[Lesson 2]

Roi Yehoshua 2018

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What we learnt last time?

- Get familiar with Front-end basics
- Learn how HTML and CSS work
- Learn about JavaScript - what it is and what it is used for
- Create a simple web page

Our targets for today

- Emmet plugin for IDE
- Learn what is CSS and how it works
- CSS syntax
- Margins and paddings, difference between them

[Emmet]

- Emmet is a set of plug-ins for text editors.
- Some editors have built in support for emmet, other needs manual installation.
- Usage of emmet is not necessary, but highly improves development speed.

For example, following code `div#wrapper` will be compiled to `<div id=”wrapper”></div>`

And such short code like `ul>li*4` will be compiled to

```
<ul>
     <li></li>
     <li></li>
     <li></li>
     <li></li>
</ul>
```

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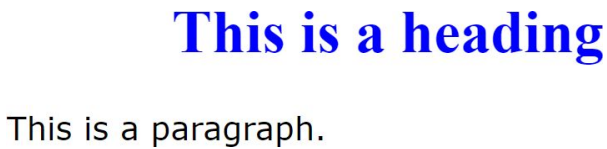
[Styles]

- Setting the style of an HTML element can be done with the style attribute
- The HTML style attribute has the following syntax:

```
<tagname style="property:value;">
```

- The ***property*** is a CSS property. The ***value*** is a CSS value.
  - → You will learn more about CSS later in the course
- Example:

```
<h1 style="color:blue;font-size:300%;text-align:center">This is a heading</h1>
<p style="font-size:160%;font-family:Verdana">This is a paragraph.</p>
```



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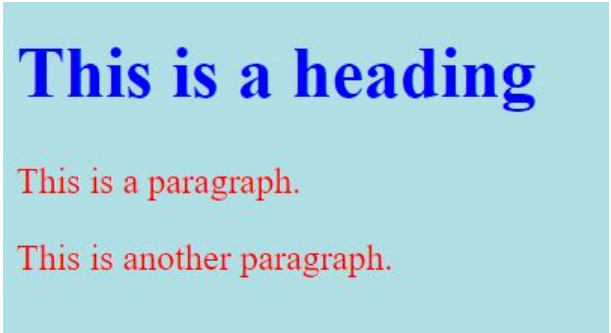
The <style> Element

→ A <style> tag in the <head> section of the HTML page allows you to define a style that affects all the elements in the page

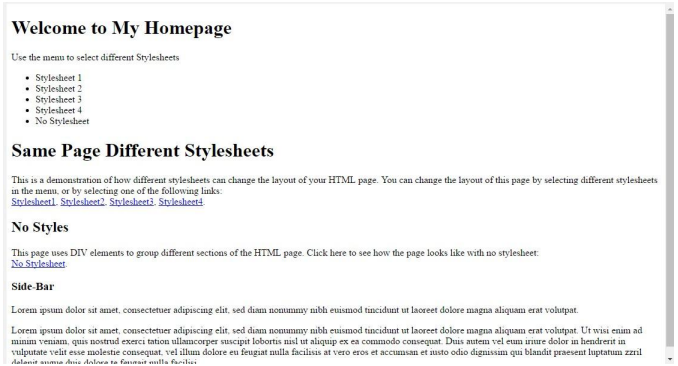
```
<!DOCTYPE html>
<html>
<head>
	<style>
		body {
			background-color: powderblue;
		}
		h1 {
			color: blue;
		}
		p {
			color: red;
		}
	</style>
</head>
<body>
	<h1>This is a heading</h1>
	<p>This is a paragraph.</p>
	<p>This is another paragraph.</p>
</body>
</html>
```

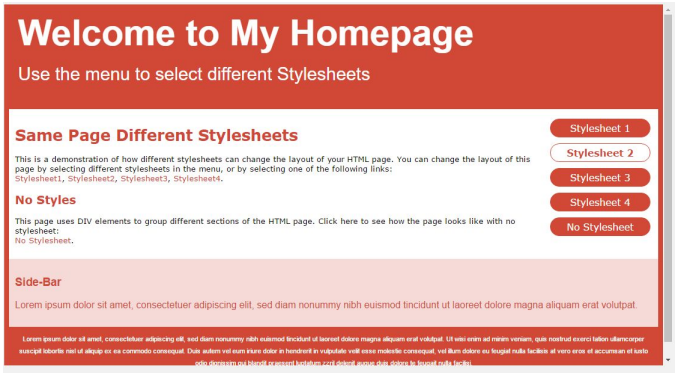


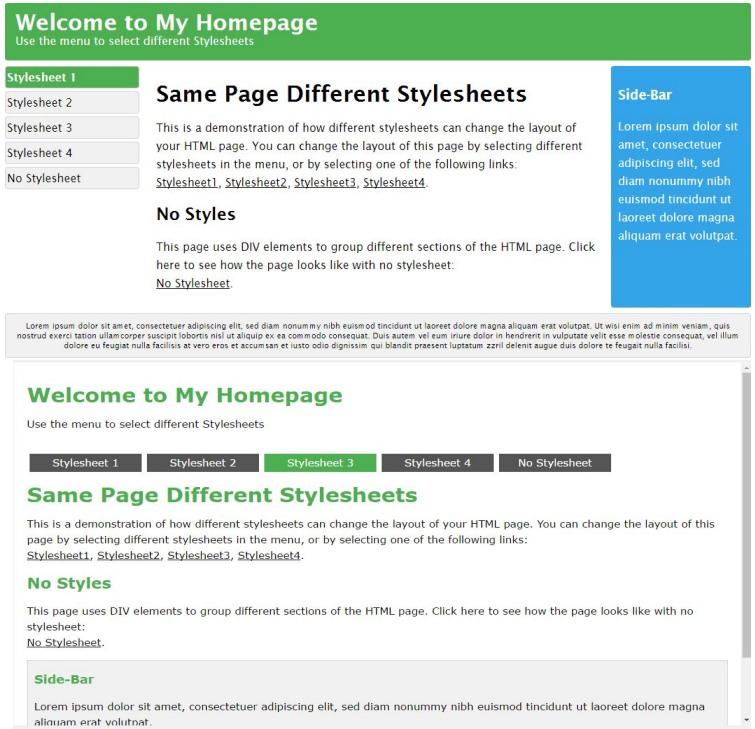
Cascading Style Sheet

- **CSS** is a language that describes the style of an HTML document
  - → CSS describes how HTML elements should be displayed
- Enables the separation of presentation and content
  - → Including aspects such as the layout, colors, and fonts
- Enables multiple HTML pages to share the same styles
- Allows to present the same HTML page in different styles
  - → for different rendering methods, such as on-screen, in print
  - → for different screen resolutions and viewing devices
- The style definitions are normally saved in external .css files
  - → Which are cached by the browser (allows faster loading times of the pages)

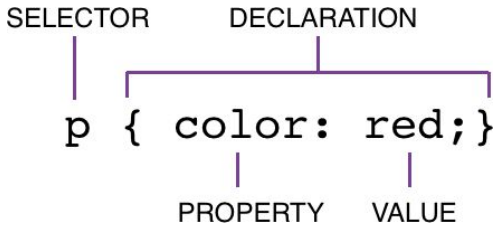
Same Page – Different Styles







CSS Syntax



- A style sheet consists of a list of rules
- Each rule consists of one or more selectors, and a declaration block
- A declaration block consists of a list of *declarations* in braces
- Each declaration itself consists of a *property*, a colon (:), and a *value*
- If there are multiple declarations in a block, a semi-colon (;) must be inserted to separate each declaration
- CSS selectors are used to "find" (or select) HTML elements based on their element name, id, class, attribute, and more

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CSS - Where To Write?

- Inline
- In <style> tag in the header of the page
  - Applies to all elements of the same type
- In an external style sheet (.css file)
  - Can be shared among multiple HTML pages
  - Cached in the browser

```
<h1 style="color: #7E8F7C; font-size:50px">Site Header</h1>
```

```
<head>
    <style>
        h1 {
            color: #7E8F7C;
            font-size: 50px;
        }
    </style>
</head>
```

```
<head>
    <link href="MyStyles.css" rel="stylesheet"/>
</head>
```

MyStyles.css

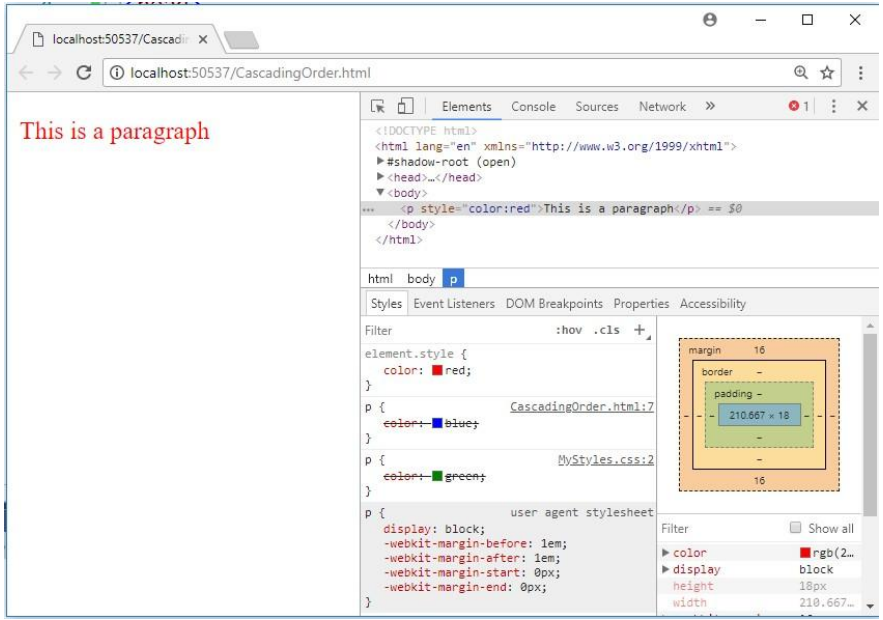
```
h1 {
    color: #7E8F7C;
    font-size: 50px;
}
```

Cascading Order

- What style will be used when there is more than one style specified for an HTML element?
- Inline style (inside a specific HTML element) has the highest priority
- Then external and internal style sheets (in the head section)
- And lastly the browser default
- You can examine which styles have been overridden by which rules using the browser developer tools

Cascading Order

```
<head>
    <link href="MyStyles.css" rel="stylesheet" />
    <style>
        p {
            color: blue;
        }
    </style>
</head>
<body>
    <p style="color:red">This is a paragraph</p>
</body>
```



CSS Comments

- A CSS comment starts with /* and ends with */
- Comments can also span multiple lines:

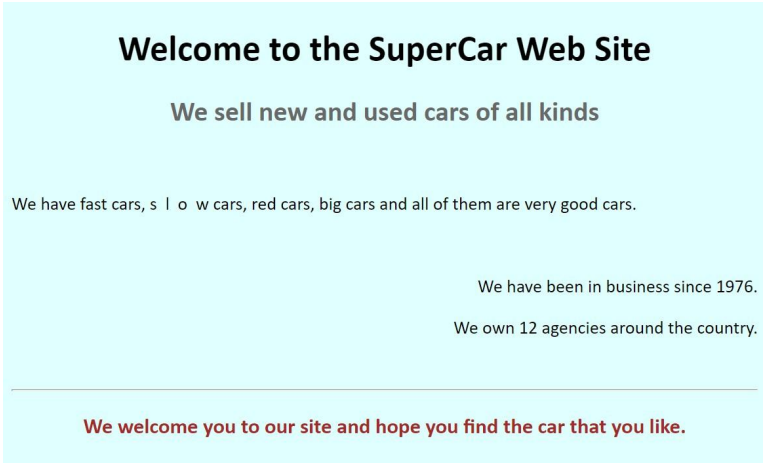
```
p {
    color: red;
    /* This is a single-line comment */
    text-align: center;
}

/* This is a multi-line comment */
```

Exercise (1)

- You are given the following HTML:

```
<body>
    <h1>Welcome to the SuperCar Web Site</h1>
    <h2 id="header2">We sell new and used cars of all
kinds</h2><br />
    <p>We have fast cars,
s  l  o  w cars, red cars, big
cars and all of them are very good cars.</p><br />
    <p class="right">We have been in business since 1976.</p>
    <p class="right">We own 12 agencies around the
country.</p>
    <br /><hr />
    <h3 id="header3">We welcome you to our site and hope you
find the car that you like.</h3>
</body>
```

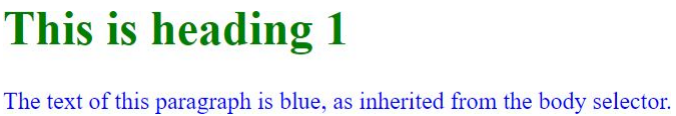


- Use external CSS style sheet to make the page look like the page on the right
- Do not change the HTML code!

Text Color

- The color property is used to set the color of the text
- The color is specified by:
  - a color name - like "red"
  - a HEX value - like "#ff0000"
  - an RGB value - like "rgb(255,0,0)"
- The default text color for a page is defined in the body selector

```
body {
   color: blue;
}
h1 {
   color: green;
}
```



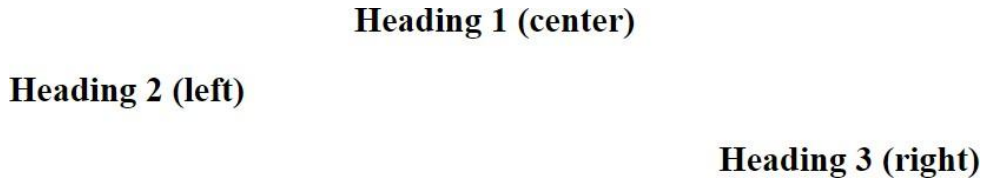
Text Alignment

- The text-align property is used to set the horizontal alignment of a text
- A text can be left or right aligned, centered, or justified
  - left alignment is default if text direction is left-to-right, and right alignment is default if text direction is right-to-left
- The following example shows center aligned, and left and right aligned text:

```
h2.center {
    text-align: center;
}

h2.left {
    text-align: left;
}

h2.right {
    text-align: right;
}
```



Text Alignment

→ When the text-align property is set to justify, each line is stretched so that every line has equal width, and the left and right margins are straight (like in magazines and newspapers):

```
div {
    border: 1px solid black;
    Padding: 10px;
    width: 200px;
    height: 200px;
    text-align: justify;
}
```

In my younger and more vulnerable years my father gave me some advice that I've been turning over in my mind ever since. 'Whenever you feel like criticizing anyone,' he told me, 'just remember that all the people in this world haven't had the advantages that you've had.'

Text Decoration

- The text-decoration property is used to set or remove decorations from text
- Possible values of text-decoration:
  - overline
  - line-through
  - underline
    - It is not recommended to underline text that is not a link, as this often confuses the reader
  - none – often used to removed underlines from links

```
h2.overline {
    text-decoration: overline;
}
h2.linethrough {
    text-decoration: line-through;
}
h2.underline {
    text-decoration: underline;
}
```

This is heading 1

~~This is heading 2~~

This is heading 3

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Backgrounds

- CSS background properties are used to define the background effects for elements
- CSS background properties:
  - background-color
  - background-image
  - background-repeat
  - background-attachment
  - background-position
  - background-size (CSS3)
  - background-origin (CSS3)
  - background-clip (CSS3)

Background Color

- The background-color property specifies the background color of an element
- A color is most often specified by:
  - a valid color name - like "red"
  - a HEX value - like "#ff0000"
  - an RGB value - like "rgb(255,0,0)"
- The background color of a page is set like this:

```
body {
    background-color: lightblue;
}
```

Background Image

- The background-image property specifies an image to use as the background of an element
- By default, the image is repeated so it covers the entire element
- When using a background image, use an image that does not disturb the text
- The background image for a page can be set like this:

```
body {
    background-image:
    url("images/bricks.png");
}
```

Background Image - Repeat Horizontally or Vertically

- By default, the background-image property repeats an image both horizontally and vertically
- Some images should be repeated only horizontally or vertically, or they will look strange
- To repeat an image horizontally use background-repeat: repeat-x;
- To repeat an image vertically use background-repeat: repeat-y;

```
body {
    background-image: url("gradient_bg.png");
    background-repeat: repeat-x;
}
```

Background Image - Set position and no-repeat

- Showing the background image only once is specified by background-repeat: none
- The position of the image can be specified by the background-position property

```
body {
    background-image: url("images/tree.png");
    background-repeat: no-repeat;
    background-position: right top;
    margin-right: 200px;
}
```

My Strong Page

This page has an image as the background!

Now the background image is only shown once, and positioned away from the text.

In this example we have also added a margin on the right side, so the background image will never disturb the text.

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Background – Shorthand Property

- To shorten the code, it is also possible to specify all the background properties in one single property called background
- When using the shorthand property the order of the property values is:
  - background-color
  - background-image
  - background-repeat
  - background-attachment
  - background-position
- Example:

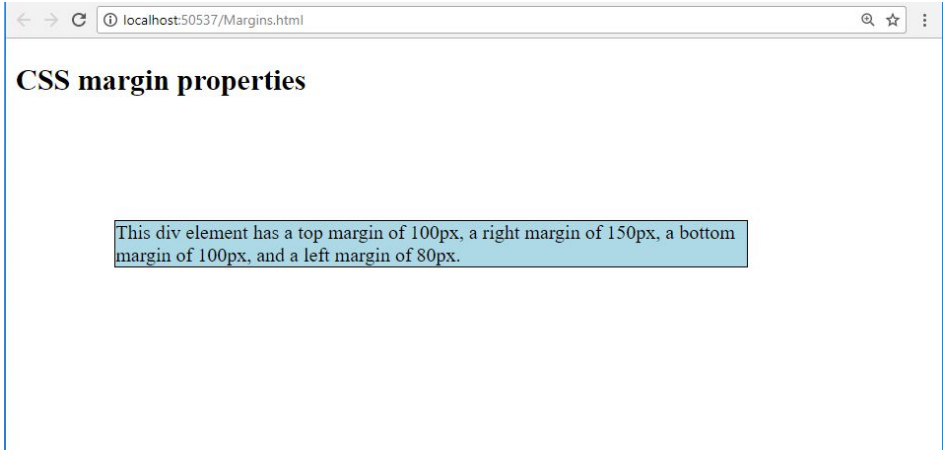
```
body {
    background: #ffffff url("img_tree.png") no-repeat right top;
}
```

CSS Margins

- The CSS margin properties are used to create space around elements, outside of any defined borders
- CSS has properties for specifying the margin for each side of an element:
  - margin-top
  - margin-right
  - margin-bottom
  - margin-left
- All the margin properties can have the following values:
  - auto - the browser calculates the margin
  - length - specifies a margin in px, pt, cm, etc.
  - % - specifies a margin in % of the width of the containing element
  - inherit - specifies that the margin should be inherited from the parent element
- **Tip:** Negative values are allowed

Margin – Individual Sides

```
div {
    border: 1px solid black;
    margin-top: 100px;
    margin-bottom: 100px;
    margin-right: 150px;
    margin-left: 80px;
    background-color: lightblue;
}
```



[Margin – Shorthand Property]

- The margin property is a shorthand property for the individual margin properties
- If the margin property has four values: **margin: 25px 50px 75px 100px;**
  - top margin is 25px
  - right margin is 50px
  - bottom margin is 75px
  - left margin is 100px
- If the margin property has two values: **margin: 25px 50px;**
  - top and bottom margins are 25px
  - right and left margins are 50px
- If the margin property has one value: **margin: 25px;**
  - all four margins are 25px

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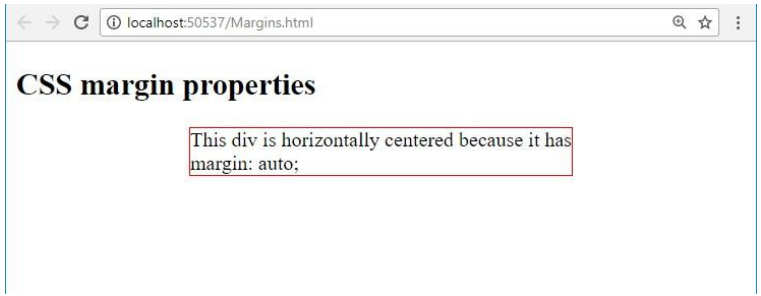
Margin auto

- You can set the margin property to auto to horizontally center the element within its container
- The element will then take up the specified width, and the remaining space will be split equally between the left and right margins

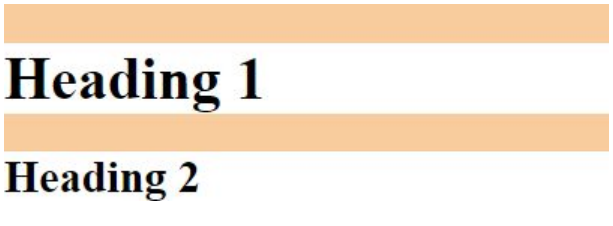
```
div2 {
    width: 300px;
    margin: auto;
    border: 1px solid red;
}
```

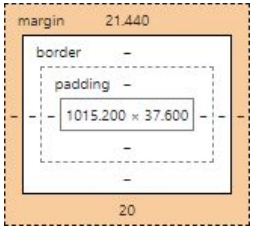


Margin Collapse

- When two boxes touch against one another, their top and bottom margins are collapsed into a single margin that is equal to the largest of the two margins
  - This does not happen on left and right margins
- Look at the following example:

```
h1 {
    margin-bottom: 20px;
}
h2 {
    margin-top: 20px;
}
```





  - In the example above, the <h1> element has a bottom margin of 20px and the <h2> element has a top margin set to 20px.
  - Common sense would seem to suggest that the vertical margin between the <h1> and the <h2> would be a total of 40px. But due to margin collapse, the actual margin ends up being 20px.

[CSS Padding]

- The CSS padding properties are used to generate space around an element's content, inside of any defined borders
- CSS has properties for specifying the margin for each side of an element:
  - padding-top
  - padding-right
  - padding-bottom
  - padding-left
- All the margin properties can have the following values:
  - *length* - specifies a padding in px, pt, cm, etc.
  - *%* - specifies a padding in % of the width of the containing element
  - inherit - specifies that the padding should be inherited from the parent element
- **Note:** Negative values are not allowed

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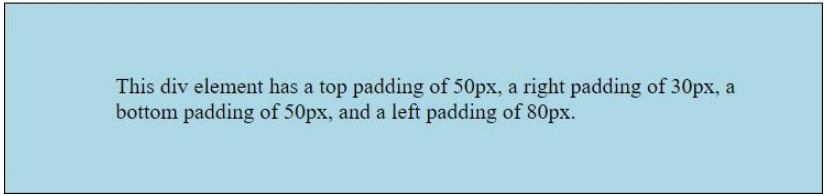
[Padding – Individual Sides]

```
div {
    border: 1px solid black;
    background-color: lightblue;
    padding-top: 50px;
    padding-right: 30px;
    padding-bottom: 50px;
    padding-left: 80px;
}
```

CSS padding properties



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[Padding – Shorthand Property]

- The padding property is a shorthand property for the individual padding properties
- If the padding property has four values: **padding: 25px 50px 75px 100px;**
  - top padding is 25px
  - right padding is 50px
  - bottom padding is 75px
  - left padding is 100px
- If the padding property has two values: **padding: 25px 50px;**
  - top and bottom margins are 25px
  - right and left margins are 50px
- If the margin property has one value: **padding: 25px;**
  - all four paddings are 25px

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Control questions

1. What is purpose of Emmet?
2. How can we include CSS styles on HTML page?
3. What is the difference between margin and padding?
4. Can margin value be negative?
5. How do we write comments in CSS and why do we need them?
6. How can we set a background color of the HTML element?
7. How can we set a background image of the HTML element?
8. Can we have both background color and background image?
9. Can we change styling of the web page without changing HTML layout?
10. Can web page work without CSS or JavaScript?

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