

Introduction to CSS

Beautification of the Web

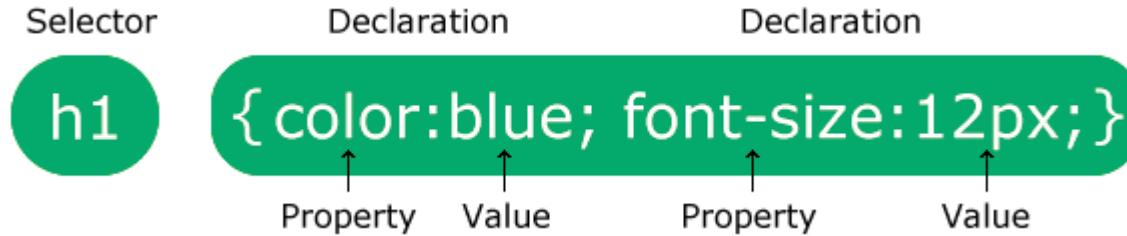
BY

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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 is used to define styles for your web pages, including the design, layout and variations in display for different devices and screen sizes.

CSS Syntax



- A CSS rule 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 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

- CSS selectors are used to "find" (or select) the HTML elements you want to style.
- We can divide CSS selectors into five categories:
 - Simple selectors (select elements based on name, id, class)
 - Combinator selectors (select elements based on a specific relationship between them)
 - Pseudo-class selectors (select elements based on a certain state)
 - Pseudo-elements selectors (select and style a part of an element)
 - Attribute selectors (select elements based on an attribute or attribute value)

The CSS element Selector

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

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

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.

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

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.

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

The CSS Universal Selector

- The universal selector (*) selects all HTML elements on the page..
- The CSS rule below will affect every HTML element on the page:

```
* {  
  text-align: center;  
  color: blue;  
}
```


The CSS Grouping Selector

- The grouping selector selects all the HTML elements with the same style definitions.
- Look at the following CSS code (the h1, h2, and p elements have the same style definitions):

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

- It will be better to group the selectors, to minimize the code.
- To group selectors, separate each selector with a comma.

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

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.
- There are three ways of inserting a style sheet:
 - Inline
 - Internal CSS
 - External CSS

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

```
• <!DOCTYPE html>
  <html>
  <body>

  <h1 style="color:blue;text-align:center;">This is a heading</h1>
  <p style="color:red;">This is a paragraph.</p>

  </body>
  </html>
```

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.
- Internal styles are defined within the <style> element, inside the <head> section of an HTML page:

```
<!DOCTYPE html>
<html>
<head>
<style>
body {
    background-color: linen;
}

h1 {
    color: maroon;
    margin-left: 40px;
}
</style>
</head>
<body>

<h1>This is a heading</h1>
<p>This is a paragraph.</p>

</body>
</html>
```

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..
- External styles are defined within the <link> element, inside the <head> section of an HTML page:

- **HTML File**

```
<!DOCTYPE html>
<html>
<head>
<link rel="stylesheet" href="mystyle.css">
</head>
<body>

<h1>This is a heading</h1>
<p>This is a paragraph.</p>

</body>
</html>
```

Css file

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

h1 {
  color: navy;
  margin-left: 20px;
}
```

CSS Comments

- CSS comments are not displayed in the browser, but they can help document your source code.
- Comments are used to explain the code, and may help when you edit the source code at a later date.
- Comments are ignored by browsers.

- A CSS comment is placed inside the <style> element, and starts with /* and ends with */:

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

```
p {  
  color: red;  
}
```

- You can add comments wherever you want in the code:

- ```
p {
 color: red; /* Set text color to red */
}
```

- Comments can also span multiple lines:

- ```
/* This is  
a multi-line  
comment */  
p {  
  color: red;  
}
```

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}
```

CSS Colors

- Colors are specified using predefined color names, or RGB(RED, GREEN, and BLUE), HEX(Hexadecimal color) , HSL(*hue, saturation, lightness*) values.
- In CSS, a color can be specified by using a predefined color name:
 - Tomato, Orange, DodgerBlue, MediumSeaGreen, Gray, SlateBlue, Violet, LightGray etc.

- CSS Background Color:

- `<h1 style="background-color:DodgerBlue;">Hello World</h1>`
`<p style="background-color:Tomato;">Lorem ipsum...</p>`

- CSS Text Color

- `<h1 style="color:Tomato;">Hello World</h1>`
`<p style="color:DodgerBlue;">Lorem ipsum...</p>`
`<p style="color:MediumSeaGreen;">Ut wisi enim...</p>`

- CSS Border Color

- `<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 Backgrounds

- The CSS background properties are used to add background effects for elements.
- CSS background-color: The background-color property specifies the background color of an element.
- ```
div {
 background-color: green;
 opacity: 0.3;
}
```
- 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.
- ```
body {  
  background-image: url("bgdesert.jpg");  
}
```
- CSS background-attachment: The background-attachment property specifies whether the background image should scroll or be fixed (will not scroll with the rest of the page):
- ```
body {
 background-image: url("img_tree.png");
 background-repeat: no-repeat;
 background-position: right top;
 background-attachment: fixed;
}
```

# CSS Border Style

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- The border-style property specifies what kind of border to display.
- The following values are allowed:
  - 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).
- `p.dotted {border-style: dotted;}`  
`p.dashed {border-style: dashed;}`  
`p.solid {border-style: solid;}`  
`p.double {border-style: double;}`

# CSS Border Width

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- 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) or by using one of the three pre-defined values: thin, medium, or thick:

- ```
p.one {  
  border-style: solid;  
  border-width: 5px;  
}
```

```
p.two {  
  border-style: solid;  
  border-width: medium;  
}
```

```
p.three {  
  border-style: dotted;  
  border-width: 2px;  
}
```

```
p.four {  
  border-style: dotted;  
  border-width: thick;  
}
```

CSS Border Color

- The border-color property is used to set the color of the four borders.
- The color can be set by:
 - name - specify a color name, like "red"
 - HEX - specify a HEX value, like "#ff0000"
 - RGB - specify a RGB value, like "rgb(255,0,0)"
 - HSL - specify a HSL value, like "hsl(0, 100%, 50%)"
 - transparent
- Note: If border-color is not set, it inherits the color of the element.

- Example:

- ```
p.one {
 border-style: solid;
 border-color: red;
}
```

```
p.two {
 border-style: solid;
 border-color: green;
}
```

```
p.three {
 border-style: dotted;
 border-color: blue;
}
```

- Border Shorthand >> 

```
p { border: 5px solid red;}
```

# CSS Margins

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- The CSS margin properties are used to create space around elements, outside of any defined borders.
- With CSS, you have full control over the margins. There are properties for setting the margin for each side of an element (top, right, bottom, and left).
- 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

# CSS Padding

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- The CSS padding properties are used to generate space around an element's content, inside of any defined borders..
- With CSS, you have full control over the padding. There are properties for setting the padding for each side of an element (top, right, bottom, and left).
- 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

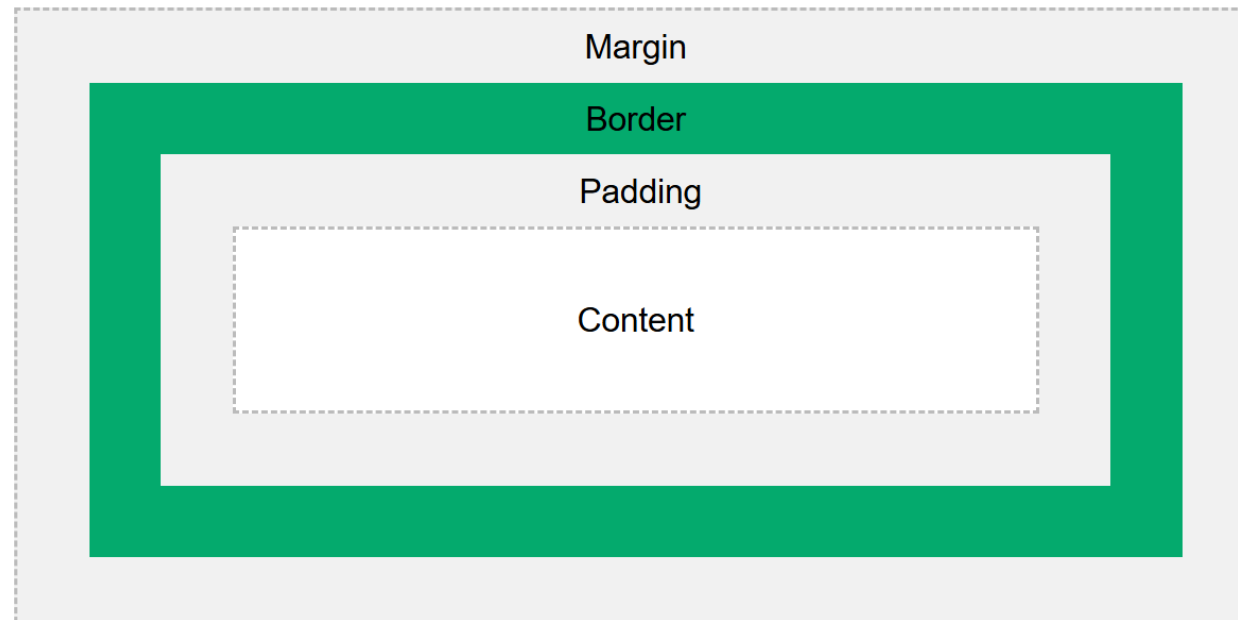
---

- 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.
- 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.
- 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
- 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).

# The CSS Box Model

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- In CSS, 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: content, padding, borders and margins. The image below illustrates the 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



# CSS Text

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- CSS has a lot of properties for formatting text such as:
- **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)"
- **Text Color and Background Color:**
- **Text Alignment and Text Direction:**
  - text-align
  - text-align-last
  - direction
  - unicode-bidi
  - vertical-align
- **Text Decoration:**
  - text-decoration-line
  - text-decoration-color
  - text-decoration-style
  - text-decoration-thickness
  - text-decoration
- **Text Transformation**
- **Text Spacing:**
  - text-indent
  - letter-spacing
  - line-height
  - word-spacing
  - white-space

# CSS Fonts

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- Choosing the right font has a huge impact on how the readers experience a website.
- The right font can create a strong identity for your brand.
- Using a font that is easy to read is important. The font adds value to your text. It is also important to choose the correct color and text size for the font.
- In CSS there are five generic font families:
  - Serif fonts have a small stroke at the edges of each letter. They create a sense of formality and elegance.
  - Sans-serif fonts have clean lines (no small strokes attached). They create a modern and minimalistic look.
  - Monospace fonts - here all the letters have the same fixed width. They create a mechanical look.
  - Cursive fonts imitate human handwriting.
  - Fantasy fonts are decorative/playful fonts.
- Font Properties:
  - Font-size
  - Font-Family
  - Font-style

# CSS Icons

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- Icons can easily be added to your HTML page, by using an icon library.
- The simplest way to add an icon to your HTML page, 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 `<span>`).
- All the icons in the icon libraries below, are scalable vectors that can be customized with CSS (size, color, shadow, etc.)
- To use the Font Awesome icons, go to [fontawesome.com](https://fontawesome.com), sign in, and get a code to add in the `<head>` section of your HTML page:
  - `<script src="https://kit.fontawesome.com/yourcode.js" crossorigin="anonymous"></script>`
- 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">`
- To use the Google icons, add the following line inside the `<head>` section of your HTML page:
  - `<link rel="stylesheet" href="https://fonts.googleapis.com/icon?family=Material+Icons">`

# CSS Links

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- With CSS, links can be styled in many different ways.

Text Link

Text Link

Link Button

Link Button

- Links can be styled with any CSS property (e.g. color, font-family, background, etc.).
- In addition, links can be styled differently depending on what state they are in.
- The four links states are:
  - a:link - a normal, unvisited link
  - a:visited - a link the user has visited
  - a:hover - a link when the user mouses over it
  - a:active - a link the moment it is clicked
- The text-decoration property is mostly used to remove underlines from links:
- The background-color property can be used to specify a background color for links:

# CSS Lists

---

- In HTML, there are two main types of lists:
  - unordered lists (<ul>) - the list items are marked with bullets
  - ordered lists (<ol>) - the list items are marked with numbers or letters
  - The CSS list properties allow you to:
- Set different list item markers for ordered lists
  - Set different list item markers for unordered lists
  - Set an image as the list item marker
  - Add background colors to lists and list items

# CSS Tables

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- Choosing the right font has a huge impact on how the readers experience a website.

# CSS Layout - The display Property

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- Choosing the right font has a huge impact on how the readers experience a website.

# CSS Layout - The position Property

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# CSS Layout - The z-index Property

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# CSS Layout - float and clear

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- Choosing the right font has a huge impact on how the readers experience a website.

# CSS Opacity / Transparency

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- Choosing the right font has a huge impact on how the readers experience a website.

# CSS Navigation Bar

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- Choosing the right font has a huge impact on how the readers experience a website.

# CSS Dropdowns

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# CSS Forms

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# CSS Flexbox

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# CSS Grid

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