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FRONTEND WEB DEVELOPMENT

FUNDAMENTALS

CSS

Front End Web Development (Basic)

Agenda – Cascading Style Sheets (CSS)

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Sl No	Agenda Title
1	Understanding CSS
2	CSS Syntax
3	CSS Selectors
4	CSS Selector Type
5	Combining Selectors
6	CSS Attribute Selectors
7	Attaching CSS Style
8	Cascading Order
9	Display Property
10	CSS Font Properties
11	CSS Box Model

Sl No	Agenda Title
12	CSS Margin – auto & max-width
13	CSS Background – Color Property
14	CSS Links
15	CSS Units
16	Position Property
17	CSS Float Property
18	Problem with Float and its Solution
19	Inheritance
20	Specificity
21	CSS Media Queries

Understanding CSS

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- What is **style**?
  - **Style** is a list of formatting instructions.
- **CSS** stands for **C**ascading **S**tyle **S**heets.
- **CSS** is a **style sheet language** used for describe how HTML elements are to be displayed on screen, paper and in other media.
- A **C**ascading **S**tyle **S**heet is a file with a list of formatting instructions.
- **CSS** style sheets are the modern way to control the appearance and layout of your web pages.

CSS Syntax

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- A **CSS rule set** consists of a selector and a declaration block:

- The **selector** points to the HTML element you want to style.
- The **declaration block** contains one or more declarations separated by semicolons.
- Each **declaration** includes a property name and a value separated by a colon.

CSS Selectors

- **CSS Selectors** allow you to select and manipulate HTML elements.

- **CSS Selectors** are used to "find" (or select) HTML elements based on:
  - Element/ Tag Selector
  - Id Selector
  - Class Selector

CSS Selector Type

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CSS Selector Type	Description	Syntax
The element / tag selector	Selects elements based on the element name.	HTML: ElementName {property1 : value1 ; … }
The id selector	Uses the id attribute of an HTML element to select a specific element.	CSS: #idName {property1 : value1 ; … } HTML: <tag_name id="idName">… </tag_name>
The class selector	Selects elements with a specific class attribute.	CSS: #className {property1 : value1 ; … } HTML: <tag_name id="className">… </tag_name>

Combining Selectors

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Combining Selectors	Description	Example
.className tagName:	This selects all the specific tagName element inside an element with the class className. Note the space between .className and tagName	Consider 2 classes: classname & p which are defined as follows: ... ... Example for .className tagName is: .className p { background: brown; } Example for . tagName.className is: p.cheese { background: yellow; }
. tagName.className	This selects the tagName with a className. Note that there is no space between tagName and .className.	

CSS Attribute Selectors

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CSS Attribute Selectors	Description
[attribute] selector	Is used to select elements with a specified attribute.
[attribute=value] selector	Is used to select elements with a specified attribute and value.
[attribute~=value] selector	Is used to select elements with an attribute value containing a specified word.
[attribute|=value] selector	Is used to select elements with the specified attribute starting with the specified value.
[attribute*=value] selector	Is used to select elements whose attribute value contains a specified value.
[attribute$=value] selector	Is used to select elements whose attribute value ends with a specified value.

Attaching CSS Style

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- **Attach a style sheet to a page by adding the code to the <head> section of the HTML page**. There are **3 ways** to attach CSS to a page:

Style Sheet	Description	Syntax
External Style Sheet	The look of an entire website can be changed by changing just one file.	<head> <link rel="stylesheet" type="text/css" href="mystyle.css"> </head>
Internal/ Embedded Style Sheet	Best used to control styling on single page with a unique style.	<head> <style type="text/css"> CSS Selector Statements </style> </head>
Inline Style Sheet	Is used to apply a unique style for a single element.	<tagName style="property:value;…">… </tagName>

Cascading Order

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- What style will be used when there is more than one style specified for an HTML element?

- Styles will "cascade" into a new "virtual" style sheet by the rules given below, number one has the highest priority :
  - Inline style (inside an HTML element)
  - Internal style sheets (in the head section)
  - External style sheets (included from external file)

- So, an inline style (inside a specific HTML element) has the highest priority, which means that it will override a style defined inside the <head> tag, or in an external style sheet.

Display Property

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- The **display property** is the most important CSS property for controlling layout.
- The **display property** specifies if/how an element is displayed.

Elements	Description	Example
Block Element	Is an element that takes up the full width available, and has a line break before and after it.	Examples of block elements: <h1>, <p>, ,
Inline Element	Only takes up as much width as necessary, and does not force line breaks.	, <a>

Note: Setting display to none will render the page as though the element does not exist.

Setting visibility to hidden hides the element. But the element takes up the space as it would if it was fully visible.

CSS Font Properties

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- The **CSS font properties** define the font family, boldness, size, and the style of a text.
  - **Font family** of a text is set with the 'Font-Family' property
    - p { font-family: "Times New Roman", Times, serif; }
  - **Font-style** property is used to specify text to normal, italic, oblique
  - **Font-size** sets the size of the text
    - p { font-size: 14px; }
  - **Font Weight** property sets the weight, or thickness of a font
    - Possible values: normal, Bold, lighter, Bolder, or Numeric values
  - **Font Variant** property allows you to change the targeted text to small caps
    - Possible values : Normal(Default), inherit, small-caps

CSS Box Model

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- All HTML elements can be considered as **boxes**.
- The term **"box model"** is used when talking about design and layout.
- The **CSS box model** is essentially a box that wraps around every HTML element.
- It consists of: margins, borders, padding and the actual content.
- 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

CSS Box Model (Contd.)

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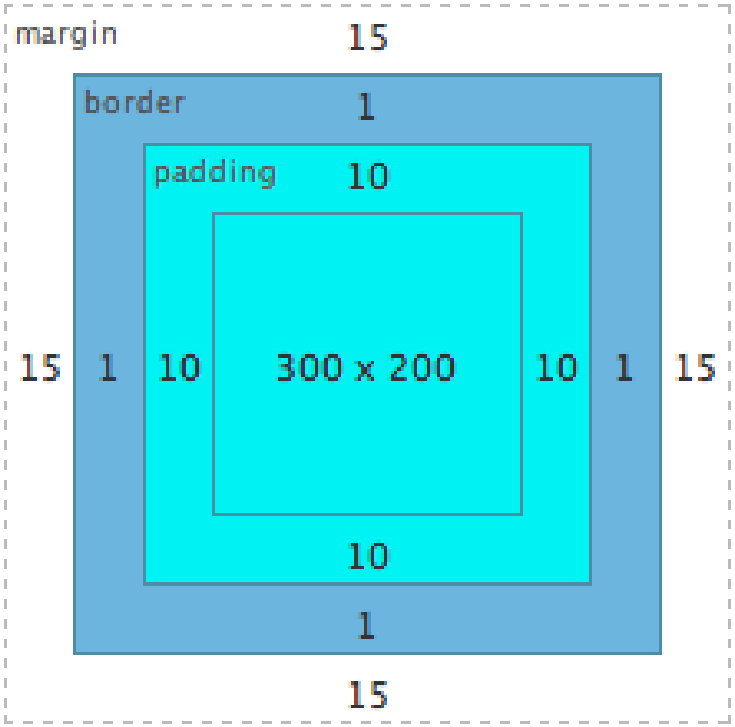
```
div {
width: 300px;
height: 200px;
padding: 10px;
border: 1px solid #000;
margin: 15px;
 }
```



The total size of the element above will be calculated as follows:

Total width = 15 + 1 + 10 + 300 + 10 + 1 + 15 = 352px

Total height = 15 + 1 + 10 + 200 + 10 + 1 + 15 = 252px

CSS Margin – auto & max-width

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- Setting the margin property to **auto** automatically aligns it to the center.

  Note: We have given two values. 0 auto means the top and bottom margins are 0 and left and right are auto. This is **shorthand notation**.

- Setting **max-width** property limits the stretch of the element when the screen resolution is higher.

- It's used for making a site usable on mobile.

```
#outer {
max-width: 600px;
margin: 0 auto;
}
```

CSS Background – Color Property

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Color Property	Description	Example
Keyword color	Values are names (such as red, green) that map to a given color.	background-color: yellow;
Hexadecimal color	Value is of a pound, or hash, #, followed by three or six-characters.	background-color: #00ff00;
RGB color	Value is stated using the rgb() function, which stands for red, green, and blue.	background-color: rgb(255,0,255);

CSS Links

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- **Links** can be styled in different ways.
- **Links** can be styled with any CSS property (e.g. color, font-family, background, etc.)

```
/* unvisited link */
a:link {
color: #FF0000;
}
/* visited link */
a:visited {
color: #00FF00;
}
/* mouse over link */
a:hover {
color: #FF00FF;
}
/* selected link */
a:active {
color: #0000FF;
}
```

CSS Units

- **CSS has several different units** for expressing a length.

- There are two types of length units:
  - Relative
  - Absolute

- **Relative Length** units specify a length relative to another length property.
  - We have percentages and ems for relative length.

- **Absolute Length** units are fixed. They are not recommended for use on screen because screen sizes vary much.
  - The most popular absolute unit of measurement is known as the pixel and is represented by the px unit notation.

Position Property

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- The **Position Property** specifies the type of positioning method used for an element (static, relative, fixed or absolute).

- There are four different position values:

  a) Static: HTML elements are positioned static by default. elements are not affected by the top, bottom, left, and right properties.

  b) Relative: Elements are positioned relative to its normal position. Setting the top, right, bottom, and left properties of a relatively-positioned element will cause it to be adjusted away from its normal position.

  c) Fixed: Elements are positioned relative to the viewport.

  - top, right, bottom, and left properties are used to position the element

  d) Absolute: Elements are positioned relative to the nearest positioned ancestor

Position Property (Contd.)

Overlapping Elements

- When elements are positioned, they can overlap other elements.

- The z-index property specifies the stack order of an element

Example:

```
img {
    position: absolute;
    top: 0px;
    z-index: -1;
}
```

CSS Float Property

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- The **float** property removes the element from the document flow and moves them to the edge specified in the float property.
- The **float** property specifies if an element should float or not.
- The **float** property can be used to wrap text around images.
- Using **float** property we can make the element float to the right or left inline within the container.

```
float: left / right / none
```

Problem With Float and its Solution

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- *Float has one major problem*:

  If we float any elements inside a container, then the container doesn't expand as per the size of elements.

- **Solution:**

```
.clearfix1 : after {
   content: ".";
   clear: both;
   display: block;
   height: 0;
   visibility: hidden;
}
```

```
.clearfix2{
   overflow:hidden;
}
```

```
.clearfix3{
   clear:both;
}
```

```
.clearfix4{
   clear:both; /*or left*/
}
```

Inheritance

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- **Inheritance** is the process by which some CSS properties applied to one tag are passed on to nested tags.
- Many CSS properties don’t pass down to descendant tags at all.
- For example, the border property (which lets you draw a box around an element) can’t be inherited.
- A general rule is that properties that affect the placement of elements on the page or the margins, background colors, and borders of elements can’t be inherited.

Specificity

- **Specificity** is the means by which a browser decides which property values are the most relevant to an element and thus will be applied.

Rule:

<ID selector count>:<class selectors count>:< tags selector count>

Example:

- Selector with score of 1:0:0 is higher than score of 0:4:1.
- Selector with score 0:1:0 is higher than 0:0:4

Note: A selector with a greater specificity score overwrites the other selector with lesser specificity irrespective of the order where the rules are written.

CSS Media Queries

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- A **media query** consists of a media type and at least one expression that limits the style sheet's scope by using media features, such as width, height, and color.

<!-- CSS media query on a link element -->

```
<link rel="stylesheet" media="(max-width:800px)"
href="example.css" />
```

<!-- CSS media query within a stylesheet -->

```
<style>
 @media (max-width: 600px)
 { .facet_sidebar
 { display: none; }
 }
</style>
```


Questions?

THANK YOU

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