CSS

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What is CSS ?

CSS stands for "Cascading Style Sheets"

Cascading: refers to the procedure that determines which style will apply to a certain section, if you have more than one style rule.

Style: how you want a certain part of your page to look. You can set things like color, margins, font, etc for things like tables, paragraphs, and headings.

Sheets: the "sheets" are like templates, or a set of rules, for determining how the webpage will look.

CSS is a stylesheet language used to describe the presentation of a document written in HTML or XML.

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CSS

History

- CSS1 was the first edition introduced in 1996.
- CSS2 was published in 1998 and provides enhancement over CSS1.
- CSS2.1 was the last 2nd generation edition of CSS.
- CSS 3 is the latest edition. Several new functionalities have been provided through CSS3.

  Functions like rounded corners, backgroubnd decoration, box shadows, which are demonstrated in the subsequesnt sections, are introduced in this version.

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CSS

Advantages

- A web application will contains hundreds of web pages, which are created using HTML.
- Formatting these HTML pages will be a laborious process, as formatting elements need to be applied to each and every page.
- CSS saves lots of work as we can change the appearance and layout of all the web pages by editing just one single CSS file.

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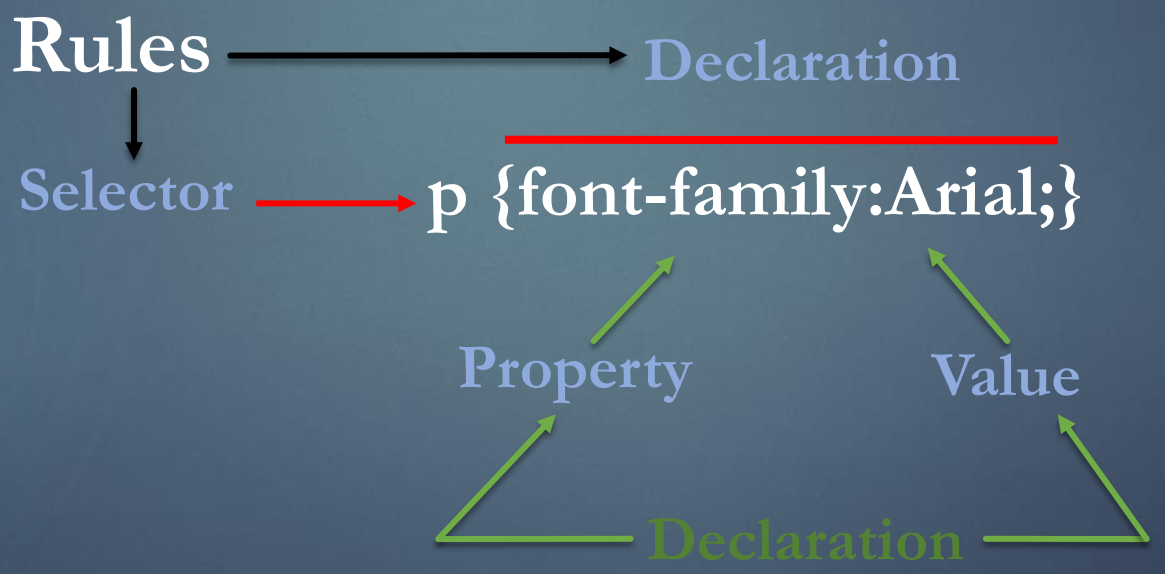
CSS Syntax Rules

Rule have two parts - Selector and declaration.

Selector: The HTML element you want to add style to.
<p> <h1> <table> etc

Declaration: The statement of style for that element. Made up of property and value.



CSS Style Example

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Selector - I want the text color of my paragraph to be red and the background color to be black.

```
<html>
<head>
<style> p {font-family:Arial; color: red;
background-color:black;} </style>
</head>
<body>
<p> <b> Welcome to Snapdeal Academy </b>
</p>
</body>
</html>
```

Welcome to Snapdeal Academy

Selectors

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CSS Selectors

- Selectors are at the heart of CSS.
- CSS allowed the matching of elements by type, class, and/or id.
- CSS2.1 added pseudo-elements, pseudo-classes, and combinators.
- With CSS3, we can target almost any element on the page with a wide range of selectors.

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Universal Selector

```
* {
 margin: 0;
 padding: 0;
}
```

- The star symbol will target every single element on the page.
- Used to zero out the margins and padding.
- It adds too much *weight* on the browser

Select by Id

```
#container {
    width: 960px;
    margin: auto;
}
```

- Prefixing the hash symbol to a selector allows us to target by id.
- Most common usage
- id selectors are rigid and don't allow for reuse.
- Can use a pseudo-class.

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Class Selector

```
.error {
  color: red;
}
```

- This is a class selector.
- The difference between ids and classes is that, with the latter, you can target multiple elements.
- Use classes when you want your styling to apply to a group of elements.

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Selector Grouping

- Can be grouped using a comma (,) separator.
- Any element that matches either of the selectors in the group:
- **td, th { : declarations }**
  - Similar to the logical OR operator,
  - but it's important to remember that each selector in a group is autonomous.
- **#foo td, th { : declarations }**
- #foo td { : declarations } th { : declarations }

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Attribute Selector

- **a[title] {**
- **color: green;**
- **}**

- Select the anchor tags that have a title attribute.

- **a[href="Welcome.html"] {**
- **color: green;**
- **}**

- ***** appear *somewhere* in the attribute's value.
- **^** for Beginning of the String
- **$** is used for end of the String

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Attribute selectors

Attribute selectors selects elements based upon the attributes present in the HTML Tags and their value.

```
IMG[src="small.gif"] {
  border: 1px solid #000;
 }
```

will work for

```
<img src="small.gif" />
```

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Descendent Selector

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

- The next most comment selector is the descendant selector.
- Also known as Compound selectors
- When you need to be more specific with your selectors, you use these.
- Example : To target the anchors which are within an unordered list

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Adjacent Selector

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

- This is referred to as an adjacent selector.
- It will select *only* the element that is immediately preceded by the former element.
- In this case, only the first paragraph after each ul will have red text.

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Child selectors

A child selector is used to select an element that is a direct child of another element (parent). Child selectors will not select all descendants, only direct children.

HTML

```
<div >
  <div class="abc">
    <P>
   Hello there!
  </div>
</div>
```

CSS

```
DIV.abc > P {
        font-weight:bold;
}
```

</p>

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General sibling selector

- Selector is a tilde character (~).
- Matches elements that are siblings of a given element.
- To match a p element if it's a sibling of an h2 element:
- **h2~p { : declarations }**
- <h2>Heading</h2>
- The selector above matches this paragraph.
- The selector above matches this paragraph.
- Here, both paragraphs match the sibling selector h2~p

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Inserting a StyleSheet

You can do in three different ways-

1. **External Style Sheet**

   Styles are specified in an external CSS file. you can change the looks of entire website by using single external style sheet.

   Eg.: <head> <link rel="stylesheet" type="text/css" href="ex1.css" /> </head>

2. **Internal Style Sheet**

   To Appy specific styles to a single HTML file inside the head section of an HTML page.

   Eg.: <style> p { **text-align**:left; **font-size**:24px; } </style>

3. **Inline Styles**

   Styles are specified inside an HTML tag/element.

   Eg.: Demo of Inline Style

Inserting a StyleSheet

Multiple Style Sheets – It can be referenced inside an HTML document.

The questions is, what styles will be applicable when there is more than one style specified?

All styles cascade into a new virtual style sheet by applying the following rules, where the higher number has the greater priority:

1. Browser default.
2. External Stylesheet.
3. Internal Stylesheet (styles defined in head section).
4. Inline Style (styles defined in an HTML element).

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Formatting with CSS Properties

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CSS Background

We can use CSS Background properties to define the background effects of an element.

The following properties can be used for background effects :

- background-color
  - The background-color property is used to specify the background color of the element.
- background-image
  - The background-image property is used to set an image as a background of an element.
- background-repeat
- background-attachment
  - used to specify if the background image is fixed or scroll with the rest of the page in browser window.
- background-position
  - used to define the initial position of the background image.
  - By default, the background image is placed on the top-left of the webpage.

Formatting with CSS Properties

CSS Background Image

You can use an image as the background for an element using background-image property.

Example-

```
body{
        background-image:url('java.png');
        }
```

By default, the image is repeated, both horizontally and vertically, so as to cover the entire body (or the element on which it is applied).

Formatting with CSS Properties

CSS Background Color

The **background-color** property is used to specify the background color of an element.

Example-

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

Similarly, we can specify the background for any element (wherever applicable).

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

Formatting with CSS Properties

CSS Background Position

If the background image disturbs the text, i.e. if the text cannot be read clearly due to the image in the background, we can set the position of the background image.

Example-

```
body {
        background-image:url(“SomeImage.jpg");
        background-repeat:no-repeat;
        background-position:right top;
        }
```

Formatting with CSS Properties

CSS Background Shorthand

You can also specify all the properties in a single property.
This property is known as shorthand property.

For specifying shorthand property, you just need to use **background**.

Example-

```
body {
        background:cyan url('SomeImage.jpg') no-repeat right top;
        }
```

Formatting with CSS Properties

Text Formatting

The following properties can be used for formatting text :

1. Text Color
2. Text Alignment
3. Text Decoration
4. Text Transformation
5. Text Indentation

Formatting with CSS Properties

Text Alignment

We can either align the text to the left, right, center or we can make it justified.

Example-

```
p { text-align:left;}
h1{text-align:center;}
```

Text Color

The color property is used to set the color of text.

Example-

```
body { color:blue;}
p1 {color:magenta;}
```

Formatting with CSS Properties

Text Decoration

You can use **text-decoration** property to set or remove decorations from text.

Example-

```
p {text-decoration:overline;}
p {text-decoration:line-through;}
p {text-decoration:underline;}
```

Text Transformation

You can use text-transform property to specify uppercase and lowercase letters of any text.

Example-

```
h1 {text-transform:uppercase;}
h2 {text-transform:lowercase;}
p {text-transform:capitalize;}
```

Formatting with CSS Properties

CSS Font

CSS font properties are used to define the font family, size, style and boldness of the text.
In CSS, there are two types of font family names:

generic family - a group of font families with a similar look (like "Serif" or "Monospace").
font family - a specific font family (like "Times New Roman" or "Arial").

Comments in CSS

/* comment */ - This is comment used in CSS.

Formatting with CSS Properties

CSS Font Family

The font-family property should hold several font names as a "fallback" system. If the browser does not support the first font, it tries the next font.
Example :
p { font-family:"Arial", Times, "Sans-serif";}

CSS Font Style

You can use the property font-style to specify mostly italic text. It has three values – Normal, Italic, Oblique (similar to italic).

Formatting with CSS Properties

CSS Font Size

You can use the **font-size** property to set the size of text. The font-size value can be absolute or it can be relative.

Example-

```
h1 {
    font-size: 30px;
}

p {
    font-size: 14px;
}
```

Formatting with CSS Properties

CSS Font Size with em (Relative Size)

You may face resizing problems, when you use older versions of browsers.
To avoid such problems, you can use set font size using em, instead of pixels.

The em size unit is a W3C recommendation.1 em is equal to the current font size.
The default text size is 16 px. So, the default size of 1 em is 16 px.

Example

```
h2 {
    font-size: 1.875em; /* 30px/16=1.875em */
}

p {
    font-size: 0.875em; /* 14px/16=0.875em */
}
```

CSS Units

- CSS has several different units for expressing a length.
- Many CSS properties take "length" values, such as width, margin, padding, font-size, border-width, etc.
- Length is a number followed by a length unit, such as 10px, 2em, etc.
- A whitespace cannot appear between the number and the unit. However, if the value is 0, the unit can be omitted.
- There are two types of length units:
  - absolute
  - relative.

Absolute Lengths

- The absolute length units are fixed and a length expressed in any of these will appear as exactly that size.

Unit	Description
cm	centimeters
mm	millimeters
in	inches (1in = 96px = 2.54cm)
px *	pixels (1px = 1/96th of 1in)
pt	points (1pt = 1/72 of 1in)
pc	picas (1pc = 12 pt)

- Pixels (px) are relative to the viewing device. For low-dpi devices, 1px is one device pixel (dot) of the display. For printers and high resolution screens 1px implies multiple device pixels.

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Relative Lengths

- Relative length units specify a length relative to another length property. Relative length units scales better between different rendering mediums.

Unit	Description
em	Relative to the font-size of the element (2em means 2 times the size of the current font)
ex	Relative to the x-height of the current font (rarely used)
ch	Relative to width of the "0" (zero)
rem	Relative to font-size of the root element
vw	Relative to 1% of the width of the viewport*
vh	Relative to 1% of the height of the viewport*
vmin	Relative to 1% of viewport's* smaller dimension
vmax	Relative to 1% of viewport's* larger dimension
%	Relative to the parent element

- Viewport = the browser window size. If the viewport is 50cm wide, 1vw = 0.5cm.

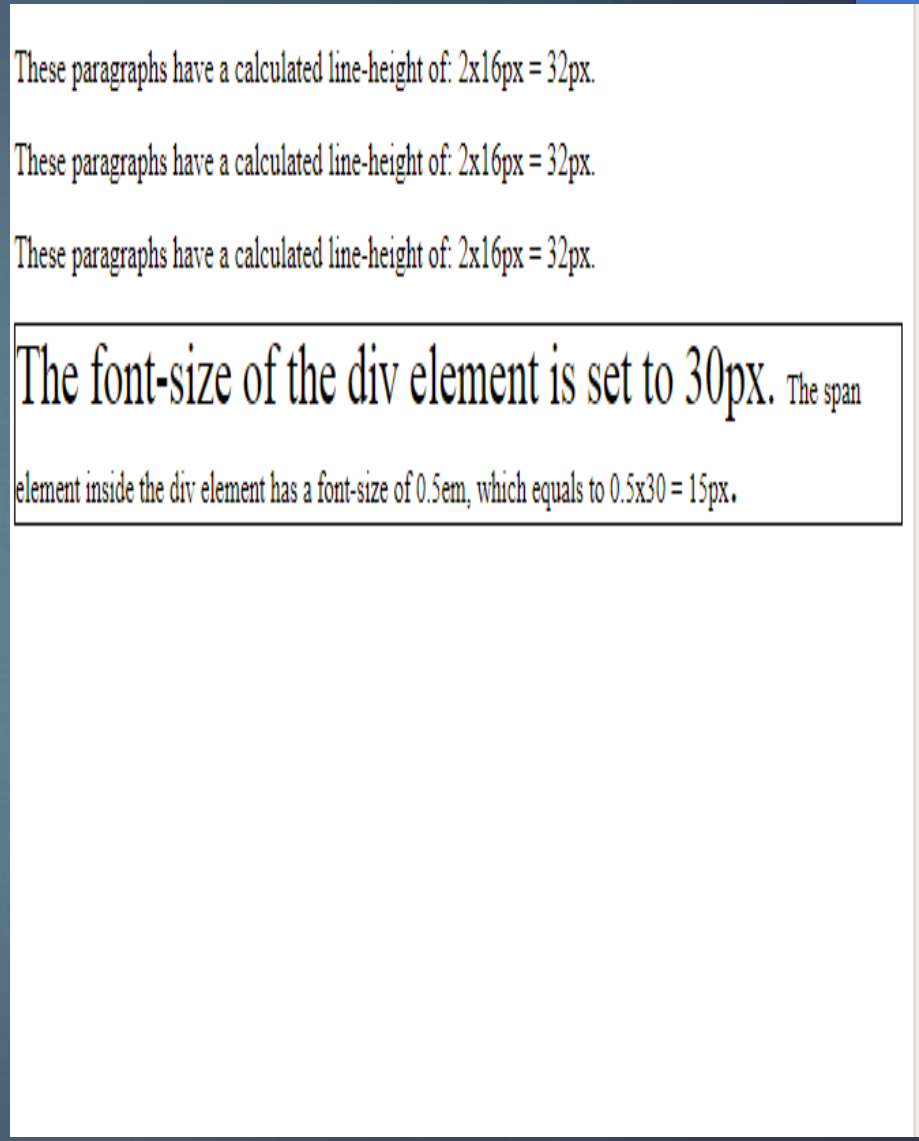
Example

```
<!DOCTYPE html>
<html>
<head>
<style>
p {
    font-size: 16px;
    line-height: 1em;
}

div {
    font-size: 30px;
    border: 1px solid black;
}

span {
    font-size: 0.5em;
}
</style>
</head>
<body>

<p>These paragraphs have a calculated line-height of: 2x16px = 32px.</p>
<p>These paragraphs have a calculated line-height of: 2x16px = 32px.</p>
<p>These paragraphs have a calculated line-height of: 2x16px = 32px.</p>
<div>The font-size of the div element is set to 30px. <span>The span
element inside the div element has a font-size of 0.5em, which equals to
0.5x30 = 15px</span>.</div>
```



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Formatting with CSS Properties

CSS Links

You can use CSS styles to style any link. Links can be styled in different ways by using any CSS property like color, font-family etc.

Links can be in one of the following states :

- **a: link** – Unvisited link
- **a: visited** – A link that the user has visited
- **a: hover** – A link over which the mouse pointer is moving
- **a: active** – A link, which has been just clicked

Links can be styled according to their states.

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CSS Links

```
a {
 font-weight: bold;
}
a:link {
  color: black;
}
a:visited {
 color: gray;
}
a:hover {
 text-decoration: none;
 color: white;
 background-color: navy;
}
a:active {
 color: aqua;
 background-color: navy;
}
```

Styling Links

link - before a visit

visited - after it has been visited

hover - when your mouse is over it but you have not clicked

active - you have clicked it and you have not yet seen the new page

Formatting with CSS Properties

CSS List

You can use CSS list properties for

- Setting different list item markers for ordered lists
- Setting different list item markers for unordered lists
- Set an image as the list item marker

Values-

- list-style-type
- list-style-image