

Web Fundamentals Introduction

Hypertext Markup Language,
Cascading Style Sheets

SoftUni Team
Technical Trainers



Software
University



SoftUni
Foundation



Software University
<http://softuni.bg>

Table of Content

1. HTML Basics
 - What is HTML? Common tags in HTML
2. Common Tags in HTML
 - Widely Used Tags in Most Websites
3. HTML Form Elements
 - Commonly Used Elements When Making Forms
4. CSS (Cascading Style Sheets)
 - Add Style to Your Website





sli.do

#java-web



HTML Basics

What is HTML? Common tags in HTML

What is HTML?

- HTML – HyperText Markup Language
 - A notation for describing
 - document structure (semantic markup)
 - formatting (presentation markup)
- The markup tags provide meta-information about the page content and define its structure
- A HTML document consists of many tags (with nesting)



- **Tags** – the smallest piece in HTML
- **Attributes** – properties of the tag, e.g. size, color, etc...
- **Elements** – combination of opening, closing tag and attributes

Opening tag

Attribute: **key = "value"**

```
<a href="/home">
```

Navigate to

```
<b>home page</b>
```

```
</a>
```

Element

Closing tag

Your First HTML Page – Example

```
<!DOCTYPE html>
```

Defines this
document to be
HTML5

Your First HTML Page – Example

```
<!DOCTYPE html>
<html>
    The root element of  
an HTML page
    <head>
        <title>My First Page</title>
    </head>
    <body>
        <h1>Hello World!</h1>
        <p>This is my first HTML page.</p>
    </body>
</html>
```

Note: Almost every HTML tag must be closed

Your First HTML Page – Example

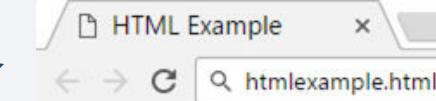
```
<!DOCTYPE html>
<html>
  <head>
    </head>
  </html>
```

Contains meta
information about the
document

Your First HTML Page – Example

```
<!DOCTYPE html>
<html>
  <head>
    <title>HTML Example</title>
  </head>
</html>
```

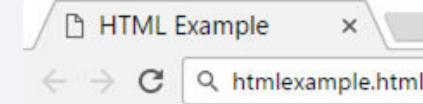
Specifies a title for the document



Your First HTML Page – Example

```
<!DOCTYPE html>
<html>
  <head>
    <title>HTML Example</title>
  </head>
  <body>
    ...
  </body>
</html>
```

Contains the visible
page content



Your First HTML Page – Example

```
<!DOCTYPE html>
<html>
  <head>
    <title>HTML Example</title>
  </head>
  <body>
    <h1>Hello HTML!</h1>
  </body>
</html>
```



Defines a large heading

Your First HTML Page – Example

```
<!DOCTYPE html>
<html>
  <head>
    <title>HTML Example</title>
  </head>
  <body>
    <h1>Hello HTML!</h1>
    <p>HTML describes formatted text using tags.</p>
  </body>
</html>
```



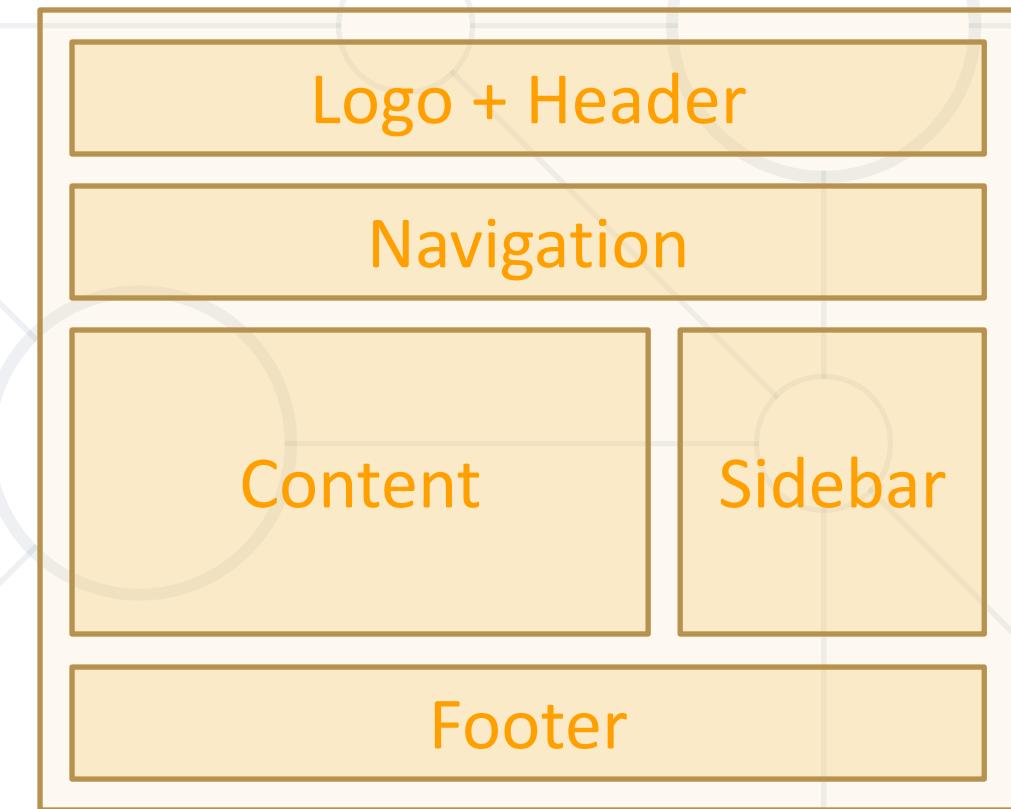
A diagram illustrating the process of rendering HTML. On the left, the raw HTML code is shown. A large blue arrow points from this code to a central circle. From this circle, three arrows point to the browser window on the right. The browser window has a title bar "HTML Example" and a URL bar "htmlexample.html". Inside the window, the text "Hello HTML!" is displayed in a large font, followed by the explanatory text "HTML describes formatted text using tags.".

Defines a paragraph

Using HTML5 To Create a Structure

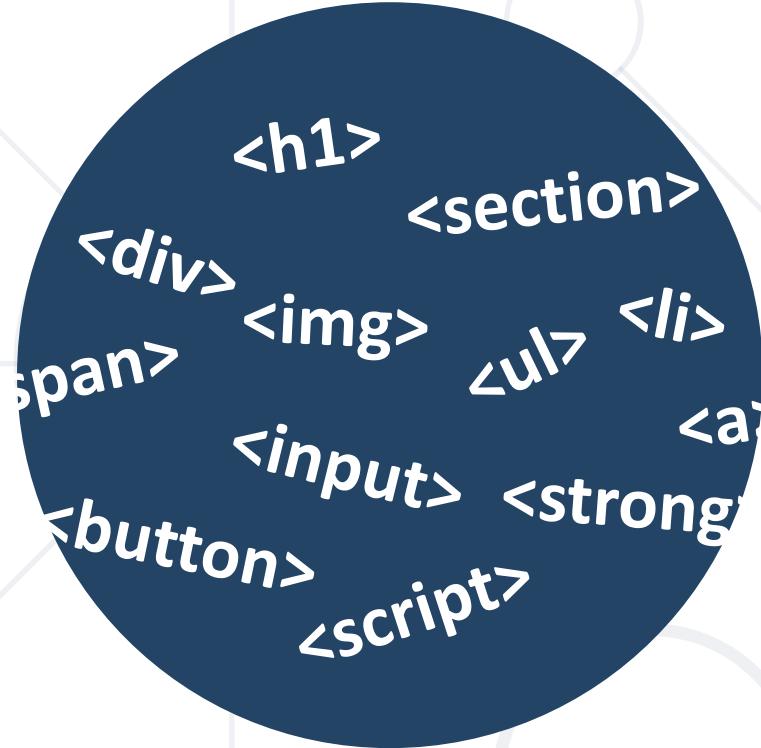
- In HTML5 there are semantic tags for layout
 - **<header>, <footer>, <nav>, <aside>, <section>**

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



Common Tags in HTML

Widely Used Tags in Most Websites



Headings

- Headings:

```
<h1>First Heading (Biggest)</h1>
<h2>Second Heading (Smaller)</h2>
<h3>Third Heading (Even Smaller)</h3>
<h4>Fourth Heading (Smallest)</h4>
```

First Heading (Biggest)
Second Heading (Smaller)
Third Heading (Even Smaller)
Fourth Heading (Smallest)

- Headings help with page structure, as in Microsoft Word
- Html has six different HTML headings
 - **<h1>** defines the most important heading.
 - **<h6>** defines the least important heading.

Paragraphs

- Paragraphs:

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

Comment

First paragraph

Second paragraph

Third paragraph

- The `<p>` tag defines a paragraph
- The `
` tag defines a line break

Bullets and Numbered Lists

```
<ul>
  <li>First item</li>
  <li>Second item</li>
  <li>Third item</li>
</ul>
```

- First item
- Second item
- Third item

```
<ol>
  <li>One</li>
  <li>Two</li>
  <li>Three</li>
</ol>
```

1. One
2. Two
3. Three

Hyperlinks

- Created by using the `<a>` tag

```
<a></a>
```

- The actual address is specified in the `href=""` attribute

```
href="https://softuni.bg"
```

- External hyperlink

```
<a href="https://softuni.bg">SoftUni</a>
```

SoftUni

Local Hyperlinks

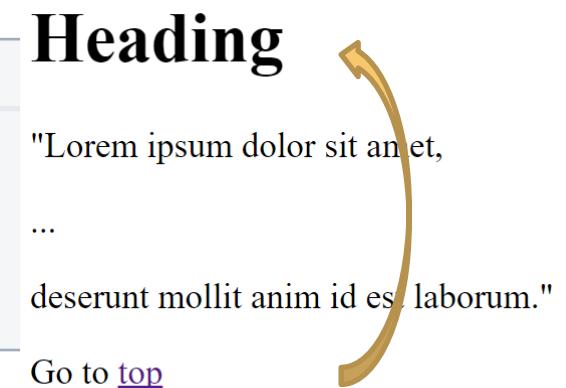
- Local hyperlink – link to the same web site

```
<a href="welcome.html">Review "welcome.html"</a>
```



- Local links can point to the same page

```
<h1 id="top">Heading</h1>
...
Go to <a href="#top" target="_self">top</a>
```



Images

- Images are external files, inserted through the `` tag

```

```

Image URL

- Images are external files, inserted through the `` tag

```

```

Alternative text
(displayed if the image
fails to load)

Images

- Images are external files, inserted through the `` tag

```

```

Image Dimensions
(Measured in Pixels)



Tables

`<table>`

Tables are defined with
the `<table>` tag

`</table>`

Tables

`<table>`

`<tr>`

Defines a table row

`</tr>`

`</table>`

Tables

```
<table>
  <tr>
    <th>Firstname</th>
    <th>Lastname</th>
    <th>Age</th>
  </tr>
</table>
```

Defines a table header

Firstname	Lastname	Age
-----------	----------	-----

Tables

```
<table>
  <tr>
    <th>Firstname</th>
    <th>Lastname</th>
    <th>Age</th>
  </tr>
  <tr>
    <td>Jill</td>
    <td>Smith</td>
    <td>50</td>
  </tr>
</table>
```

Firstname	Lastname	Age
Jill	Smith	50

Defines a table cell

Table Attributes

```
<table border="1">
  <tr>
    <th>Month</th>
    <th>Savings</th>
  </tr>
  <tr>
    <td>January</td>
    <td>$100</td>
  </tr>
  <tr>
    <td>February</td>
    <td>$80</td>
  </tr>
</table>
```

Defines whether the table border should be visible

Month	Savings
January	\$100
February	\$80

Note: The border attribute is not supported in HTML5.

Table Attributes (2)

<h2>Cell that spans two columns:</h2>

<table>

<tr>

<th>Name</th>

<th colspan="2">Telephone</th>

</tr>

<tr>

<td>Bill Gates</td>

<td>55577854</td>

<td>55577855</td>

</tr>

</table>

Defines how many columns
the cell will span

Cell that spans two columns:

Name	Telephone	
Bill Gates	55577854	55577855

Table Attributes (3)

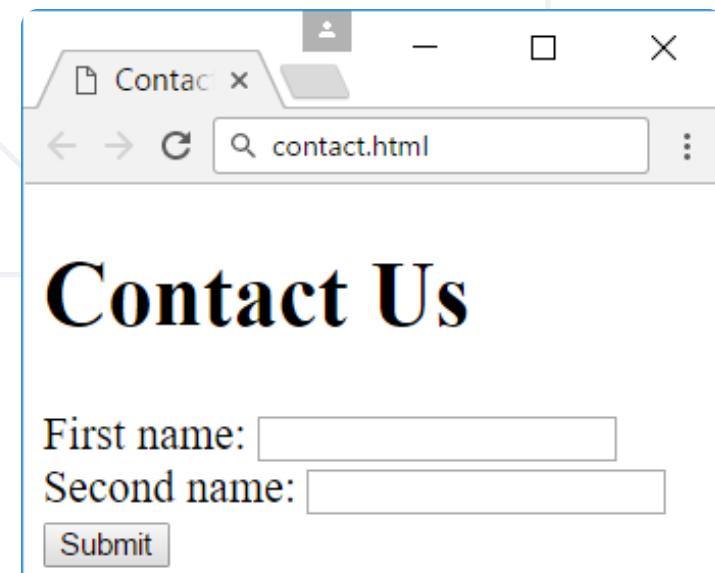
```
<table>
  <tr>
    <th>Name:</th>
    <td>Bill Gates</td>
  </tr>
  <tr>
    <th rowspan="2">Telephone:</th>
    <td>55577854</td>
  </tr>
  <tr>
    <td>55577855</td>
  </tr>
</table>
```

Name:	Bill Gates
Telephone:	55577854
	55577855

Defines how many rows
the cell will span

- HTML forms allow user to fill data and send it to the server
 - Input fields can hold text, number, date, radio button, checkbox, ...
- Creating a contact form:

```
<form>
  First name: <input type="text" name="firstname"><br>
  Last name: <input type="text" name="lastname"><br>
  <input type="submit" value="Submit">
</form>
```



Hello HTML!

I am **Maria**. I am from [Pleven](#).

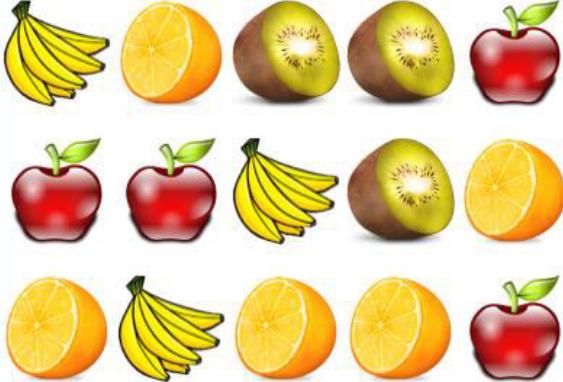
I study *Software Technologies* at [SoftUni](#).

My TODO List

- HTML5 course @ SoftUni
- Homework HTML & CSS
- Tech

I am learning **HTML** and **CSS**

Fruits



Live Problems in Class (Lab)

Basic HTML Tags

EMAIL:

Payment Options: Credit Card Debit Card PayPal

Where did you hear about us? ▾

Terms and Conditions

SUBMIT

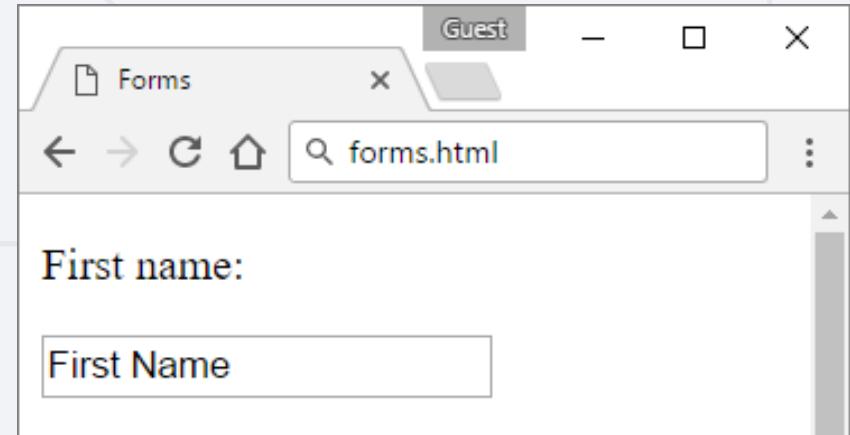
HTML Form Elements

Commonly Used Elements When Making Forms

HTML Input Types (1)

```
<form>  
  <p>First name:</p>  
  <input type="text"  
        value="First Name" />
```

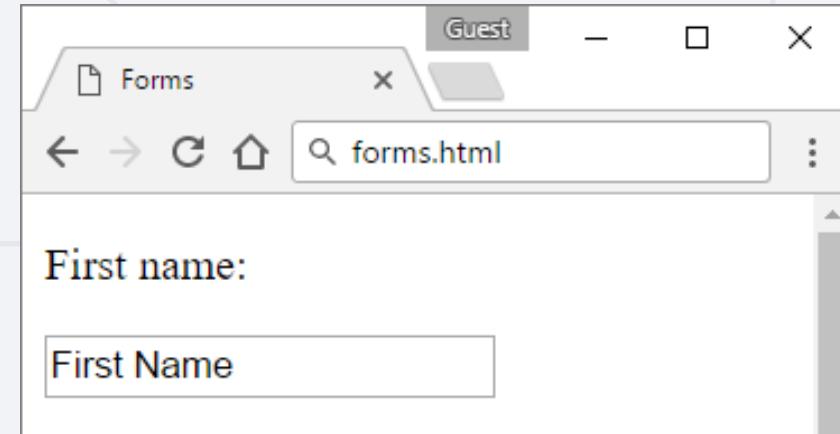
Defines a text input field



HTML Input Types (1)

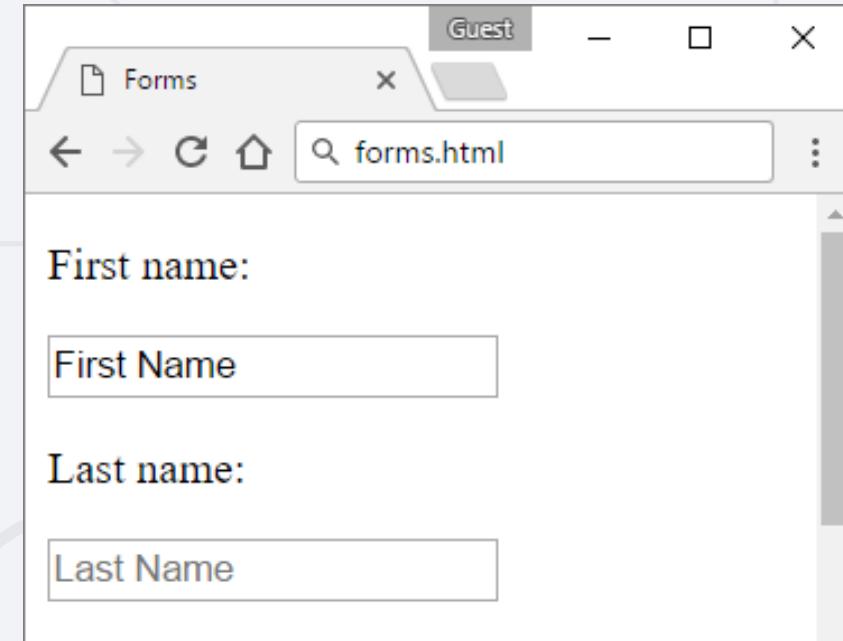
```
<form>  
  <p>First name:</p>  
  <input type="text"  
        value="First Name" />
```

Default text
displayed in the
input field



HTML Input Types (1)

```
<form>
  <p>First name:</p>
  <input type="text"
    value="First Name" />
  <p>Last name:</p>
  <input type="text"
    placeholder="Last Name" />
```

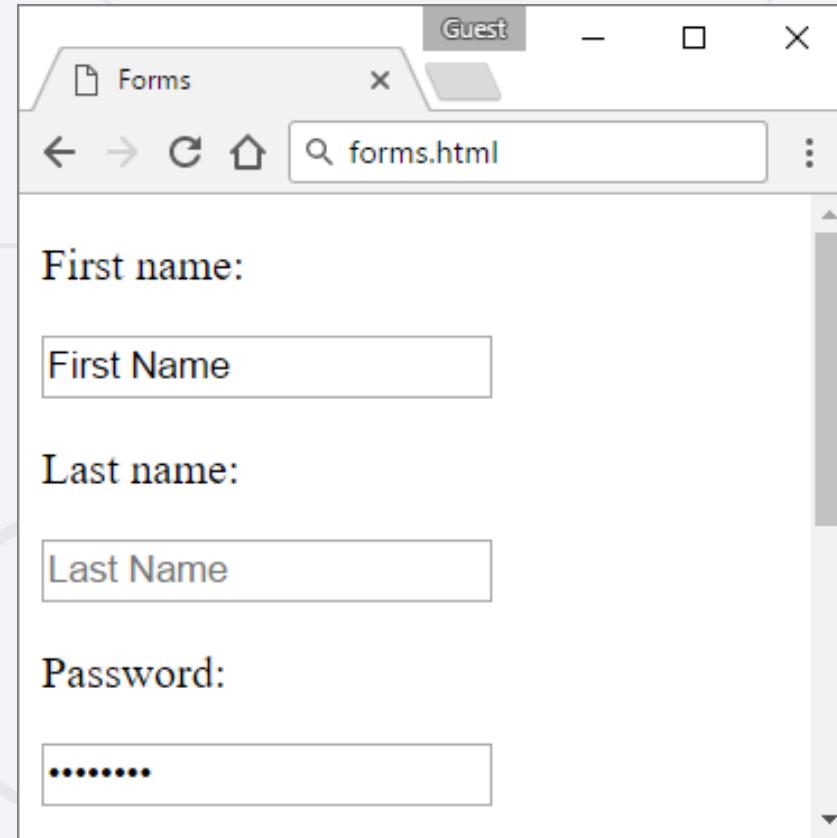


Placeholder text which gets removed upon user input

HTML Input Types (1)

```
<form>
  <p>First name:</p>
  <input type="text"
    value="First Name" />
  <p>Last name:</p>
  <input type="text"
    placeholder="Last Name" />
  <p>Password:</p>
  <input type="password"
    placeholder="Password" />
  <!-- Code continues on next slide -->
```

• • •



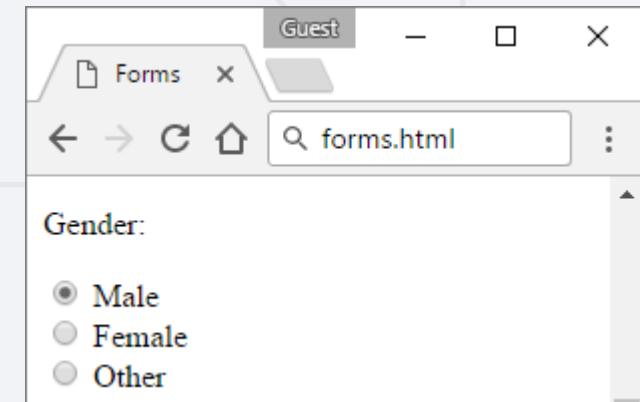
HTML Input Types (2)

NOTE: All radio buttons of a group
MUST share the same name

```
• • •  
<p>Gender:</p>  
<input type="radio" name="gender"/>Male<br/>  
<input type="radio" name="gender"/>Female<br/>  
<input type="radio" name="gender"/>Other<br/>
```

Defines a radio
button

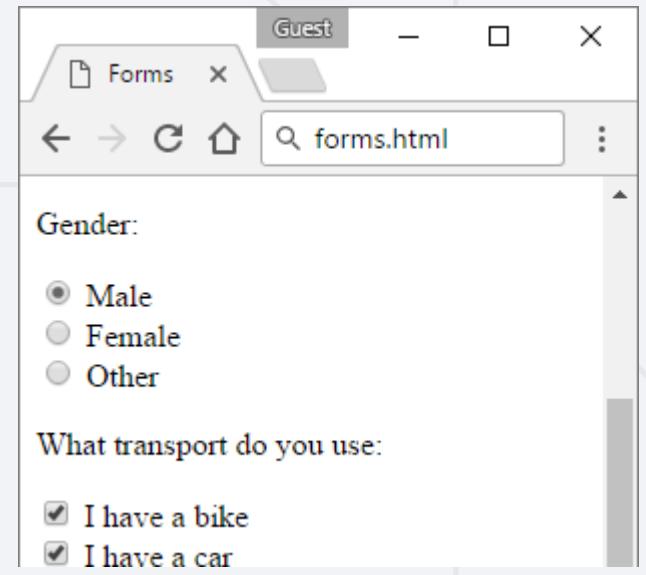
```
</form>
```



HTML Input Types (2)

```
• • •  
<p>Gender:</p>  
<input type="radio" name="gender"/>Male<br/>  
<input type="radio" name="gender"/>Female<br/>  
<input type="radio" name="gender"/>Other<br/>  
  
<p>What transport do you use:</p>  
<input type="checkbox"/> I have a bike  
<br/>  
<input type="checkbox"/> I have a car  
  
</form>
```

Defines a checkbox



The screenshot shows a browser window titled "Guest" with the URL "forms.html". The page contains a form with the following fields:

- A section labeled "Gender:" with three radio buttons: "Male" (selected), "Female", and "Other".
- A section labeled "What transport do you use:" with two checkboxes: "I have a bike" (checked) and "I have a car" (checked).

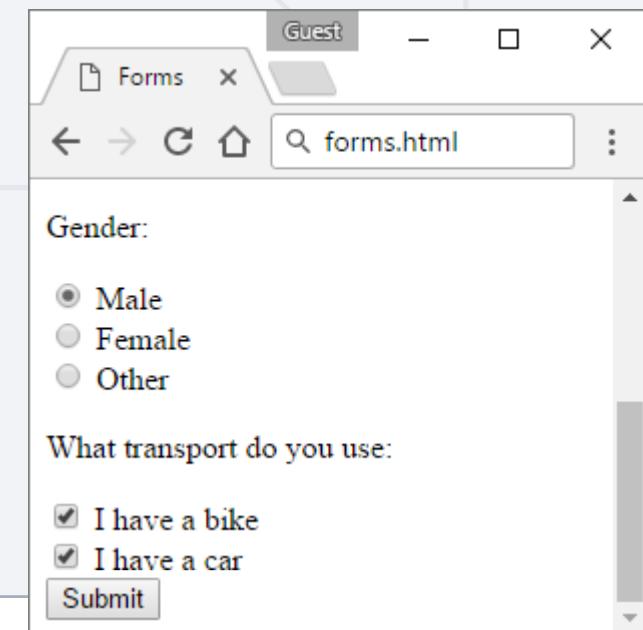
HTML Input Types (2)

```
• • •  
<p>Gender:</p>  
<input type="radio" name="gender"/>Male<br/>  
<input type="radio" name="gender"/>Female<br/>  
<input type="radio" name="gender"/>Other<br/>  
<p>What transport do you use:</p>  
<input type="checkbox"/> I have a bike  
I have a car
```

Defines a submit button


```
<input type="submit" value="Submit"/>  
</form>
```

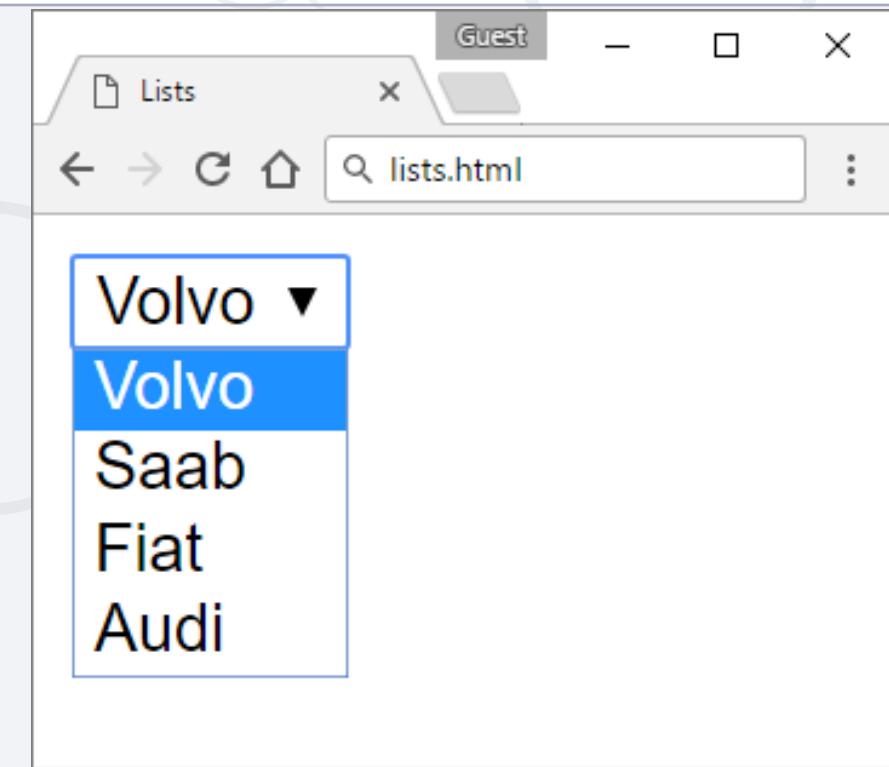
Text displayed inside the button



Dropdown Lists

- Dropdown lists are defined by the **<select>** tag
- **<option>** elements define options that can be selected

```
<form>
  <select>
    <option>Volvo</option>
    <option>Saab</option>
    <option>Fiat</option>
    <option>Audi</option>
  </select>
</form>
```

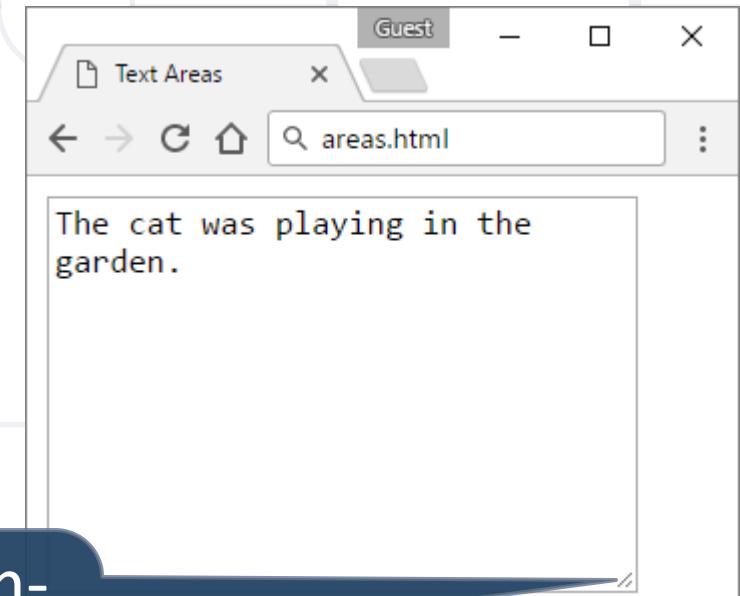


Text Areas

- Text areas (multi-line input fields) are defined by the `<textarea>` tag
- The **row** and **col** attributes define how many rows and columns the text area will span

```
<form>  
  <textarea rows="10" cols="30">  
    The cat was playing in the garden.  
  </textarea>  
</form>
```

The user can drag the bottom-right corner to resize the text area





Add Style to Your Website
CSS (Cascading Style Sheets)

What is CSS?

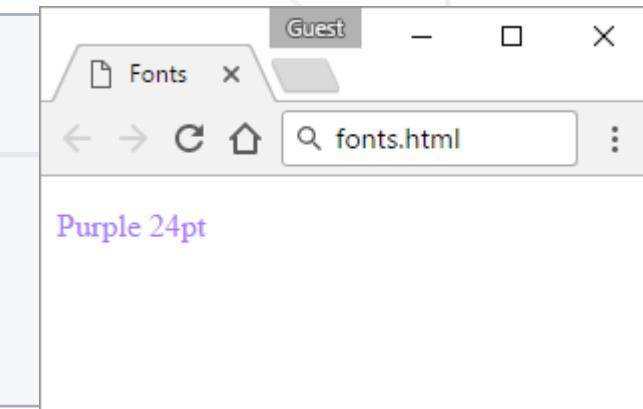
- CSS defines the styling of the HTML elements
 - CSS specifies fonts, colors, margins, sizes, positioning, floating, ...
 - Uses CSS declarations in format: **property:value**
- Inline CSS defines formatting rules for certain HTML element:
`<p style="color: red;">I am a RED text paragraph</p>`



Fonts – Font Family, Size and Colors

- **color:** specifies the color of the letters

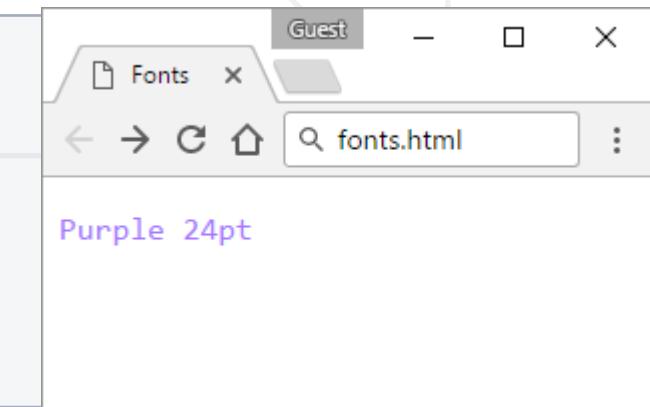
```
<p style="color: #AA77FF;">  
    " >Purple 24pt</p>
```



Fonts – Font Family, Size and Colors

- **color**: specifies the color of the letters
- **font-family**: should hold several fonts. If the browser does not support the first one, it tries the next, and so on

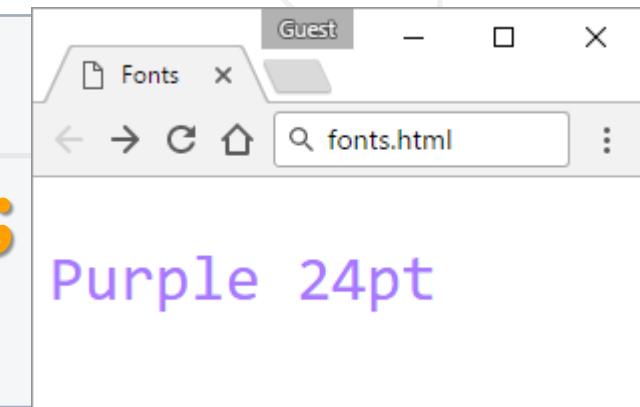
```
<p style="color: #AA77FF;  
font-family: Consolas, monospace;  
">Purple 24pt</p>
```



Fonts – Font Family, Size and Colors

- **color**: specifies the color of the letters
- **font-family**: should hold several fonts. If the browser does not support the first one, it tries the next, and so on
- **font-size**: sets the size

```
<p style="color: #AA77FF;  
font-family: "Consolas", monospace;  
font-size: 24pt;">Purple 24pt</p>
```



- Block-level (`<div>`; `<h1>`; `<p>`) elements:
 - Always start on a new line
 - Take up the whole width available
- The `<div>` element:
 - is often used as a container for other HTML elements

The <div> Element - Example

```
<div style="background-
color:#AA77FF;color:white;">
  <h2>London</h2>
  <div style="background-
color:red;color:white;">
    <p>London is the capital
city of England.<p>
  </div>
</div>
```



- **border**: specifies the type, thickness, color

```
<p style="border: 2px solid red;">border: 2px solid red;
```

```
text-align: center;
```

```
">Red Border</p>
```



- **border**: specifies the type, thickness, color
- **border-radius**: rounds border edges

```
<p style="border: 2px solid red;  
text-align: center;  
border-radius: 10px;  
">Red Border</p>
```

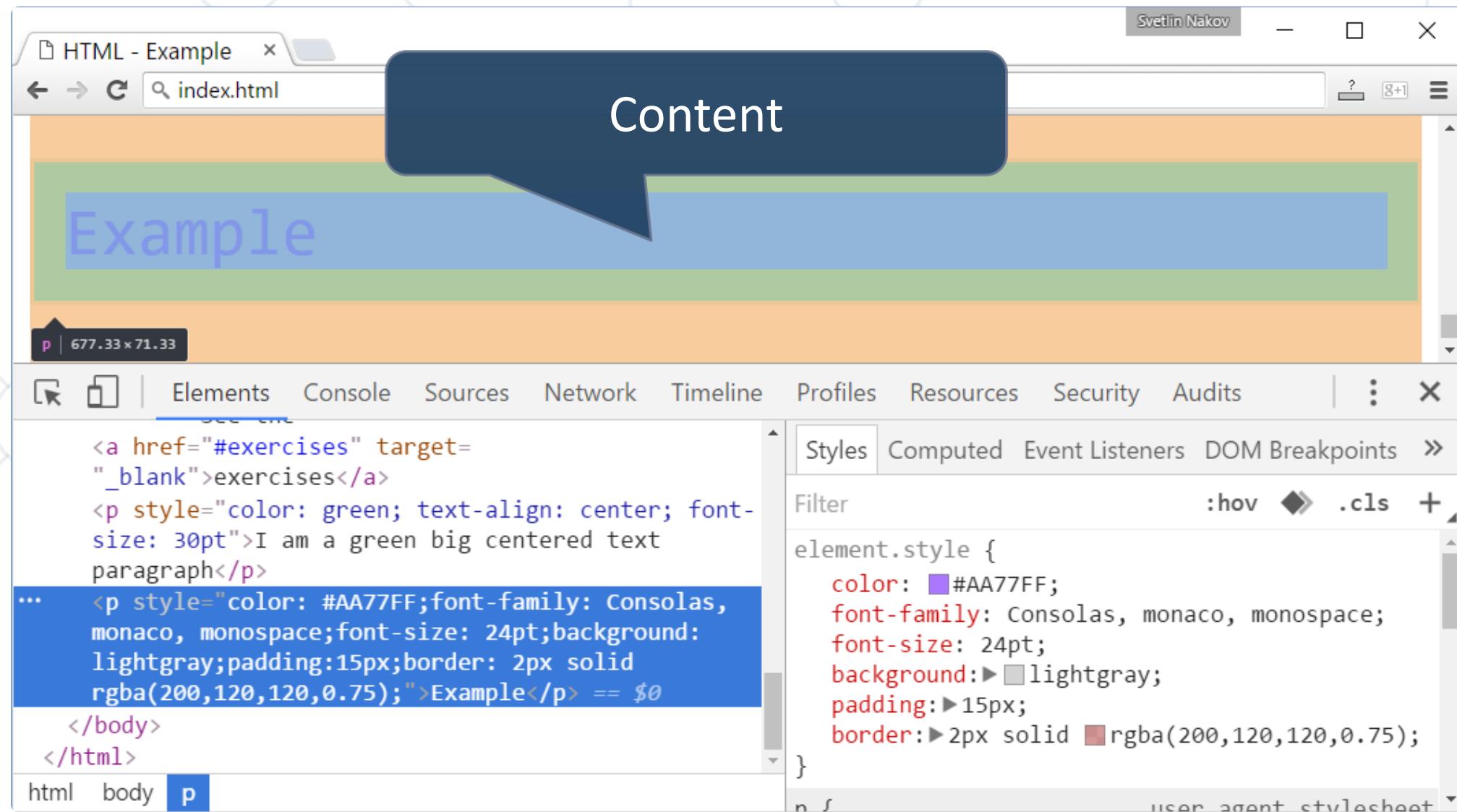


- **border**: specifies the type, thickness, color
- **border-radius**: rounds border edges
- **background**: sets the background

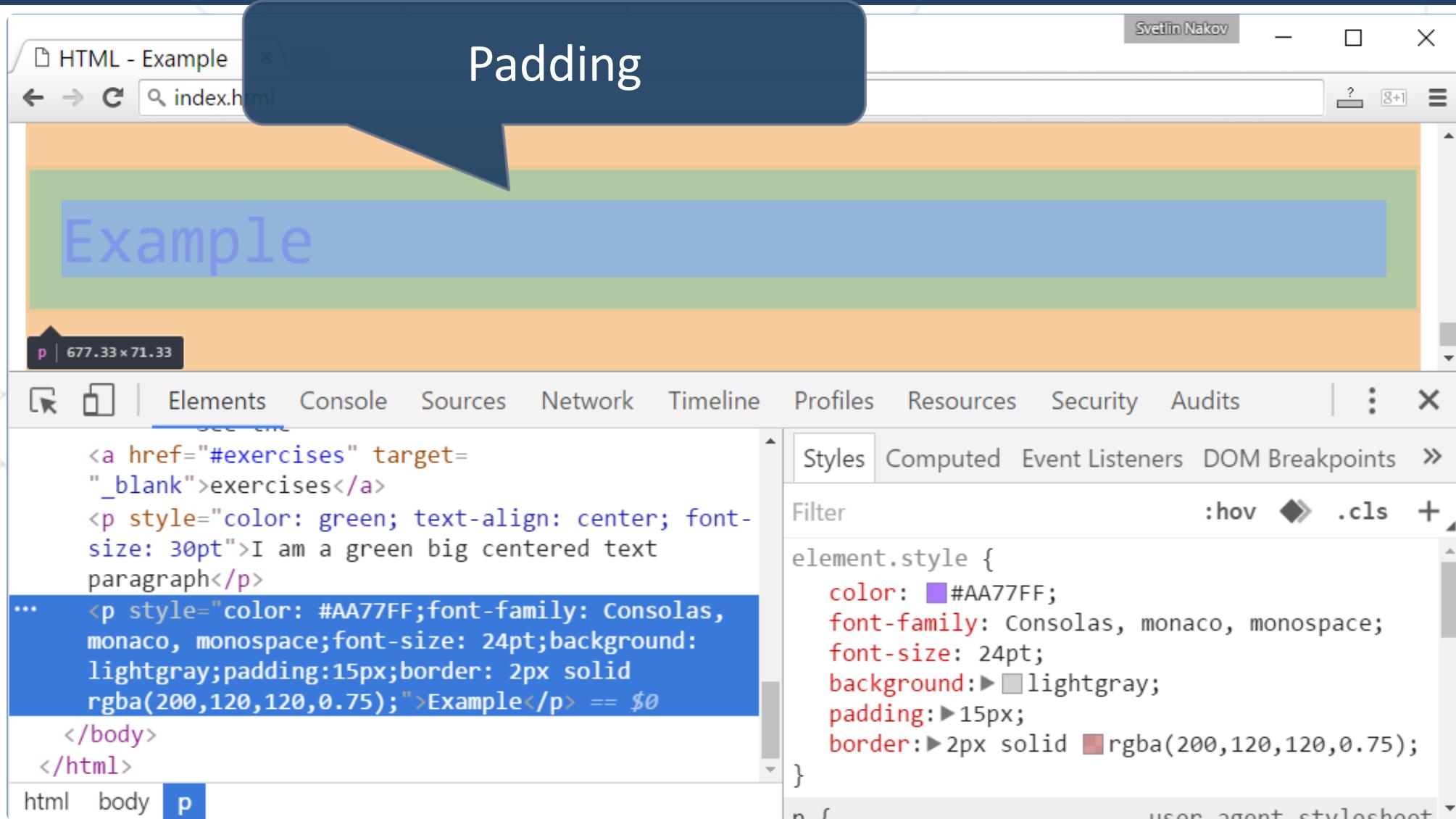
```
<p style="border: 2px solid red;  
text-align: center;  
border-radius: 10px;  
background: lightgray;">Red Border</p>
```



The Dev Tools / Styles Inspector / [F12]



The Dev Tools / Styles Inspector / [F12]



A screenshot of the Chrome DevTools Styles tab. A dark blue callout bubble with the word "Padding" in white text points to the padding value of 15px in the element's style definition.

The page content shows a green header with the text "Example". The DevTools interface includes the following elements:

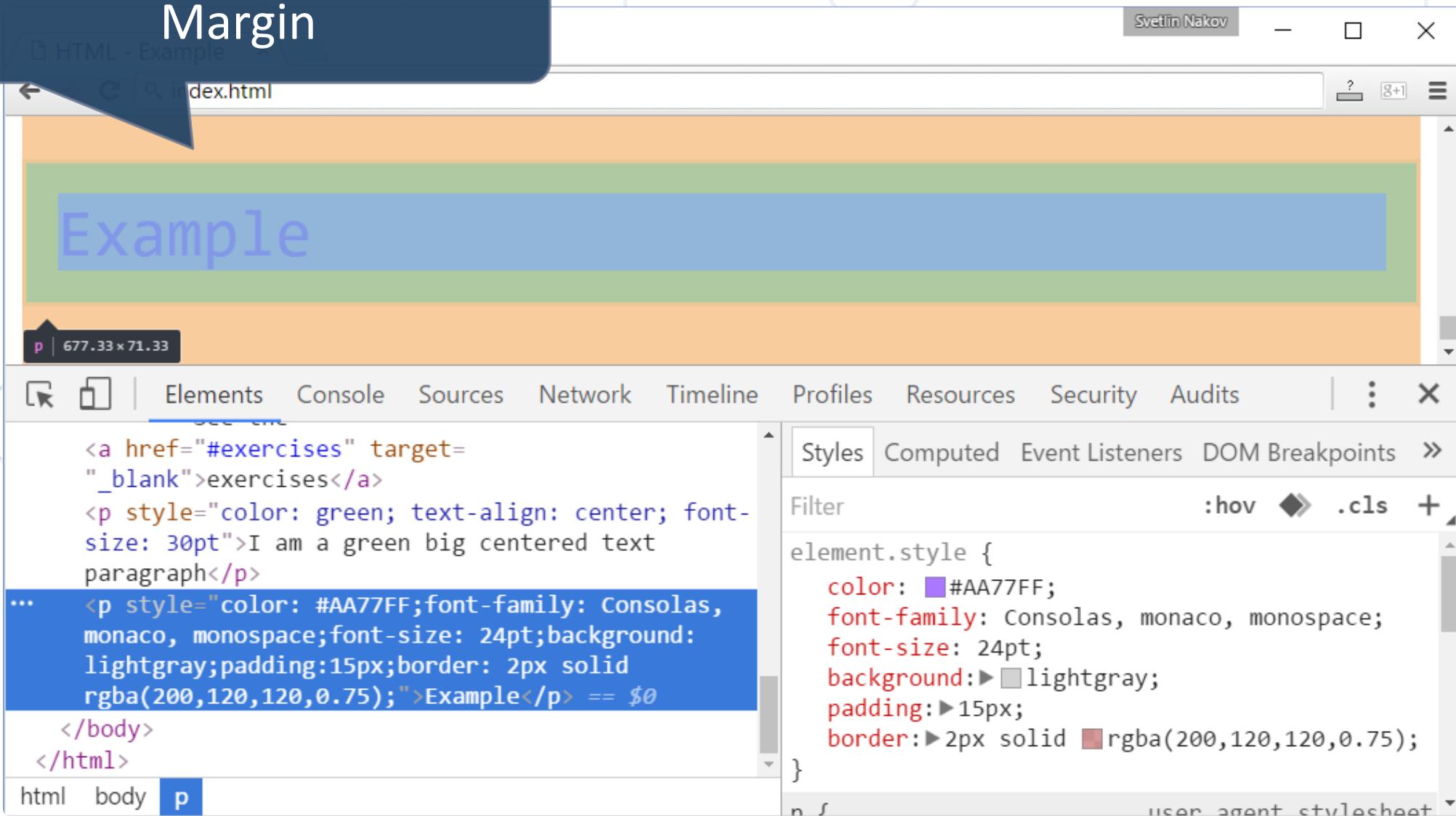
- Elements tab selected.
- HTML code view:

```
<a href="#exercises" target=_blank>exercises</a>
<p style="color: green; text-align: center; font-size: 30pt">I am a green big centered text paragraph</p>
...
<p style="color: #AA77FF; font-family: Consolas, monaco, monospace; font-size: 24pt; background: lightgray; padding: 15px; border: 2px solid rgba(200,120,120,0.75);">Example</p> == $0
</body>
</html>
```
- Styles panel:

```
element.style {
  color: #AA77FF;
  font-family: Consolas, monaco, monospace;
  font-size: 24pt;
  background: lightgray;
  padding: 15px;
  border: 2px solid rgba(200,120,120,0.75);
}
```

The Dev Tools / Styles Inspector / [F12]

Margin



The screenshot shows the Chrome DevTools Styles tab open, displaying the CSS styles for a selected element. The element is a paragraph (`p`) with the text "Example". The styles applied are:

```
element.style {  
  color: #AA77FF;  
  font-family: Consolas, monaco, monospace;  
  font-size: 24pt;  
  background: lightgray;  
  padding: 15px;  
  border: 2px solid rgba(200,120,120,0.75);}  
p {  
  color: green;  
  text-align: center;  
  font-size: 30pt;  
  margin: 10px 0;  
}
```

The "margin" property is highlighted in the list of styles. The DevTools interface includes a toolbar at the top with icons for Elements, Console, Sources, Network, Timeline, Profiles, Resources, Security, and Audits. The "Elements" tab is currently selected. The bottom navigation bar shows the element path: html > body > p.

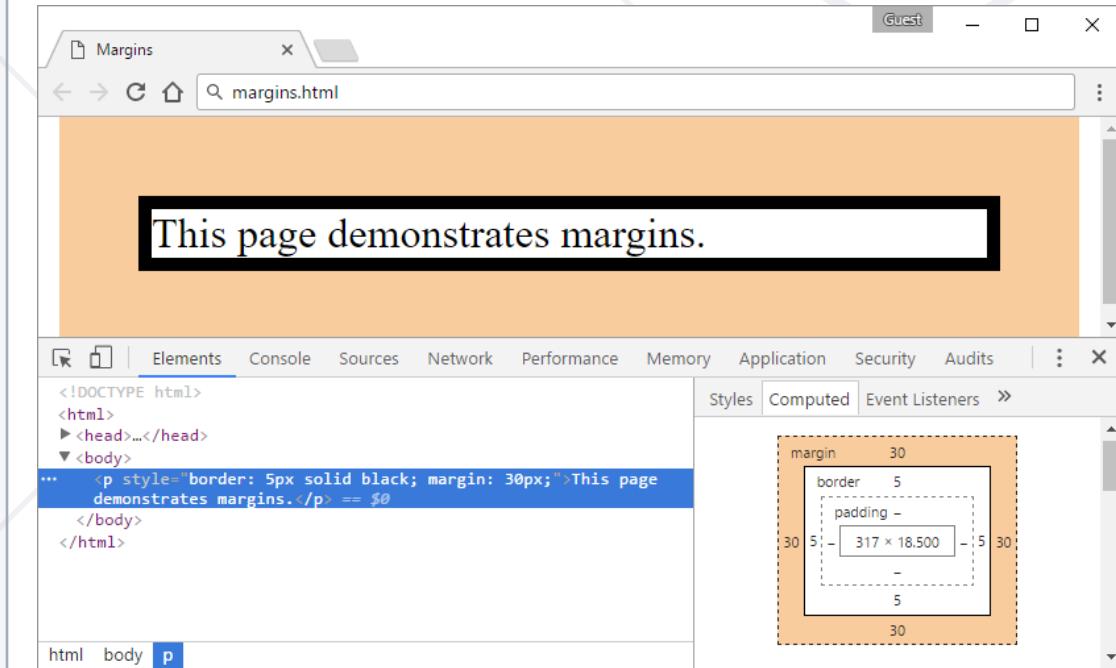
The Dev Tools / Styles Inspector / [F12]



Margins

- Used to generate space around elements
- The **margin** properties set the size of the white space outside of the border

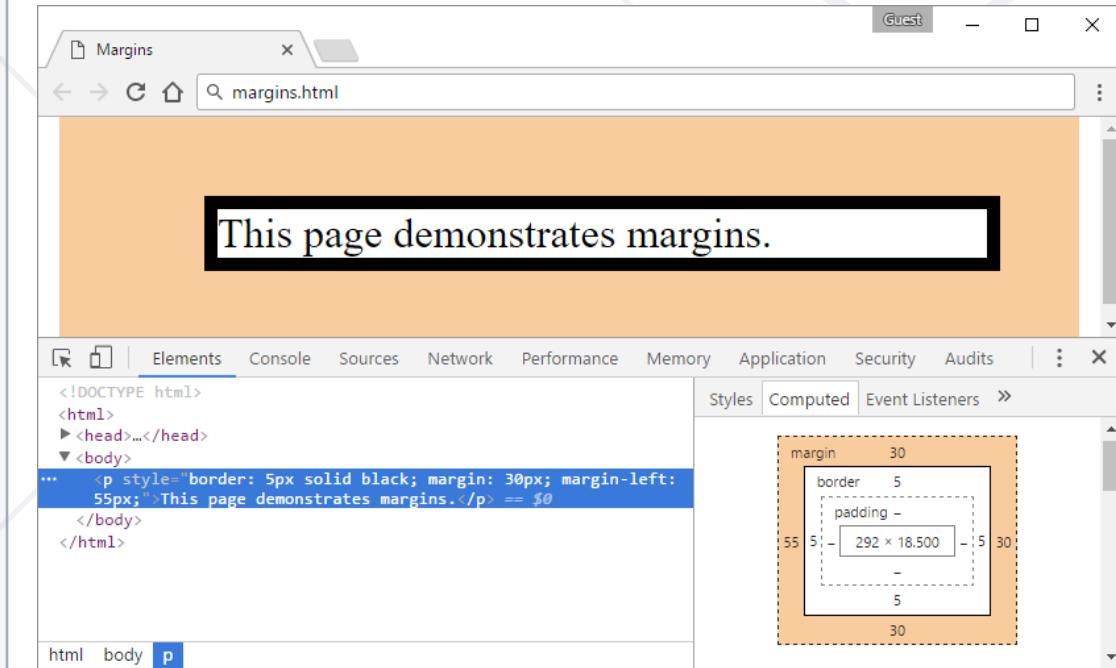
```
<p style="border: 5px  
solid black; margin:  
30px;">  
    "This page  
demonstrates margins.</p>
```



Margins

- Used to generate space around elements
- The **margin** properties set the size of the white space outside of the border

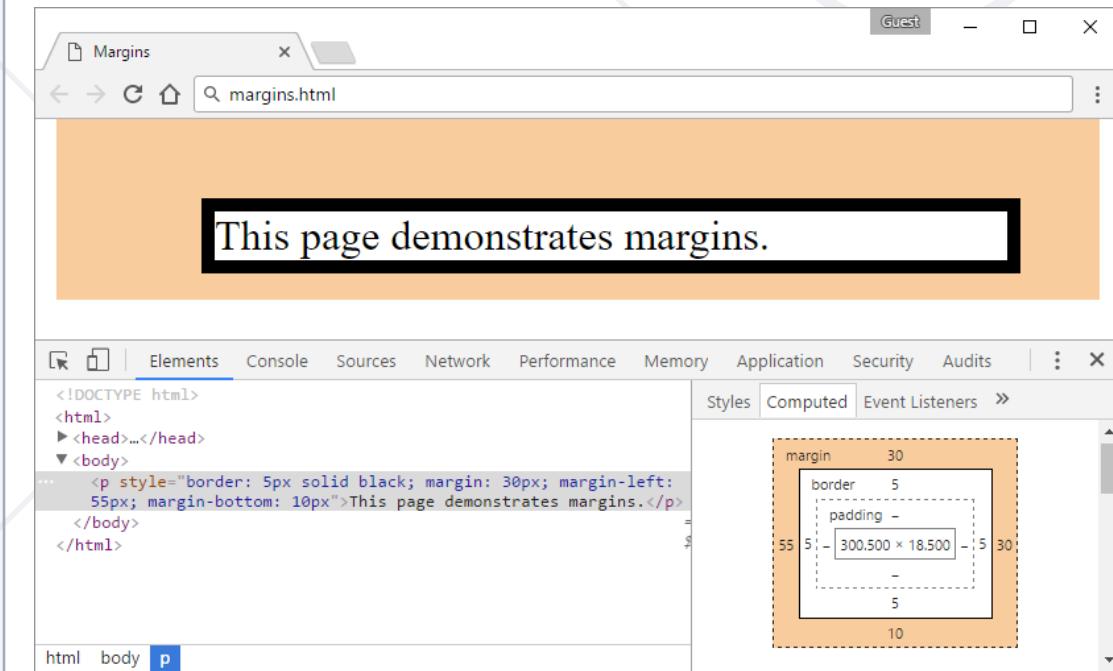
```
<p style="border: 5px  
solid black; margin:  
30px; margin-left: 55px;  
">This page  
demonstrates margins.</p>
```



Margins

- Used to generate space around elements
- The **margin** properties set the size of the white space outside of the border

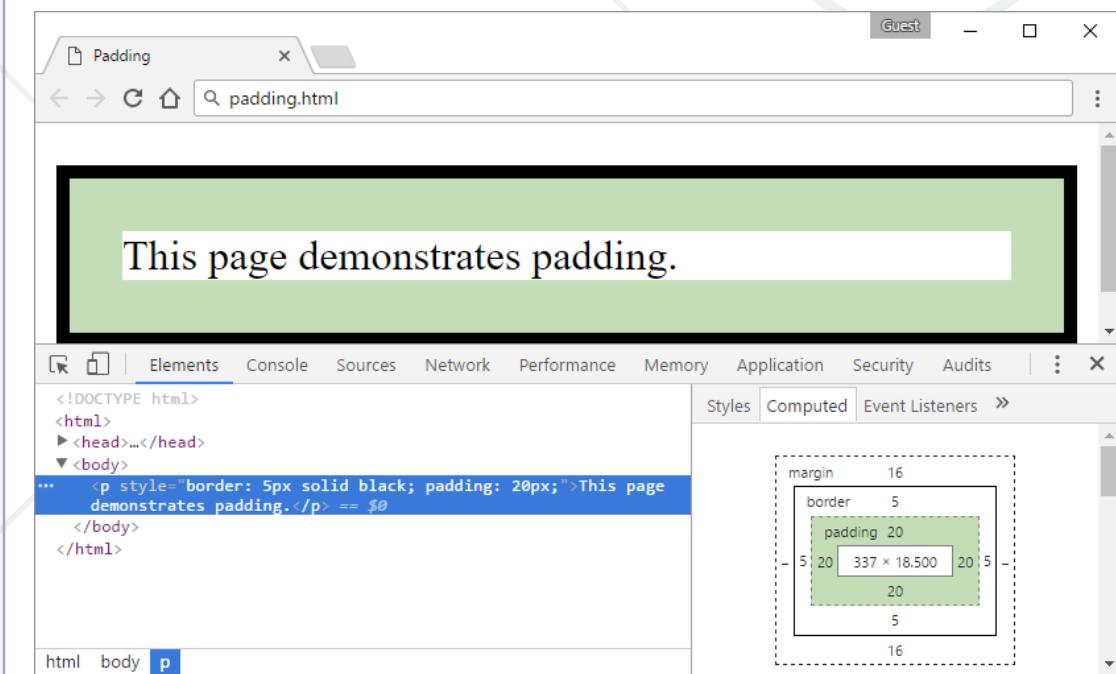
```
<p style="border: 5px  
solid black; margin:  
30px; margin-left: 55px;  
margin-bottom:  
10px;">This page  
demonstrates margins.</p>
```



Padding

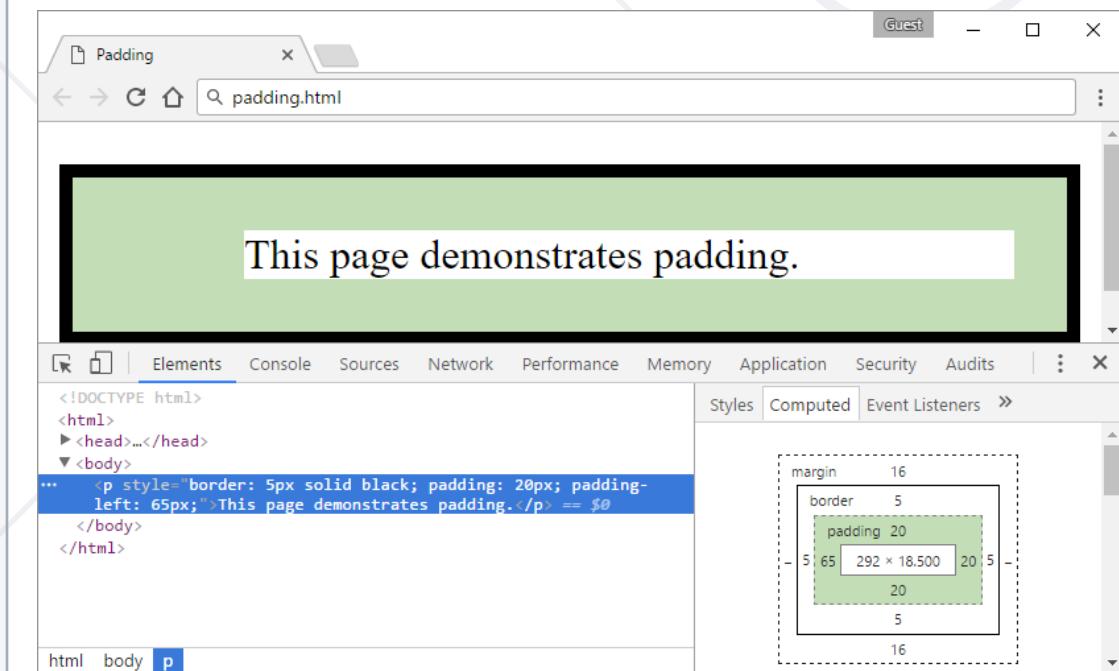
- Used to generate space around the content
- The **padding** properties set the size of the white space inside of the border

```
<p style="border: 5px  
solid black; padding:  
20px;  
  
    >This page  
demonstrates padding.</p>
```



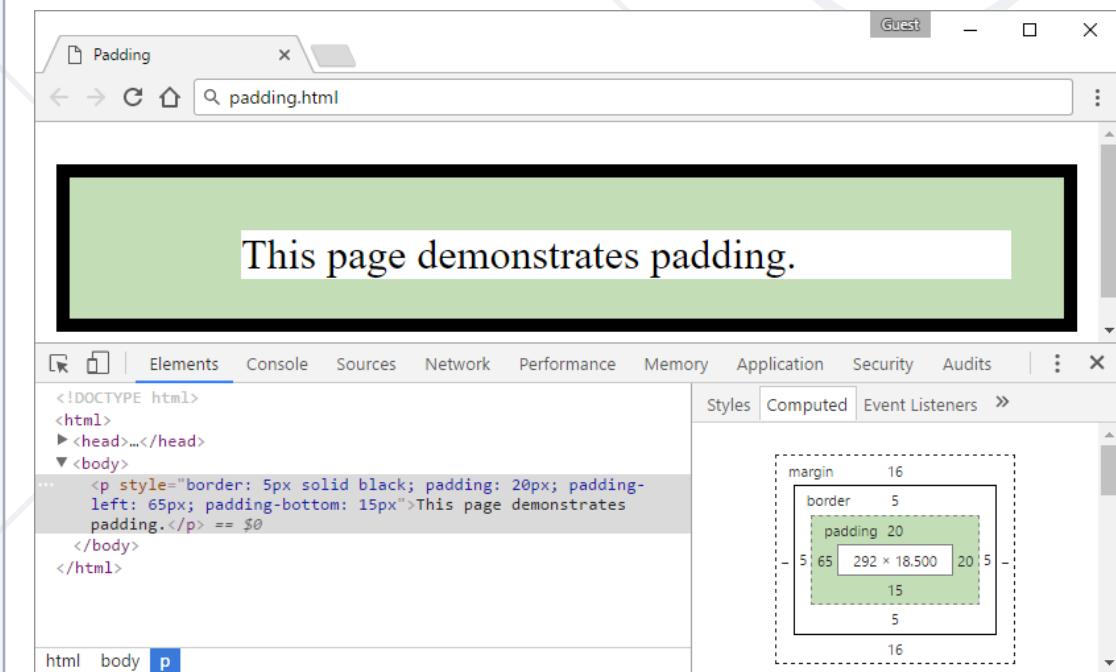
- Used to generate space around the content
- The **padding** properties set the size of the white space inside of the border

```
<p style="border: 5px  
solid black; padding:  
20px; padding-left: 65px;  
">This page  
demonstrates padding.</p>
```



- Used to generate space around the content
- The **padding** properties set the size of the white space inside of the border

```
<p style="border: 5px  
solid black; padding:  
20px; padding-left: 65px;  
padding-bottom:  
15px">This page  
demonstrates padding.</p>
```



Content (HTML document)

Title

Lore ipsum dolor sit amet, consectetur adipiscing elit. Suspendisse at pede ut purus malesuada dictum. Donec vitae neque non magna aliquam dictum.

- Vestibulum et odio et ipsum**
- accumsan accumsan. Morbi at**
- arcu vel elit ultricies porta. Proin**
- tortor purus, luctus non, aliquam**
- nec, interdum vel, mi. Sed nec quam**
- nec odio lacinia molestie. Praesent**
- augue tortor, convallis eget,**
- euismod nonummy, lacinia ut, risus.**

Presentation (CSS document)

Bold
Italics
Indent



The Resulting Page

Title

Lorem ipsum dolor sit amet,
consectetuer adipiscing elit.
Suspendisse at pede ut purus
malesuada dictum. Donec vitae neque
non magna aliquam dictum.

- *Vestibulum et odio et ipsum*
- *accumsan accumsan. Morbi at*
- *arcu vel elit ultricies porta. Proin*

Tortor purus, luctus non, aliquam nec,
interdum vel, mi. Sed nec quam nec
odio lacinia molestie. Praesent augue
tortor, convallis eget, euismod
nonummy, lacinia ut, risus.

Combining HTML and CSS Files – body id

using-css.html

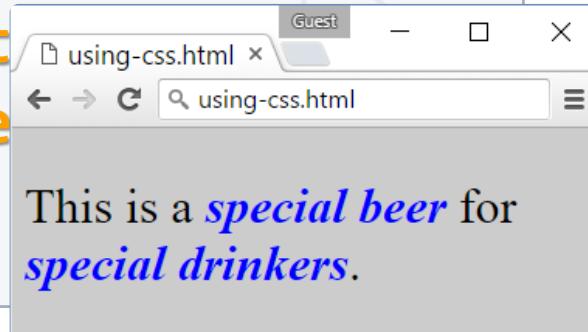
```
<!DOCTYPE html>
<html>
  <head>
    <link rel="stylesheet" type="text/css" href="styles.css">
  </head>
  <body id="content">
    <p>This is a <span class="special">special beer</span> for <span class="special">special drinkers</span>.</p>
  </body>
</html>
```

styles.css

```
#content {
  background: #EEE;
}

p {
  font-size: 24pt;
}

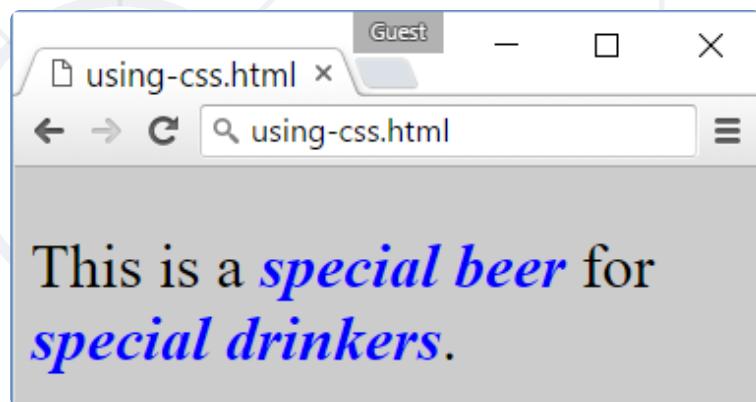
.special {
  font-style: italic;
  font-weight: bold;
  color: blue;
}
```



This is a *special beer* for **special drinkers**.

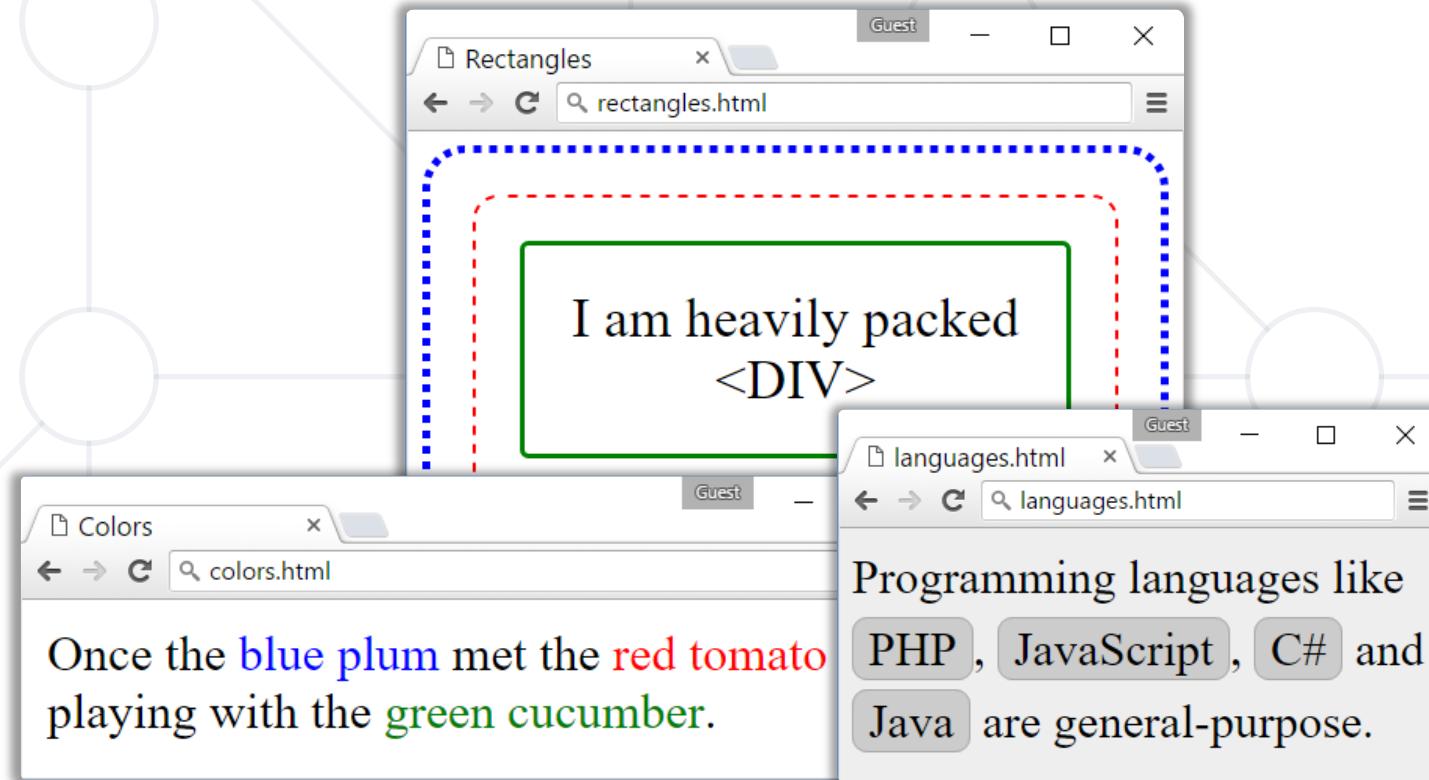
CSS Selectors

- **.class** – selects a group of elements with the specified class
- **#id** – selects a unique element
- **tag** – selects all specified tags
- ***** - selects everything



```
styles.css
```

```
.special {  
    font-style: italic;  
    font-weight: bold;  
    color: blue;  
}  
  
.content {  
    background: #EEE;  
}  
  
p {  
    font-size: 24pt;  
}
```



Live Problems in Class (Lab)

Styling with CSS

Summary

- **HTML** describes text with formatting, images, tables, forms, etc.
 - Uses tags like `<p>`, `` and ``
- **CSS** adds styling to the HTML documents
 - Font, color, background, alignment, ...
 - Layout, position, size, margins, paddings, ...
- **Web sites** consist of HTML + CSS + images
 - May hold JavaScript code and other assets



HTML & CSS



Questions?



SoftUni



Software
University



SoftUni
Svetlina



SoftUni
Creative



SoftUni
Digital



SoftUni
Foundation



SoftUni
Kids

SoftUni Diamond Partners



XSsoftware



SBTech
we know sports



telenor



SoftwareGroup
doing it right

NETPEAK



SmartIT

æternity

**SUPER
HOSTING**
.BG

INDEAVR
Serving the high achievers

INFRASTICS®

LIEBHERR

Postbank

Решения за твоето утре

SoftUni Organizational Partners



ИНФОРМАЦИОННО
ОБСЛУЖВАНЕ

OneBit
SOFTWARE



Lukanet.com



Trainings @ Software University (SoftUni)



- Software University – High-Quality Education and Employment Opportunities
 - softuni.bg
- Software University Foundation
 - <http://softuni.foundation/>
- Software University @ Facebook
 - facebook.com/SoftwareUniversity
- Software University Forums
 - forum.softuni.bg



- This course (slides, examples, demos, videos, homework, etc.) is licensed under the "Creative Commons Attribution-NonCommercial-ShareAlike 4.0 International" license

