Lecture # 9

Course: Web Development

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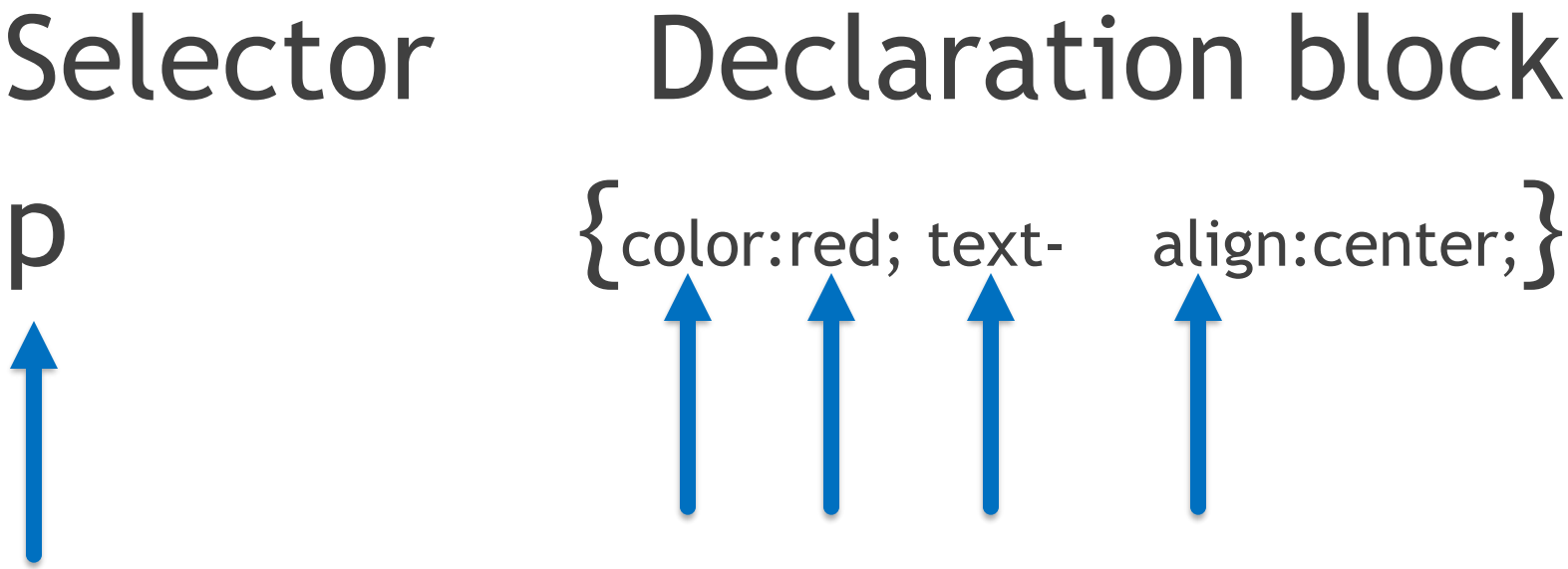
What is CSS?

- **CSS** stands for **C**ascading **S**tyle **S**heets
- CSS describes **how HTML elements are to be displayed on screen, paper, or in other media**
- CSS **saves a lot of work**. It can control the layout of multiple web pages all at once
- External stylesheets are stored in **CSS files**

CSS Solved a Big Problem

- HTML was NEVER intended to contain tags for formatting a web page!
- HTML was created to **describe the content** of a web page, like:
  - <h1>This is a heading</h1>
- When tags like <font>, and color attributes were added to the HTML 3.2 specification, it started a nightmare for web developers. Development of large websites, where fonts and color information were added to every single page, became a long and expensive process.
- To solve this problem, the World Wide Web Consortium (W3C) created CSS.
- CSS removed the style formatting from the HTML page!

CSS Syntax and Selectors



Selector {property:value; property:value}

The id Selector

```
#para1 {
    text-align: center;
    color: red;
}
```

```
<p id="para1"> </p>
```

Note: An id name cannot start with a number!

The class Selector

```
.para1 {
    text-align: center;
    color: red;
}
```

```
<p  class="para1"> </p>
<p  class="para1"> </p>
<p  class="para1"> </p>
```

Note : A class name cannot start with a number!

Affect only specific element with a class

- You can also specify that only specific HTML elements should be affected by a class.

```
p .center{
    text-align: center;
    color: red;
}
```

```
<h1> </h1>
```

```
<h1 class="center"> </h1>
```

```
<p class="center"> </p>
```

Refers to more then one class

```
p.center {
    text-align: center;
    color: red;
}
p.big {
    font-size: 300%;
}
<p class=“ center big”> </p>
```

Grouping Selectors

```
h1 {
    text-align: center;
    color: red;
}
h2 {
    text-align: center;
    color: red;
}
p {
    text-align: center;
    color: red;
}
```

Grouping selector

```
H1,p,h2{
  text-align: center;
    color: red;
}
```

CSS Comments

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

```
  p {
color: red;


/* cofdfhsdhfhdshfmment */


text-align: center;
  }

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

Three Ways to Insert CSS

1. External style sheet
2. Internal style sheet
3. Inline style

CSS Backgrounds

CSS Backgrounds

- The CSS background properties are used to define the background effects for elements.
- CSS background properties:
  - background-color
  - background-image
  - background-repeat
  - background-attachment

Background Color

- The background-color property specifies the background color of an element.
- The background color of a page is set like this:

- Example

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

Different background colors of each element

```
h1 {
    background-color: green;
}

div {
    background-color: lightblue;
}

p {
    background-color: yellow;
}
```

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.
- Example:

```
Body {
    background-image: url("paper.gif");
}
```

- **Note:** When using a background image, use an image that does not disturb the text.

Background Repeats

- Background Image - Repeat Horizontally or Vertically
- Property background-repeat
- Values
  - Repeat-x
  - Repeat-y
  - No-repeat

Background Image - Fixed position

- To specify that the background image should be fixed (will not scroll with the rest of the page), use the background-attachment property:

- Property background-attachment
- Values
  - Fixed
  - Scroll

Size of background Image

- background-size Property
  - background-size: auto;
  - background-size: 300px 100px;
  - background-size: 100% 100%;
  - background-size: cover;

CSS Borders & Outlines

Border Style

- The border-style property specifies what kind of border to display.
  - dotted - Defines a dotted border
  - dashed - Defines a dashed border
  - solid - Defines a solid border
  - double - Defines a double border
  - groove - Defines a 3D grooved border. The effect depends on the border-color value
  - ridge - Defines a 3D ridged border. The effect depends on the border-color value
  - inset - Defines a 3D inset border. The effect depends on the border-color value
  - outset - Defines a 3D outset border. The effect depends on the border-color value
  - none - Defines no border
  - hidden - Defines a hidden border

The border-style property can have from one to four values (for the top border, right border, bottom border, and the left border).

Border Width

- The border-width property specifies the width of the four borders.
- Value can b define as thin , thick, medium

Border Color

- The border-color property is used to set the color of the four borders.
- border-color: red green blue yellow;

Border - Shorthand Property

- The border property is a shorthand property for the following individual border properties:
  - border-width
  - border-style (required)
  - border-color

border: width style color;

Border: 2px solid red;

Rounded Borders

- The border-radius property is used to add rounded borders to an element:

- Example
  - Boder-radius:5px

CSS Outline

- Outline
  - Outline width
  - Outline color
  - Outline Style
- **Outline - Shorthand property**

  The outline property is a shorthand property for the following individual outline properties:
  - outline-width
  - outline-style (required)
  - outline-color

Outline

Border

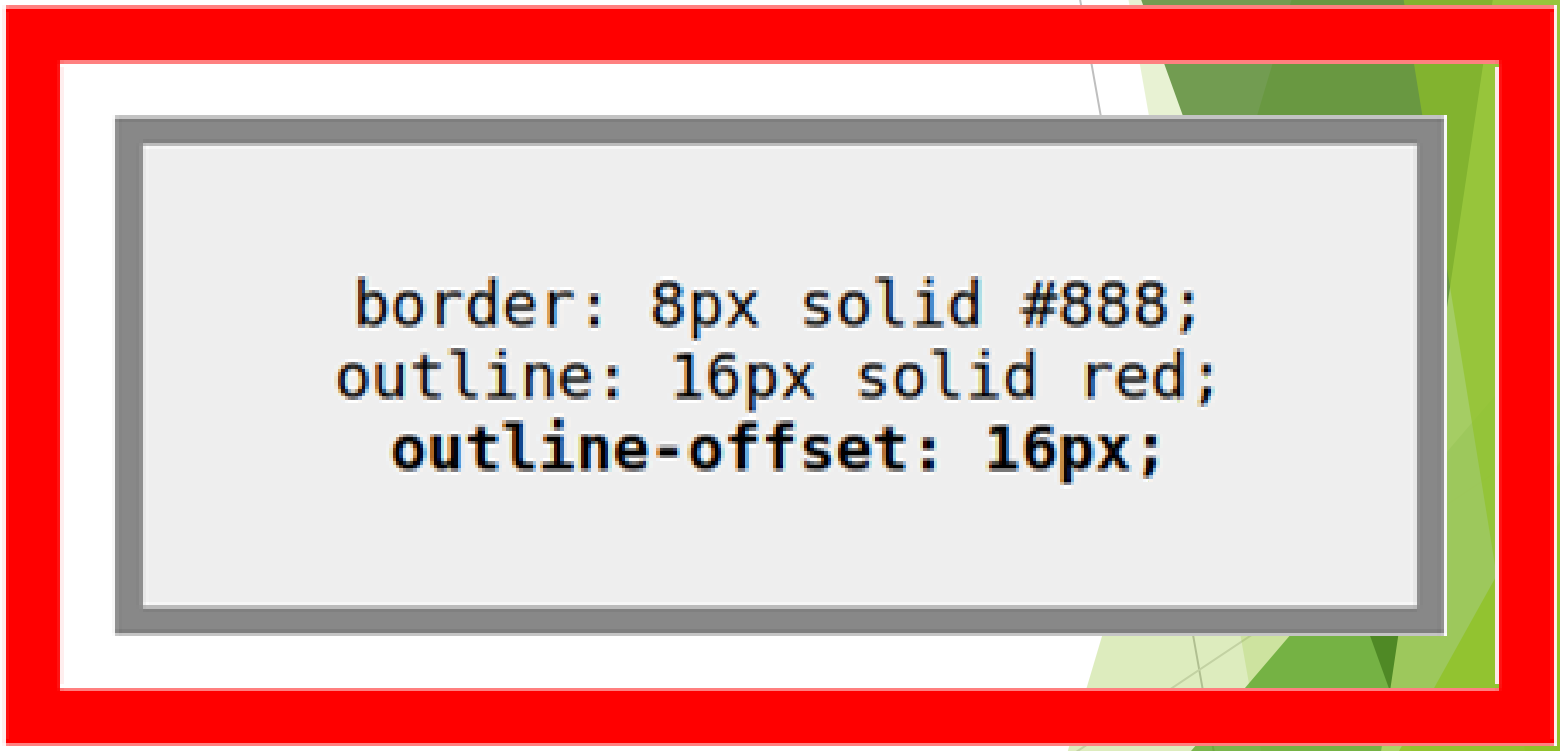
Content

Border and Outline Shorthand Property

```
p {
    border: 1px solid black;
    outline: 5px dotted red;
}
```

Outline Offset

- The outline-offset property adds space between an outline and the edge/border of an element.
- The space between an element and its outline is transparent.



CSS Margins & Padding

CSS Margins

Tip: Negative values are allowed.

- Margin - Individual Sides
  - 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(Relative to the parent element)
  - inherit - specifies that the margin should be inherited from the parent element

Margin - Shorthand Property

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

CSS Height & width

Setting height and width

- The height and width properties are used to set the height and width of an element.
- Example
  - ```
    div {
        height: 100px;
        width: 500px;
        background-color: powderblue;
    }
    ```
    ```

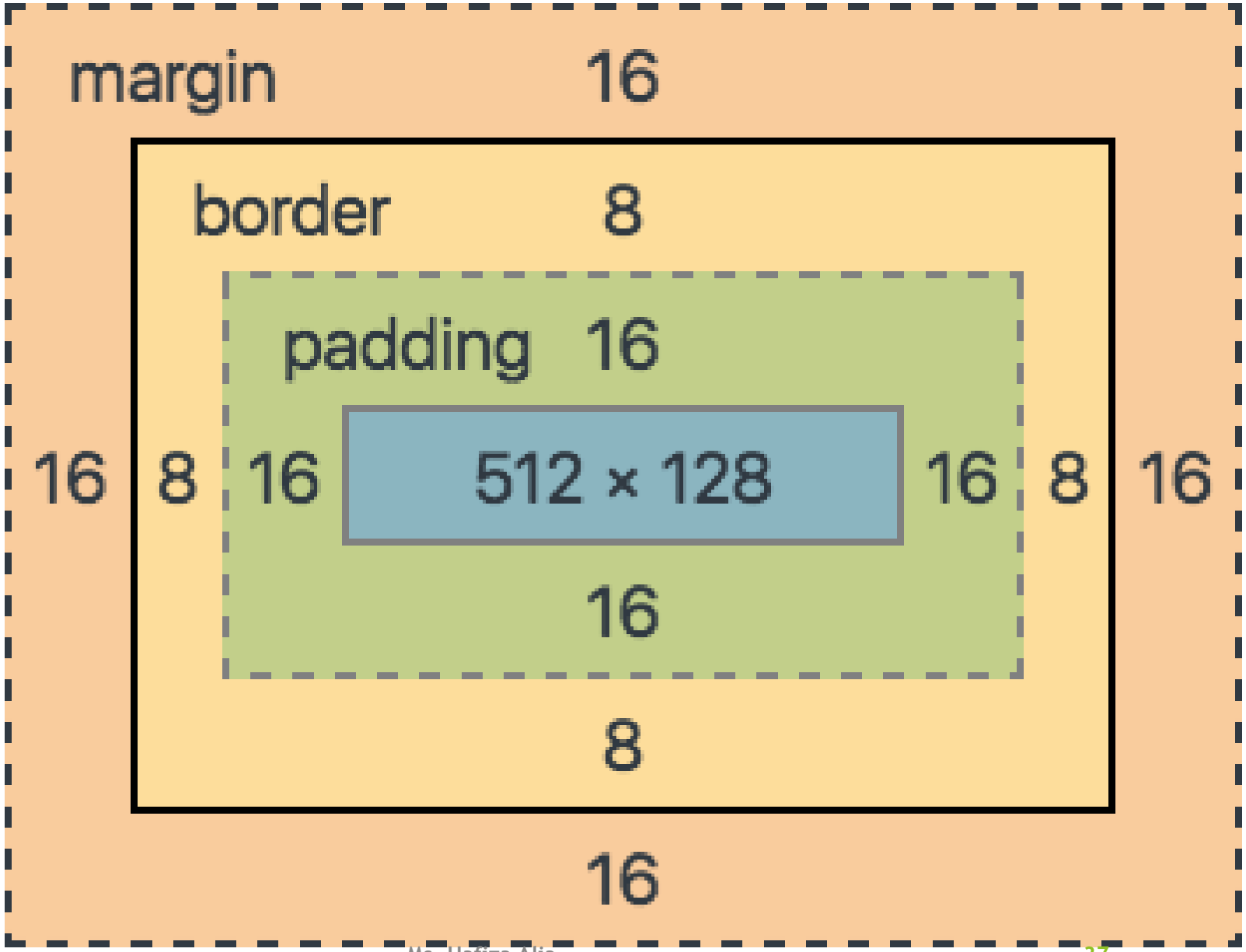
Setting max-width

- The max-width property is used to set the maximum width of an element.

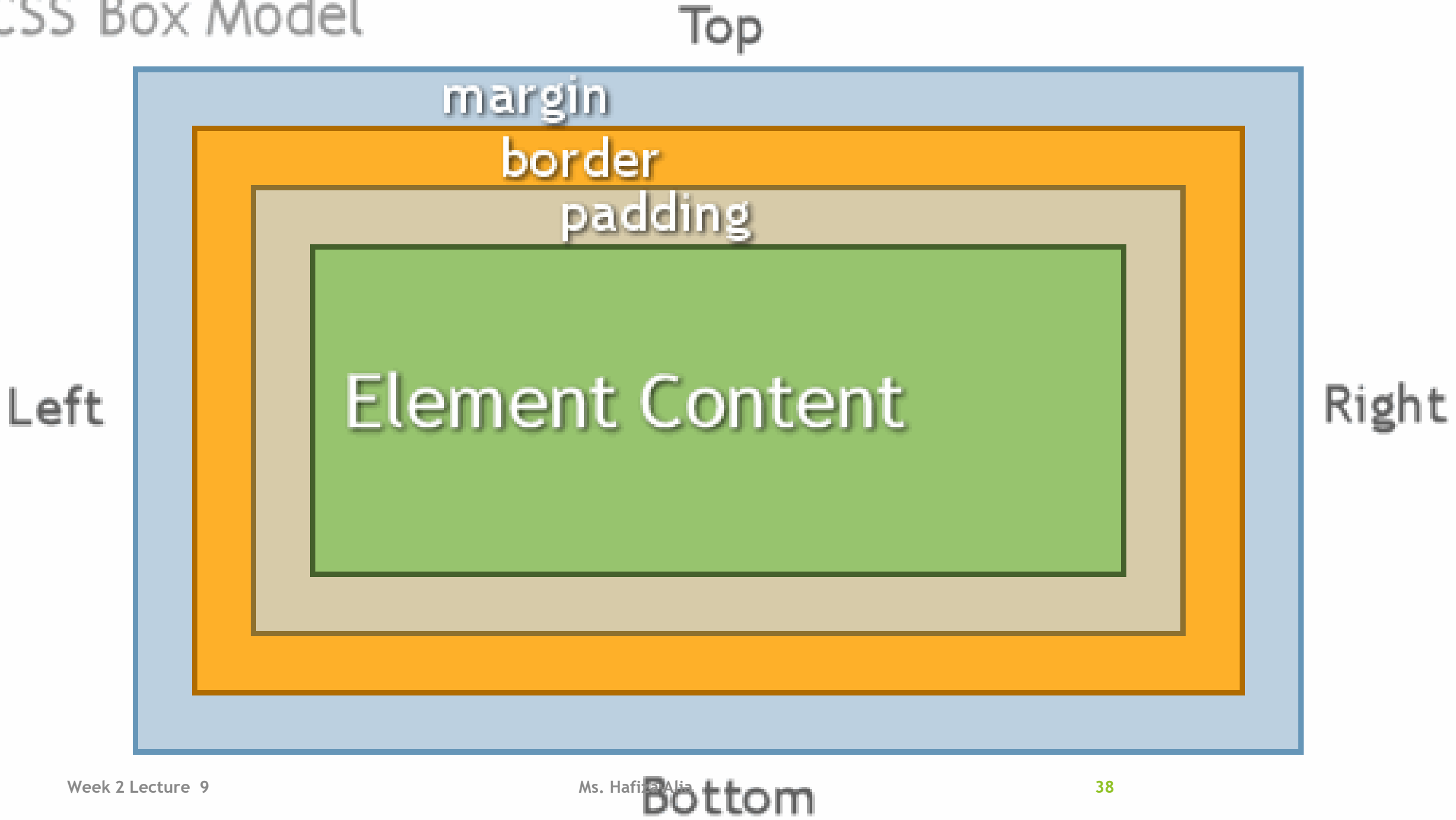
- The max-width can be specified in length values, like px, cm, etc., or in percent (%) of the containing block or set to none (this is default. Means that there is no maximum width).

```
div {
    max-height: 600px;
    min-height: 400px;
    background-color: powderblue;
}
```

CSS Box Model


margin
16
border
8
padding
16
16
8
16
512 × 128
16
8
16
16
8
16

CSS Box Model



Explanation of the different parts:

- **Content** - The content of the box, where text and images appear
- **Padding** - Clears an area around the content. The padding is transparent
- **Border** - A border that goes around the padding and content
- **Margin** - Clears an area outside the border. The margin is transparent

Example

```
div {
    width: 300px;
    border: 25px solid green;
    padding: 25px;
    margin: 25px;
}
```

Width and Height of an Element

- **Important:** When you set the width and height properties of an element with CSS, you just set the width and height of the **content area**

- To calculate the full size of an element, you must also add padding, borders and margins.

Example

```
div {
    width: 320px;
    padding: 10px;
    border: 5px solid gray;
    margin: 0;
}
```

320px (width)
+ 20px (left + right padding)
+ 10px (left + right border)
+ 0px (left + right margin)
= 350px

How to calculate Total width and Height

- Total element width = width + left padding + right padding + left border + right border + left margin + right margin

- The total height of an element should be calculated like this:

- Total element height = height + top padding + bottom padding + top border + bottom border + top margin + bottom margin

CSS Text & Fonts

CSS Text

- Text Color
- Text Alignment
  text-align: center;
  text-align: left;
  text-align: right;
  text-align: Justify;
- Text Decoration
  - None
  - Overline
  - Line-through
  - Underline

Note: It is not recommended to underline text that is not a link, as this often confuses the reader.

CSS Text

- Text-Transformation
  - text-transform: uppercase;
  - text-transform: lowercase;
  - text-transform: capitalize;
- Letter-Spacing
  - Negative values are accepted , give value in pixels/numbers
- line-height
  - 0.8, 0,7,0.6
- Word-Spacing
  - Negative values are accepted , give value in pixels/numbers

CSS Text

- Text Shadow
  - The following example specifies the position of the horizontal shadow (3px), the position of the vertical shadow (2px) and the color of the shadow (red):
  - **text-shadow: 3px 2px red;**

CSS Fonts

- Font Family
- Font Style
  - normal - The text is shown normally
  - italic - The text is shown in italics
- Font Size
  - Absolute size:
    - Sets the text to a specified size
    - Does not allow a user to change the text size in all browsers (bad for accessibility reasons)
    - Absolute size is useful when the physical size of the output is known
  - Relative size(VW)
    - Sets the size relative to surrounding elements
    - Allows a user to change the text size in browsers
- Font Variant
    - Normal , small-caps

CSS Icons

- How To Add Icons
  - The easy way to add an icon, is with an icon library, such as Font Awesome.
  - Add the name of the specified icon class to any inline HTML element (like <i> or).
  - All the icons in the icon library can be customized with CSS (size, color, shadow, etc.)
- Font Awesome Icons
  - To use the Font Awesome icons, add the following line inside the <head> section of your HTML page:
  - <link rel="stylesheet" href="https://cdnjs.cloudflare.com/ajax/libs/font-awesome/4.7.0/css/font-awesome.min.css">

Example

-
-
-
-
-

Bootstrap Icons

- To use the Bootstrap glyphicons, add the following line inside the <head> section of your HTML page:

- <link rel="stylesheet" href="https://maxcdn.bootstrapcdn.com/bootstrap/3.3.7/css/bootstrap.min.css">

Example

-
-
-
-
-

End Of Lecture 9