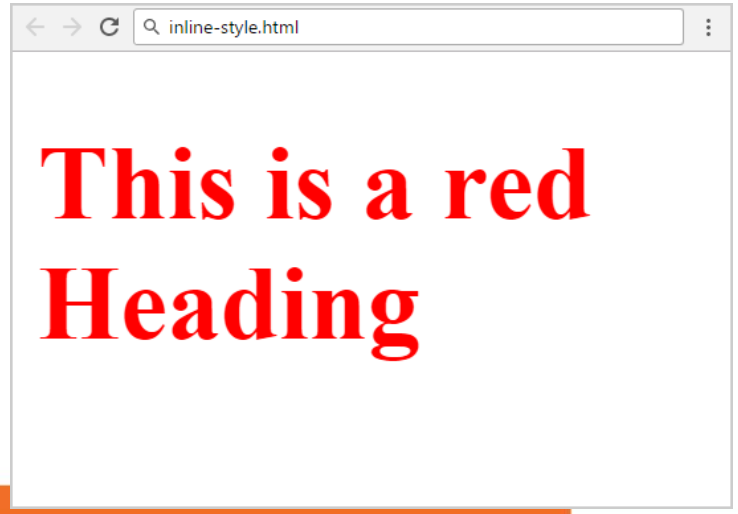
```
<h1 style="color:blue">This is a blue ...
</h1>
```

Property

Value

```
<h2 style="color:red; font-size:2.1em">
  This is a red …
</h2>
```

Multiple CSS declarations



Embedded CSS Styles in the HTML Page

- Put a **<style>** element in the HTML **<head>** section

```
<!DOCTYPE html>
<html>
<head>
  <style>
    .red {
      color:red;
    }
  </style>
</head>
</html>
```

```
<body>
  <p class="red">This is red</p>
</body>
```

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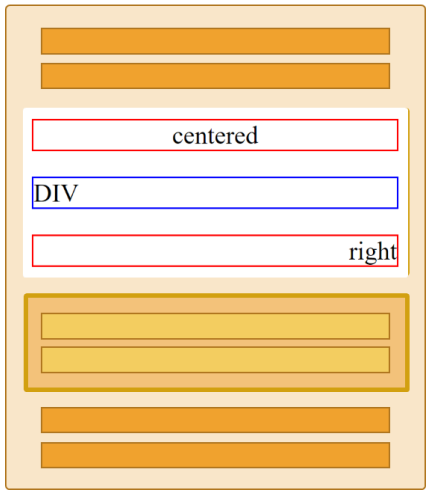
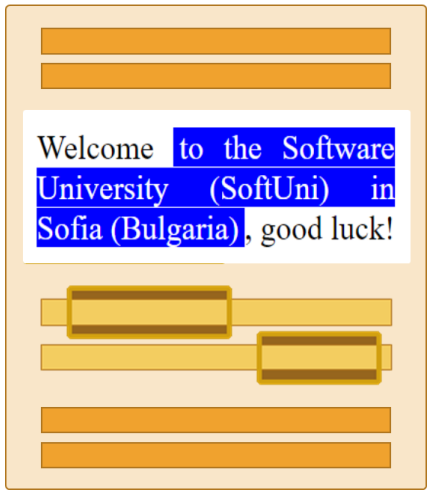
INLINE AND BLOCK ELEMENTS

display: block



display: inline



display: inline-block

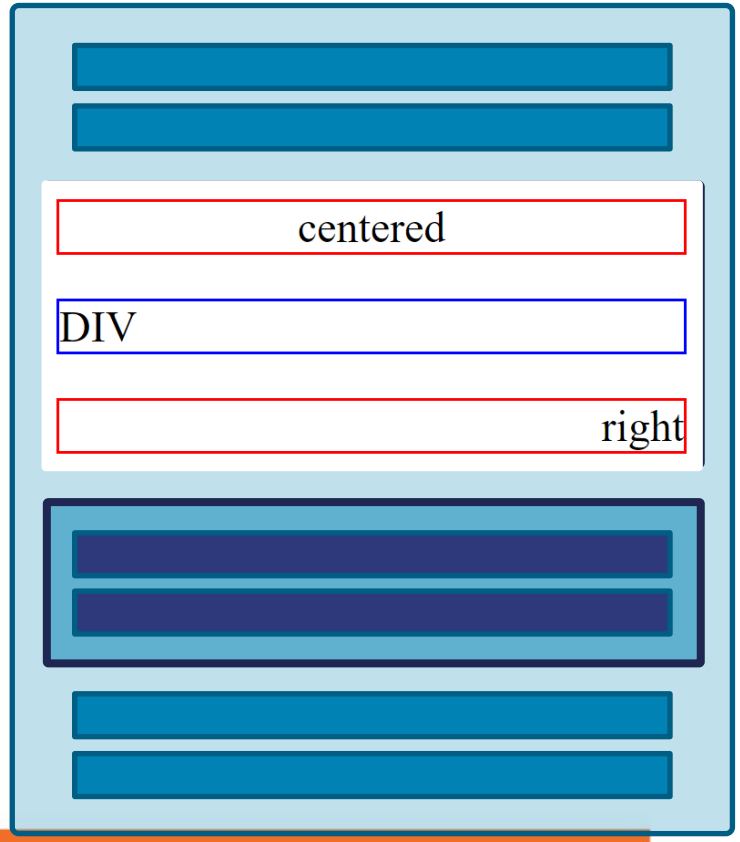
 vs.

Block Elements

- `<div>` and `<p>` are **block** elements (rectangles)
  - Fill the entire container width
  - Stack vertically one after another

```
<p style="border:1px solid red;
text-align:center">centered</p>
<div style="border:1px solid
blue">DIV</div>
<p style="border:1px solid red;
text-align:right">right</p>
```

display: block



Inline Elements

- **** is **inline** element
  - Its shape is not always rectangular
  - Can be split across multiple lines

```
<p style="text-align:justify">
Welcome <span style="color:white;
background:blue; padding-right:3px;
padding-left:3px;">to the
University of Greenwich </span>,
good luck!</p>
```

Inline-Block Elements

- Elements can be also **inline-block**
  - Rectangles arranged one after another
  - Just like words in a sentence

```
<div style="text-align:justify;">
   <div style="display:inline-block;
   background:green">green</div>
   <div style="display:inline-block;
   background:red">red block</div>
   …
</div>
```

display: inline-block

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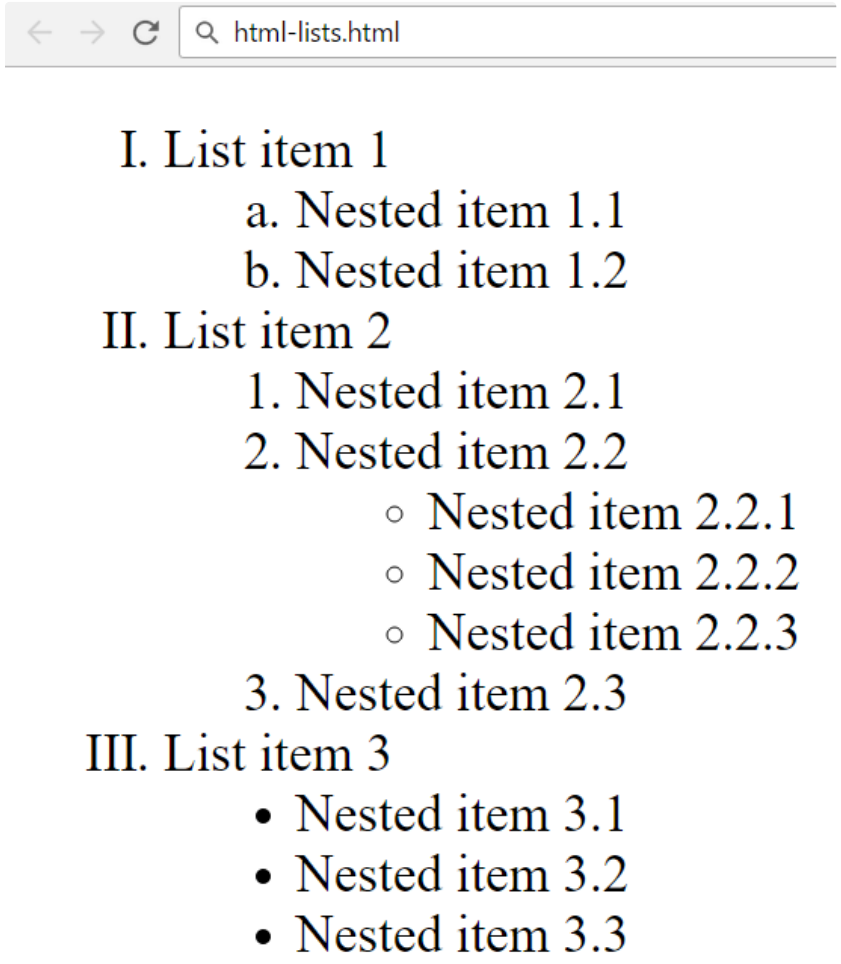
MORE HTML PROBLEMS

Problem: HTML Lists

- Create a HTML page, holding nested lists, like at the example

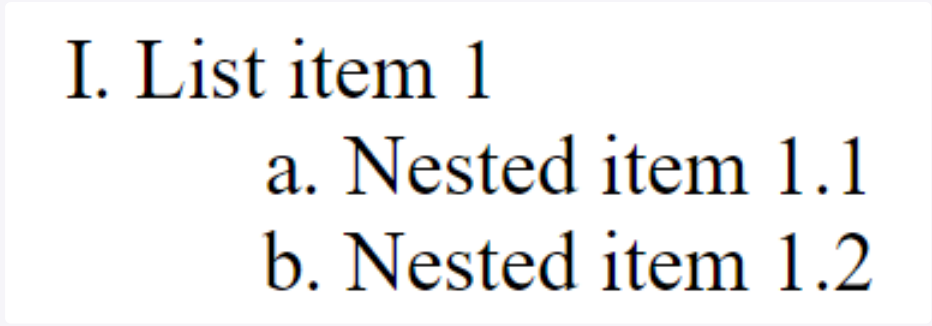
- Hints:
  - Use **`<ol>`** and **`<li>`** for **List Item 1**, **List item 2** and **List Item 3**
  - Use **`<ol>`**, **`<li>`**, **`<ul>`** and **`<li>`** for the nested lists



Solution: HTML Lists

html-lists.html

```
<ol type="I">
  <li>List item 1
    <ol type="a">
      <li>Nested item 1.1</li>
      <li>Nested item 1.2</li>
    </ol>
  </li>
  <!-- TODO: put List item 2 and List item 3 here -->
</ol>
```



Solution: HTML Lists (2)

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html-lists.html

```
<li>List item 2
  <ol type="1">
    <li>Nested item 2.1</li>
    <li>Nested item 2.2
      <ul type="circle">
        <li>Nested item 2.2.1</li>
        <li><!-- TODO: put the next items here--></li>
      </ul>
    </li>
    <li>Nested item 2.3</li>
  </ol>
</li>
```

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 2.2.3
3. Nested item 2.3

Solution: HTML Lists (3)

html-lists.html

```
<li>
  List item 3
  <ul type="disc">
    <li>Nested item 3.1</li>
    <li><!-- TODO: put the next items here --></li>
  </ul>
</li>
```

III. List item 3
- Nested item 3.1
- Nested item 3.2
- Nested item 3.3

Summary

- HTML describe structured content (text, images, tables, figures, etc.)
- Commonly used HTML tags:
  - **<html>**, **<head>**, **<body>**, **<p>**, **<h1>**, **<h2>**, **<h3>**, …, **<ol>**, **<ul>**, **<li>**, **<a href="…">**, **<img src="…">**, ** **, ****
- ** ** is block element
- **** is inline element
- CSS styles may be: **external**, **inline**, **embedded**