Introduction to CSS

1. 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

## CSS Syntax

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 CSS property name and a value, separated by a colon.
* A CSS declaration always ends with a semicolon, and declaration blocks are surrounded by curly braces.

1. How to insert CSS codes…
   1. **External style sheet**  
      With an external style sheet, you can change the look of an entire website by changing just one file.

|  |  |
| --- | --- |
| mystyle.css | Sample.html |
| body {  background-color: lightblue;  }  h1 {  color: navy;  margin-left: 20px;  } | <!DOCTYPE html>  <html>  <head>  <link rel=**"stylesheet"** type=**"text/css"** href=**"mystyle.css"**>  </head>  <body>  <h1>**This is a heading**</h1>  <p>**This is a paragraph.**</p>  </body>  </html> |

* 1. **Internal style sheet**  
     An internal style sheet may be used if one single page has a unique style.

|  |
| --- |
| <! 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> |

* 1. **Inline styles**  
     An inline style may be used to apply a unique style for a single element.

|  |
| --- |
| <!DOCTYPE html>  <html>  <body>  <h1 style=**"color:blue;margin-left:30px;"**>**This is a heading**</h1>  <p>**This is a paragraph.**</p>  </body>  </html> |

1. **Priority List:**  
   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. External and internal style sheets (that comes later)
3. Browser default

So, an inline style has the highest priority, and will override external and internal styles and browser defaults.

1. **CSS Selectors**

|  |  |
| --- | --- |
| Selector Name | Sample HTML code |
| .class | <!DOCTYPE html>  <html>  <head>  <style>  **.intro {**  **background-color: yellow;**  **}**  </style>  </head>  <body>  <h1>**Welcome to My Homepage**</h1>  <div class=**"intro"**>  <p>**My name is Donald.**</p>  <p>**I live in Duckburg.**</p>  </div>  <p>**My best friend is Mickey.**</p>  </body>  </html> |
| #id | <!DOCTYPE html>  <html>  <head>  <style>  **#firstname {**  **background-color: yellow;**  **}**  </style>  </head>  <body>  <h1>**Welcome to My Homepage**</h1>  <div class=**"intro"**>  <p id=**"firstname"**>**My name is Donald.**</p>  <p id=**"hometown"**>**I live in Duckburg.**</p>  </div>  <p>**My best friend is Mickey.**</p>  </body>  </html> |
| element | <!DOCTYPE html>  <html>  <head>  <style>  **p {**  **background-color: yellow;**  **}**  </style>  </head>  <body>  <h1>**Welcome to My Homepage**</h1>  <div>  <p id=**"firstname"**>**My name is Donald.**</p>  <p id=**"hometown"**>**I live in Duckburg.**</p>  </div>  <p>**My best friend is Mickey.**</p>  </body>  </html> |
| element1, element2  to select multiple elements | <!DOCTYPE html>  <html>  <head>  <style>  **h1, p {**  **background-color: yellow;**  **}**  </style>  </head>  <body>  <h1>**Welcome to My Homepage**</h1>  <div>  <p>**My name is Donald.**</p>  <p>**I live in Duckburg.**</p>  </div>  <p>**My best friend is Mickey.**</p>  </body>  </html> |
| element1 element2  (descendant selector, elements within elements) | <!DOCTYPE html>  <html>  <head>  <style>  **div p {**  **background-color: yellow;**  **}**  </style>  </head>  <body>  <div>  <p>**Paragraph 1 in the div.**</p>  <p>**Paragraph 2 in the div.**</p>  <span><p>**Paragraph 3 in the div.**</p></span>  </div>  <p>**Paragraph 4. Not in a div.**</p>  <p>**Paragraph 5. Not in a div.**</p>  </body>  </html> |
| element1 > element2   (child selector) | <!DOCTYPE html>  <html>  <head>  <style>  **div > p {**  **background-color: yellow;**  **}**  </style>  </head>  <body>  <div>  <p>**Paragraph 1 in the div.**</p>  <p>**Paragraph 2 in the div.**</p>  <span><p>**Paragraph 3 in the div.**</p></span><!-- not Child but Descendant -->  </div>  <p>**Paragraph 4. Not in a div.**</p>  <p>**Paragraph 5. Not in a div.**</p>  </body>  </html> |
| element1 + element2  (adjacent sibling selector) | <!DOCTYPE html>  <html>  <head>  <style>  **div + p {**  **background-color: yellow;**  **}**  </style>  </head>  <body>  <div>  <p>**Paragraph 1 in the div.**</p>  <p>**Paragraph 2 in the div.**</p>  </div>  <p>**Paragraph 3. Not in a div.**</p>  <p>**Paragraph 4. Not in a div.**</p>  </body>  </html> |
| element1 ~ element2  (general sibling selector) | <!DOCTYPE html>  <html>  <head>  <style>  **div ~ p {**  **background-color: yellow;**  **}**  </style>  </head>  <body>  <p>**Paragraph 1.**</p>  <div>  <code>**Some code.**</code>  <p>**Paragraph 2.**</p>  </div>  <p>**Paragraph 3.**</p>  <code>**Some code.**</code>  <p>**Paragraph 4.**</p>  </body>  </html> |
| [attribute=value] | <!DOCTYPE html>  <html>  <head>  <style>  **a[target=\_blank] {**  **background-color: yellow;**  **}**  </style>  </head>  <body>  <p>**The link with target="\_blank" gets a yellow background:**</p>  <a href=**"**https://www.w3schools.com**"**>**w3schools.com**</a>  <a href=**"**http://www.disney.com**"** target=**"\_blank"**>**disney.com**</a>  <a href=**"**http://www.wikipedia.org**"** target=**"\_top"**>**wikipedia.org**</a>  <p><b>**Note:**</b> **For [**<i>**attribute**</i>**] to work in IE8 and earlier, a DOCTYPE must be declared.**</p>  </body>  </html> |
| :active :link :hover :visited  (pseudo-class🡪 used to define a special state of an element) | <!DOCTYPE html>  <html>  <head>  <style>  **/\* unvisited link \*/**  **a:link {**  **color: red;**  **}**  **/\* visited link \*/**  **a:visited {**  **color: green;**  **}**  **/\* mouse over link \*/**  **a:hover {**  **color: hotpink;**  **}**  **/\* selected link \*/**  **a:active {**  **color: blue;**  **}**  </style>  </head>  <body>  <p><b><a href=**"default.asp"** target=**"\_blank"**>**This is a link**</a></b></p>  <p><b>**Note:**</b> **a:hover MUST come after a:link and a:visited in the CSS definition in order to be effective.**</p>  <p><b>**Note:**</b> **a:active MUST come after a:hover in the CSS definition in order to be effective.**</p>  </body>  </html> |
| :nth-child(child\_no)  Or,  :nth-last-child(child\_no) | <!DOCTYPE html>  <html>  <head>  <style>  **p:nth-child(2) {**  **background: red;**  **}**  </style>  </head>  <body>  <p>**The first paragraph.**</p>  <p>**The second paragraph.**</p>  <p>**The third paragraph.**</p>  <p>**The fourth paragraph.**</p>  <p><b>**Note:**</b> **Internet Explorer 8 and earlier versions do not support the :nth-child() selector.**</p>  </body>  </html> |
| :required | Selects input elements with the "required" attribute specified |
| :not(selector) | Selects every element that is not a <p> element |
| :checked | Selects every checked <input> element |

1. CSS Properties

|  |  |
| --- | --- |
| properties | Sample HTML codes |
| 1. background-color: red / rgb(1,0,0) / #ff3300 2. background-image: url(‘image path’) 3. background-repeat: repeat / repeat-x / repeat-y / no-repeat / space 4. background-attachment: scroll / fixed 5. background-position:  left top / left center / left bottom / right top / right center / right bottom /  center top / center center / center bottom /  10px 10px 6. background-size: auto / 100px 100px / 100% 50% / cover | <!DOCTYPE html>  <html>  <head>  <style>  **body {**  **background-image: url("img\_tree.png");**  **background-repeat: no-repeat;**  **background-position: right top;**  **margin-right: 200px;**  **background-attachment: fixed;**  **}**  </style>  </head>  <body>  <h1>**Hello World!**</h1>  <p>**The background-image is fixed. Try to scroll down the page.**</p>  <p>**The background-image is fixed. Try to scroll down the page.**</p>  <p>**The background-image is fixed. Try to scroll down the page.**</p>  <p>**If you do not see any scrollbars, try to resize the browser window.**</p>  </body>  </html> |
|  | |
| * + 1. border-width : 1px / 1px 2px / 1px 2px 3px 4px     2. border-style : dotted / dashed / solid / double / inset / none / hidden     3. border-color : red / rgb(20,20,20) / #fffff0     4. border-radius : 5px     5. Other forms:   use “border-top / border-bottom / border-right / border-left “ in place of ‘border’  Short rep. : border: 1px solid red; | <!DOCTYPE html>  <html>  <head>  <style>  **p.round1{**  **border-top-style: dotted;**  **border-right-style: solid;**  **border-bottom-style: dotted;**  **border-left-style: solid;**  **}**  **p.normal {**  **border: 2px solid red;**  **}**  **p.round2 {**  **border: 2px solid red;**  **border-radius: 8px;**  **}**  </style>  </head>  <body>  <h2>**The border-radius Property**</h2>  <p>**This property is used to add rounded borders to an element:**</p>  <p class=**"normal"**>**Normal border**</p>  <p class=**"round1"**>**Rounder border**</p>  <p class=**"round2"**>**Rounder border**</p>  <p><b>**Note:**</b> **The "border-radius" property is not supported in IE8 and earlier versions.**</p>  </body>  </html> |
| 1. margin : 5px 10px 15px 20px 2. margin-top : 5px 3. margin-right: 10px 4. margin-bottom:15px 5. margin-left : 20px |  |
| 1. padding : 5px 10px 15px 20px 2. padding-top : 5px 3. padding-right: 10px 4. padding-bottom:15px 5. padding-left : 20px |  |
| 1. height : 50% / 200px / auto 2. max-height: 50% / 200px / auto 3. min-height: 50% / 200px / auto 4. width : 50% / 200px / auto 5. max-width: 50% / 200px / auto 6. min-width: 50% / 200px / auto | <!DOCTYPE html>  <html>  <head>  <style>  **div {**  **background-color: lightgrey;**  **width: 300px;**  **border: 25px solid green;**  **padding: 25px;**  **margin: 25px;**  **}**  </style>  </head>  <body>  <h2>**Demonstrating the Box Model**</h2>  <p>**The CSS box model is essentially a box that wraps around every HTML element. It consists of: borders, padding, margins, and the actual content.**</p>  <div>**This text is the actual content of the box. We have added a 25px padding, 25px margin and a 25px green border. Ut enim ad minim veniam, quis nostrud exercitation ullamco laboris nisi ut aliquip ex ea commodo consequat. Duis aute irure dolor in reprehenderit in voluptate velit esse cillum dolore eu fugiat nulla pariatur. Excepteur sint occaecat cupidatat non proident, sunt in culpa qui officia deserunt mollit anim id est laborum.**</div>  </body>  </html> |
| Text properties:  1. color : blue / rgb(1,0,0) / #ffaa00  2. text-align: center / left/ right / justify  3. vertical-align: sub / sup / top / middle / bottom  4. text-decoration: none / overline / line- through / underline   5. text-transform: uppercase / lowercase / capitalize  6. letter-spacing: 5px | <!DOCTYPE html>  <html>  <head>  <style>  **h1 {**  **text-align: center;**  **}**  **h2 {**  **text-align: left;**  **}**  **h3 {**  **text-align: right;**  **}**  </style>  </head>  <body>  <h1>**Heading 1 (center)**</h1>  <h2>**Heading 2 (left)**</h2>  <h3>**Heading 3 (right)**</h3>  <p>**The three headings above are aligned center, left and right.**</p>  </body>  </html> |
| Font handling:  1. font-family: “Times New Roman”  2. font-style : normal / italic  3. font-size: 20px |  |
| Icons | <!DOCTYPE html>  <html>  <head>  <title>**Bootstrap Icons**</title>  <meta name=**"viewport"** content=**"width=device-width, initial-scale=1"**>  <link rel=**"stylesheet"** href=**"**https://maxcdn.bootstrapcdn.com/bootstrap/3.3.7/css/bootstrap.min.css**"**>  </head>  <body class=**"container"**>  <p>**Some Bootstrap icons:**</p>  <i class=**"glyphicon glyphicon-cloud"**></i>  <i class=**"glyphicon glyphicon-remove"**></i>  <i class=**"glyphicon glyphicon-user"**></i>  <i class=**"glyphicon glyphicon-envelope"**></i>  <i class=**"glyphicon glyphicon-thumbs-up"**></i>  <br><br>  <p>**Styled Bootstrap icons (size and color):**</p>  <i class=**"glyphicon glyphicon-cloud"** style=**"font-size:24px;"**></i>  <i class=**"glyphicon glyphicon-cloud"** style=**"font-size:36px;"**></i>  <i class=**"glyphicon glyphicon-cloud"** style=**"font-size:48px;color:red;"**></i>  <i class=**"glyphicon glyphicon-cloud"** style=**"font-size:60px;color:lightblue;"**></i>  </body>  </html> |
| Table handling,   1. border-collapse: collapse; | **Create a table that has the following properties,  Header has a specific color, striped table, mouse-hovering cells will change color, responsive table** |
| 1. display: none / inline / block | <!DOCTYPE html>  <html>  <head>  <style>  **h1.hidden {**  **visibility: hidden;**  **}**  **li {**  **display: inline;**  **}**  </style>  </head>  <body>  <h1>**This is a visible heading**</h1>  <h1 class=**"hidden"**>**This is a hidden heading**</h1>  <p>**Notice that the hidden heading still**  **takes up space.**</p>  <p>**Display a list of links as a horizontal menu:**</p>  <ul>  <li><a href=**"/html/default.asp"** target=**"\_blank"**>**HTML**</a></li>  <li><a href=**"/css/default.asp"** target=**"\_blank"**>**CSS**</a></li>  <li><a href=**"/js/default.asp"** target=**"\_blank"**>**JavaScript**</a></li>  </ul>  </body>  </html> |
| position property:  1. position : static / relative / fixed /absolute /sticky  2. z-index: -1  3. top: 5px , left: 5px , right: 5px, bottom: 5px |  |
| 1. overflow: visible / hidden /scroll /auto | <!DOCTYPE html>  <html>  <head>  <style>  **div {**  **background-color: #eee;**  **width: 200px;**  **height: 50px;**  **border: 1px dotted black;**  **overflow-x: hidden;**  **overflow-y: scroll;**  **}**  </style>  </head>  <body>  <h2>**CSS Overflow**</h2>  <p>**You can also change the overflow of content horizontally or vertically.**</p>  <p>**overflow-x specifies what to do with the left/right edges of the content.**<br>  **overflow-y specifies what to do with the top/bottom edges of the content.**</p>  <div>**You can use the overflow property when you want to have better control of the layout. The overflow property specifies what happens if content overflows an element's box.**</div>  </body>  </html> |
| 1. float: left/ right/ none 2. clear: none / both/ left / right | <!DOCTYPE html>  <html>  <head>  <style>  **.div1 {**  **float: left;**  **width: 100px;**  **height: 50px;**  **margin: 10px;**  **border: 3px solid #73AD21;**  **}**  **.div2 {**  **border: 1px solid red;**  **}**  **.div3 {**  **float: left;**  **width: 100px;**  **height: 50px;**  **margin: 10px;**  **border: 3px solid #73AD21;**  **}**  **.div4 {**  **border: 1px solid red;**  **clear: left;**  **}**  </style>  </head>  <body>  <h2>**Without clear**</h2>  <div class=**"div1"**>**div1**</div>  <div class=**"div2"**>**div2 - Notice that div2 is after div1 in the HTML code. However, since div1 floats to the left, the text in div2 flows around div1.**</div>  <br><br>  <h2>**With clear**</h2>  <div class=**"div3"**>**div3**</div>  <div class=**"div4"**>**div4 - Here, clear: left; moves div4 down below the floating div3. The value "left" clears elements floated to the left. You can also clear "right" and "both".**</div>  </body>  </html> |
| 1. opacity: 0.5; | <!DOCTYPE html>  <html>  <head>  <style>  **img:hover {**  **opacity: 0.5;**  **filter: alpha(opacity=50); /\* For IE8 and earlier \*/**  **}**  </style>  </head>  <body>  <h1>**Image Transparency**</h1>  <p>**The opacity property is often used together with the :hover selector to change the opacity on mouse-over:**</p>  <img src=**"img\_forest.jpg"** alt=**"Forest"** width=**"170"** height=**"100"**>  <img src=**"img\_mountains.jpg"** alt=**"Mountains"** width=**"170"** height=**"100"**>  <img src=**"img\_5terre.jpg"** alt=**"Italy"** width=**"170"** height=**"100"**>  <p><b>**Note:**</b> **In IE, a !DOCTYPE must be added for the :hover selector to work on other elements than the a element.**</p>  </body>  </html> |

1. Navigation Bar Sample with dropdown
2. Form modeling