

# Software Architecture



**CRAFT**

**knowledge**

# Objectives



## CSS Fundamental

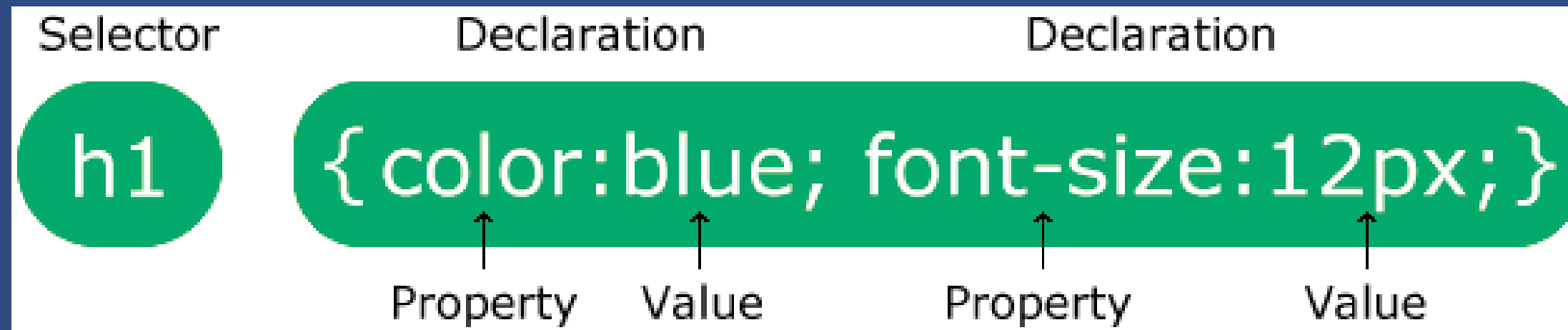
- What is CSS
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- CSS Text
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# What is CSS

- CSS stands for Cascading Style Sheets
- 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 Syntax

- A CSS rule consists of a selector and a declaration block.



## Where:

- 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 CSS property name and a value, separated by a colon.
- Multiple CSS declarations are separated with semicolons, and declaration blocks are surrounded by curly braces.

# CSS Selectors

- A CSS selector selects the HTML element(s) you want to style.
- CSS selectors are used to "find" (or select) the HTML elements you want to style.

## 1.The CSS element Selector

- The element selector selects HTML elements based on the element name.

Example:

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

- Here, all <p> elements on the page will be center-aligned, with a red text color:

## 2.The CSS id Selector

- The id selector uses the id attribute of an HTML element to select a specific element.
- The id of an element is unique within a page, so the id selector is used to select one unique element!
- To select an element with a specific id, write a hash (#) character, followed by the id of the element.

## Example:

- The CSS rule below will be applied to the HTML element with id="para1":

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

- **Note:** An id name cannot start with a number!

## 3.The CSS class Selector

- The class selector selects HTML elements with a specific class attribute.
- To select elements with a specific class, write a period (.) character, followed by the class name.

### Example

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

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

### Example

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

- Note: A class name cannot start with a number!

# How To Add CSS

- When a browser reads a style sheet, it will format the HTML document according to the information in the style sheet.
- Three Ways to Insert CSS
  - External CSS
  - Internal CSS
  - Inline CSS

## 1. External CSS

- With an external style sheet, you can change the look of an entire website by changing just one file!
- Each HTML page must include a reference to the external style sheet file inside the <link> element, inside the head section.

### Example

- External styles are defined within the <link> element, inside the <head> section of an HTML page:  
`<link rel="stylesheet" href="mystyle.css">`

## 2. Internal CSS

- An internal style sheet may be used if one single HTML page has a unique style.
- The internal style is defined inside the <style> element, inside the head section.

### Example

```
<style>
    body {
        background-color: linen;
    }
</style>
```

### 3. Inline CSS

- An inline style may be used to apply a unique style for a single element.
- To use inline styles, add the style attribute to the relevant element. The style attribute can contain any CSS property.

Example.

Inline styles are defined within the "style" attribute of the relevant element:

```
<h1 style="color:blue;text-align:center;">This is a heading</h1>
```

```
<p style="color:red;">This is a paragraph.</p>
```

- **Cascading Order**

- What style will be used when there is more than one style specified for an HTML element?
- All the styles in a page will "cascade" into a new "virtual" style sheet by the following rules, where number one has the highest priority:
  1. Inline style (inside an HTML element)
  2. internal style sheets (in the head section)
  3. External
  4. Browser default
- So, an inline style has the highest priority, and will override external and internal styles and browser defaults.

# CSS Colors

- Colors are specified using predefined color names, or RGB.

## 1. CSS Color Names

In CSS, a color can be specified by using a predefined color name:

- Tomato
- Orange
- DodgerBlue
- MediumSeaGreen
- Gray
- SlateBlue
- Violet
- LightGray

## 2. CSS RGB Colors

- An RGB color value represents RED, GREEN, and BLUE light sources.
- In CSS, a color can be specified as an RGB value, using this formula:
- `rgb(red, green, blue)`
- Each parameter (red, green, and blue) defines the intensity of the color between 0 and 255.
- For example,
  - `rgb(255, 0, 0)` is displayed as red, because red is set to its highest value (255) and the others are set to 0.
  - To display black, set all color parameters to 0, like this: `rgb(0, 0, 0)`.
  - To display white, set all color parameters to 255, like this: `rgb(255, 255, 255)`.



# CSS Colors

- **1. CSS Background Color**

- You can set the background color for HTML elements:

Example

```
<h1 style="background-color:DodgerBlue;">Hello World</h1>
```

```
<p style="background-color:Tomato;">Lorem ipsum...</p>
```

- **2. CSS Text Color**

- You can set the color of text:

Example

```
<h1 style="color:Tomato;">Hello World</h1>
```

```
<p style="color:DodgerBlue;">Lorem ipsum...</p>
```

```
<p style="color:MediumSeaGreen;">Ut wisi enim...</p>
```

- **3. CSS Border Color**

- You can set the color of borders:

Example

```
<h1 style="border:2px solid Tomato;">Hello World</h1>
```

```
<h1 style="border:2px solid DodgerBlue;">Hello World</h1>
```

```
<h1 style="border:2px solid Violet;">Hello World</h1>
```

# CSS background

- The CSS background properties are used to add background effects for elements.
  - background-color
  - background-image
  - background-repeat
  - background-attachment
  - background-position

## 1. CSS background-color

- The background-color property specifies the background color of an element.

Example

The background color of a page is set like this:

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

- You can set the background color for any HTML elements:
- Here, the <h1>, <p>, and <div> elements will have different background colors:
- The opacity property specifies the opacity/transparency of an element.
- It can take a value from 0.0 - 1.0. The lower value, the more transparent:  
opacity: 0.3;

# CSS background

- **2. CSS 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");  
}
```

- By default, the background-image property repeats an image both horizontally and vertically.
  - To repeat an image vertically, set background-repeat: repeat-y;
  - To repeat an image horizontally , set background-repeat: repeat-x;
  - Show the background image only once, background-repeat: no-repeat;
- The **background-position** property is used to specify the position of the background image.
  - Position the background image in the top-right corner:
- The **background-attachment** property specifies whether the background image should scroll or be fixed
  - background-attachment: fixed;
  - background-attachment: scroll;

# CSS Borders

- The CSS border properties allow you to specify the style, width, and color of an element's border.

- **1. 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

Example

```
border-style: dotted;  
border-style: dashed;  
border-style: solid;
```

- **2. CSS Border Width**

- The border-width property specifies the width of the four borders.
- The width can be set as a specific size (in px, pt, cm, em, etc)

Example

```
border-width: 5px;
```

- **3. CSS Border Color**

- The border-color property is used to set the color of the four borders.
- The color can be set by: color name - specify a color name, like "red" or RGB - specify a RGB value, like "rgb(255,0,0)"
- Note: If border-color is not set, it inherits the color of the element.

Example

```
border-style: solid;  
border-color: red;
```

# CSS Margins

- The CSS margin properties are used to create space around elements, outside of any defined borders.

- **Margin - Individual Sides**

- 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

## Example

- Set different margins for all four sides of a <p> element:

```
p {  
    margin-top: 100px;  
    margin-bottom: 100px;  
    margin-right: 150px;  
    margin-left: 80px;  
}
```

# CSS Padding

- Padding is used to create space around an element's content, inside of any defined borders.
- **Padding - Individual Sides**
- CSS has properties for specifying the padding for each side of an element:
  - padding-top
  - padding-right
  - padding-bottom
  - padding-left
- All the padding 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

# CSS Height, Width and Max-width

- The CSS height and width properties are used to set the height and width of an element.
- The CSS max-width property is used to set the maximum width of an element.

## 1. CSS Setting height and width

- The height and width properties are used to set the height and width of an element.
- The height and width properties do not include padding, borders, or margins. It sets the height/width of the area inside the padding, border, and margin of the element.

## 2. CSS height and width Values

- The height and width properties may have the following values:
- auto - This is default. The browser calculates the height and width
- length - Defines the height/width in px, cm, etc.
- % - Defines the height/width in percent of the containing block
- initial - Sets the height/width to its default value
- inherit - The height/width will be inherited from its parent value

# CSS Text

- CSS has a lot of properties for formatting text.
- **1. Text Color**
  - The color property is used to set the color of the text. The color is specified by:
    - a color name - like "red"`color: green;`
- **2. Text Color and Background Color**
  - In this example, we define both the background-color property and the color property:  
**Example:**  
`background-color: black;`  
`color: white;`
- **3. 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.  
**Example:**  
`text-align: center;`
- **4. CSS Text Shadow**  
**Example:**  
`text-shadow: 2px 2px;`



# CSS Text

- 5. Text Font

- In CSS there are five generic font families:

1. Serif fonts have a small stroke at the edges of each letter. They create a sense of formality and elegance.
2. Sans-serif fonts have clean lines (no small strokes attached). They create a modern and minimalistic look.
3. Monospace fonts - here all the letters have the same fixed width. They create a mechanical look.
4. Cursive fonts imitate human handwriting.
5. Fantasy fonts are decorative/playful fonts.

Example:

font-family: "Times New Roman", Times, serif;

font-family: Arial, Helvetica, sans-serif;

font-family: "Lucida Console", "Courier New", monospace;

- 6. Font Style

- The font-style property is mostly used to specify italic text.

- This property has three values:

- normal - The text is shown normally
  - italic - The text is shown in italics
  - oblique - The text is "leaning" (oblique is very similar to italic, but less supported)

- Example

font-style: normal;

# CSS Links

- Text Decoration

- The text-decoration property is mostly used to remove underlines from links:

**Example:**

```
a:link {  
    text-decoration: none;  
}
```

- Background Color

- The background-color property can be used to specify a background color for links:

**Example**

```
a:link {  
    background-color: yellow;  
}
```

# CSS Tables

## 1. Table Borders

- To specify table borders in CSS, use the border property.
- The example below specifies a solid border for <table>, <th>, and <td> elements:

### Example

```
table,  
th,td {  
  border: 1px solid;  
}
```

- **Full-Width Table**

- The table above might seem small in some cases. If you need a table that should span the entire screen (full-width), add width: 100% to the <table> element:

### Example

```
table {  
  width: 100%;  
}
```

- **Collapse Table Borders**

- The border-collapse property sets whether the table borders should be collapsed into a single border:

- CSS Table Alignment

1. Horizontal Alignment

- The text-align property sets the horizontal alignment (like left, right, or center) of the content in <th> or <td>.

# The float Property

- The float property is used for positioning and formatting content e.g. let an image float left to the text in a container.
- The float property can have one of the following values:
  - left - The element floats to the left of its container
  - right - The element floats to the right of its container
  - none - The element does not float (will be displayed just where it occurs in the text). This is default
  - inherit - The element inherits the float value of its parent
- In its simplest use, the float property can be used to wrap text around images.

```
img {  
  float: right;  
  float: none;  
  float: left;  
}
```