What is CSS?

CSS stands for Cascading Style Sheets and it is the language used to style the visual presentation of web pages. CSS is the language that tells web browsers how to render the different parts of a web page.

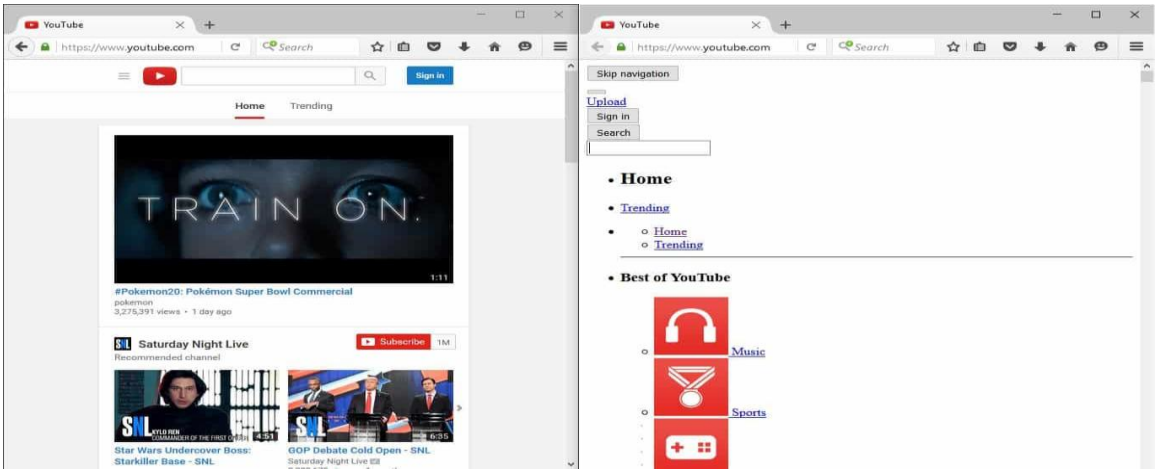


Figure1. YouTube with and without CSS.

CSS Advantages:

1. Easy maintenance

2. Avoid duplications and saves time.

3. Build pages for different environments: small screen, large screen and printers.

CSS Types

There are three ways of adding CSS rules to a web page:

- **Inline styles**

It means applying style locally; it is used to define rules that only apply to that specific element using style attribute (it **has the heights priority** if there is a conflict in property values).

Example.

```
<h1 style="color:red; padding:10px; text-decoration:underline;"> Example Heading
</h1>
```

- **Internal stylesheets**

Used to determine style for a single html page. An internal stylesheet is a block of CSS added to an HTML document head element. The style element is used between the opening and closing **head** tags, and all CSS declarations are added between the **style** tags.

Example

```
<head>
  <style>
    h1 {
      color: red;
      padding: 10px;
      text-decoration: underline;
      }
  </style>
</head>
<body>

  <h1>Example Heading</h1>

</body>
```

- **External stylesheets**

External stylesheets are documents containing nothing other than CSS statements. The rules defined in the document are linked to one or more HTML documents by using the **link** tag within the **head** element of the HTML document.

External CSS can be linked to any number of HTML documents. As a result, a single external stylesheet can be used to define the presentation of an entire website.

To use an external stylesheet:

1. Open notepad and create the CSS document.
2. Save your file with .css extension.
3. Link CSS file to the html file by using link tag.

Example

```
**********************************************

Save with a name ending in .css such as styles.css

**********************************************/

h1 {

   color: red;

   padding: 10px;

   text-decoration: underline;

   }
```

Now that we have an external stylesheet with some styles, we can link it to an HTML document using the link element.

```
<head>

<link rel="stylesheet" type="text/css" href="styles.css">

</head>

<body>

   <h1>Example Heading</h1>

</body>
```

When this HTML document is loaded the link tag will cause the styles in the file styles.css to be loaded into the web page.

CSS Syntax

CSS syntax includes selectors, properties, values, declarations, declaration blocks, rulesets, at-rules, and statements.

1. A ***selector*** is a code snippet used to identify the web page element or elements that are to be affected by the styles.
2. A ***property*** is the aspect of the element that is to be affected. For example, color, padding, margin, and background are some of the most commonly used CSS properties.
3. A ***value*** is used to define a *property*. For example, the property color might be given the value of red like this: color: red;.
4. The combination of a *property* and a *value* is called ***declaration***.
5. In many cases, multiple *declarations* are applied to a single *selector*. A ***declaration block*** is the term used to refer to all of the declarations applied to a single *selector*.
6. A single *selector* and the *declaration block* that follows it in combination are referred to as a ***ruleset***.

Example

Let's use a block of CSS to clarify what each of these items is.

```
h1 {
   color: red;
   font-size: 3em;
   text-decoration: underline;
   }
```

In this example, **h1** is the selector. The selector is followed by a declaration block that includes three declarations. Each declaration is separated from the next by a semicolon. The tabs and line breaks are optional but used by most developers to make the CSS code more human-readable.

By using **h1** as the selector, we are saying that every level 1 heading on the web page should follow the declarations contained in this ruleset.

The ruleset contains three declarations: ncolor:red; font-size: 3em; text-decoration: underline;

color, font-size, and text-decoration are all properties.

We applied the values red, 3em, and underline to the properties we used.

For the color property we can either use a color keyword or a color formula in Hex, RGB, or HSL format.

We applied the value of 3em to the property font-size. There are a wide range of size units we could have used including pixels, percentages, and more.

Finally, we added the value underline to the property text-decoration.

CSS Selector Types

A CSS selector is the part of a CSS rule set that actually selects the content you want to style.

1- **Element Type Selector**

This selector must style all HTML elements of the same name.

Example: a selector of <ul> would match all HTML unordered lists, or <ul> elements.

```
ul {

  list-style: none;

  border: solid 1px #ccc;

}
```

2- Class Selector

The class selector is the most useful of all CSS selectors. It's declared with a dot preceding a string of one or more characters. Just as is the case with an ID selector, this string of characters is defined by the developer. The class selector also matches all elements on the page that have their class attribute set to the same value as the class, minus the dot.

Can be applied to multiple elements using their class attribute.

Example

```
.box {

  padding: 20px;

  margin: 10px;

  color: rgb(200,155,190);  }
```

These styles will apply to the following HTML element:

```
<P class="box">Welcome to Web Develping</P>
```

You can add multiple classes to the same element , this is done by separating the classes in the HTML class attribute using spaces. Here's an **example:**

```
<p class="box box-more box-extended">Leen</p>
```

3- ID Selector

An ID selector is declared using a hash, or pound symbol (#) preceding a string of characters. This selector **matches any HTML element that has an ID attribute with the same value as that of the selector, but minus the hash symbol.**

Here's an example:

```
#container {

  font: 15px "Times" red;

  margin: 10px;}
```

This CSS uses an ID selector to match an HTML element such as:

```
<h1 id="container">Chapter1</h1>
```

CSS Grouping

Grouping in CSS is a technique used to reduce code redundancy and write clean, concise easy to follow code.

Example

```
p, #id_value, .class { {
    //Declarations
 }
```

Example

```
h1{   font-size: 10px;
     color: green; }
h2{font-size: 10px;
  color: green;}
 h3{font-size: 10px;
  color: green;}
```

Instead, you can shorten the code by grouping it

```
h1, h2, h3 {  font-size: 10px;
                        color: green;
}
```

CSS Applying specificity:

If there are two or more conflicting CSS rules that point to the same element, the browser follows some rules to determine which one is most specific and therefore wins out. It is a set of rules used by browsers in determining which of the developer-defined styles will be applied to a specific element.

1. **Inline styling** : has the heights priority

<h3 style='color: red'>Hello World</h3>

2. **Internal CSS or external CSS file, which one will have the heights priority????**

Rules that appear later in the code override earlier rules if both have the same specificity.

Example1

What will be the color of the words after rendering web page?

In HTML file:

```
<head>
<style>
h1 {
 color: Pink;
}
#h{
color: green;
}

.hclass{
 color: blue;
}
</style>
</head>
<Body>
<h1  id="h" > BAU </h1>
<h1  class="h1class" > University </h1>
<h1  style="color: red ;"> Jordan </h1>
</body></html>
```

Output:

BAU
University
Jordan

Example 2

- **From external CSS file which is called style.css:**

```
h1 {color: pink;}
```

- **In the HTML file:**

```
<head>

<link rel="stylesheet" type="text/css" href="style.css"/>

<style>
h1 {
 color: red;
}
#h{
 color: green;
}
.hclass{
 color: blue;
}
</style>
</head>

<Body>
<h1 id="h" > BAU </h1>
<h1 class="h1class" > University </h1>
<h1> Jordan </h1>

</body>
</html>
```

Output:

BAU
University
Jordan

Example 3

- **From external CSS file which is called style.css:**

```
h1 { color: pink;}
```

- **In the HTML file:**

```
<head>

<style>
h1 {
 color: red;
}
#h{
 color: green;
}

.hclass{
 color: blue;
}
</style>
```

Output:

BAU
University
Jordan

<link rel="stylesheet" type="text/css" href="style.css"/>

```
</head>

<Body>
<h1 id="h" > BAU </h1>
<h1 class="h1class" > University </h1>
<h1> Jordan </h1>
</body></html>
```

Note: The last code in the style will take effect, if they have the same priority.

Cascading Style Sheets (CSS)

CSS Background Properties

Property	Description	Values
background	Sets all the background properties in one declaration	*background-color* *background-image* *background-repeat*
background-color	Sets the background color of an element	*color-rgb* *color-hex* *color-name*
background-image	Sets the background image for an element	url**(URL of the image)** none
background-repeat	Sets if/how a background image will be repeated	repeat no-repeat

Example:

```
body {   background-image: url("z.jpg") , url("b.png");
         background-repeat: no-repeat, repeat;
       }
```

CSS Text Properties

Property	Description	Values
color	Sets the color of a text	*color*
direction	Sets the text direction	ltr rtl
letter-spacing	Increase or decrease the space between characters	normal *length*

text-align	Aligns the text in an element	left right center justify
text-decoration	Adds decoration to text	none underline overline line-through blink (Netscape)
text-transform	Controls the letters in an element	none capitalize uppercase lowercase
word-spacing	Increase or decrease the space between words	normal *length*
text-shadow	Adds shadow to the text of an element.	*

Note that:

Length can be expressed in one of the following units of length:

`px, pt, in, cm, mm and other units.`

*text-shadow Property

The **text-shadow property** adds shadow to the text of an element.

none	Default value. No shadow

Syntax

text-shadow: h-shadow v-shadow blur-radius color;

or text-shadow: none;

Note that:

- You can add **more than** one shadow to the text.
- To add more than one shadow to the text, **add a comma-separated list** of shadows.

Example1: h1 { text-shadow: 2px 2px #ff0000; }

Example 2: h1 { text-shadow: 2px 10px #Ffcc80,10px 20px #dd88ee; }

Property Values

Value	Description
h-shadow	**Required.** The position of the horizontal shadow. Negative values are allowed
v-shadow	**Required.** The position of the vertical shadow. Negative values are allowed
blur-radius	Optional. The blur radius. Default value is 0
color	Optional. The color of the shadow.
none	Default value. No shadow

CSS Font Properties

CSS font properties define the font family, boldness, size and the style of a text.

Property	Description	Values
font	Sets all the font properties in one declaration	*font-style* *font-weight* *font-size* *font-family*
font-style	Specifies the font style for text	normal italic
font-family	Specifies the font family for text	*family-name*
font-size	Specifies the font size of text length Sets the font-size to a fixed size in px, cm, etc.	xx-small x-small small medium large x-large xx-large *length(px,cm,etc)*
font-weight	Sets how thick or thin the characters in text should be displayed.	Normal(default) bold bolder lighter 100 200 300 400 500 600 700 800 900

➢ Font-family Property

Example:
p { font-family: Arial;}
td { font-family : "Bookman Old Style";}

More than one font family is specified in a comma-separated list:

p{ font-family: "Times New Roman"**,** Times**,** serif }

➢ Font-style Property

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

Values:

- **normal** - The text is shown normally
- **italic** - The text is shown in italics

➢ Font-size Property

- Sets the text to a specified size.

If you do not specify a font size, the default size for normal text, is 16px.

Possible values for the font-size Property

medium	Sets the font-size to a medium size. This is default
xx-small	Sets the font-size to an xx-small size
x-small	Sets the font-size to an extra small size
small	Sets the font-size to a small size
large	Sets the font-size to a large size
x-large	Sets the font-size to an extra-large size

The Font Weight Property Values

Value	Description
normal	Defines normal characters. This is default
bold	Defines thick characters
bolder	Defines thicker characters
lighter	Defines lighter characters
100 **200** **300** **400** **500** **600** **700** **800** **900**	Defines from thin to thick characters. **- 400 is the same as normal** **- 700 is the same as bold**

CSS Border Properties

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

Property	Description	Values
border	Sets all the border properties in one declaration	*border-width* *border-style* *border-color*
border-width	Sets the width of the four borders	thin medium thick *length*
border-style	Sets the style of the four borders	none hidden dotted dashed solid double groove
border-color	Sets the color of the four borders	*color_name* *hex_number* *rgb_number*

border-bottom	Sets all the bottom border properties in one declaration	*border-bottom-width* *border-bottom-style* *border-bottom-color*
border-bottom-color	Sets the color of the bottom border	*border-color*
border-bottom-style	Sets the style of the bottom border	*border-style*
border-bottom-width	Sets the width of the bottom border	*border-width*
border-left	Sets all the left border properties in one declaration	*border-left-width* *border-left-style* *border-left-color*
border-left-color	Sets the color of the left border	*border-color*
border-left-style	Sets the style of the left border	*border-style*
border-left-width	Sets the width of the left border	*border-width*
border-right	Sets all the right border properties in one declaration	*border-right-width* *border-right-style* *border-right-color*
border-right-color	Sets the color of the right border	*border-color*
border-right-style	Sets the style of the right border	*border-style*
border-right-width	Sets the width of the right border	*border-width*
border-top	Sets all the top border properties in one declaration	*border-top-width* *border-top-style* *border-top-color*
border-top-color	Sets the color of the top border	*border-color*
border-top-style	Sets the style of the top border	*border-style*
border-top-width	Sets the width of the top border	*border-width*

CSS Padding Properties

The Padding properties define the space between the element border and the element content. **Negative values are not allowed.**

The top, right, bottom, and left padding can be changed independently using separate properties. A **shorthand padding property** is also created to control multiple sides at once.

Property	Description	Values
padding	A shorthand property for setting all the padding properties in one declaration	*padding-top* *padding-right* *padding-bottom* *padding-left*
padding-bottom	Sets the bottom padding of an element	*length*
padding-left	Sets the left padding of an element	*length*
padding-right	Sets the right padding of an element	*length*
padding-top	Sets the top padding of an element	*length*

Note:

- **padding:25px 50px 75px 100px**
  - top padding is 25px
  - right padding is 50px
  - bottom padding is 75px
  - left padding is 100px
- **padding:25px**
  - all four paddings are 25px

CSS Margin Properties

The Margin properties define the space around elements. It is possible to use negative values to overlap content.

The top, right, bottom, and left margin can be changed independently using separate properties. A shorthand margin property can also be used to change all of the margins at once.

Property	Description	Values
margin	A shorthand property for setting the margin properties in one declaration	*margin-top* *margin-right* *margin-bottom* *margin-left*
margin-bottom	Sets the bottom margin of an element	auto *length*
margin-left	Sets the left margin of an element	auto *length*
margin-right	Sets the right margin of an element	auto *length*
margin-top	Sets the top margin of an element	auto *length*

Example

- **P**{ margin**:25px 50px 75px 100px ;** }

- top margin is 25px
- right margin is 50px
- bottom margin is 75px
- left margin is 100px

- **p**{ margin**:25px;** }

- all four margin are 25px

CSS Setting height and width

The height and width properties are used to set the height and width of an element.

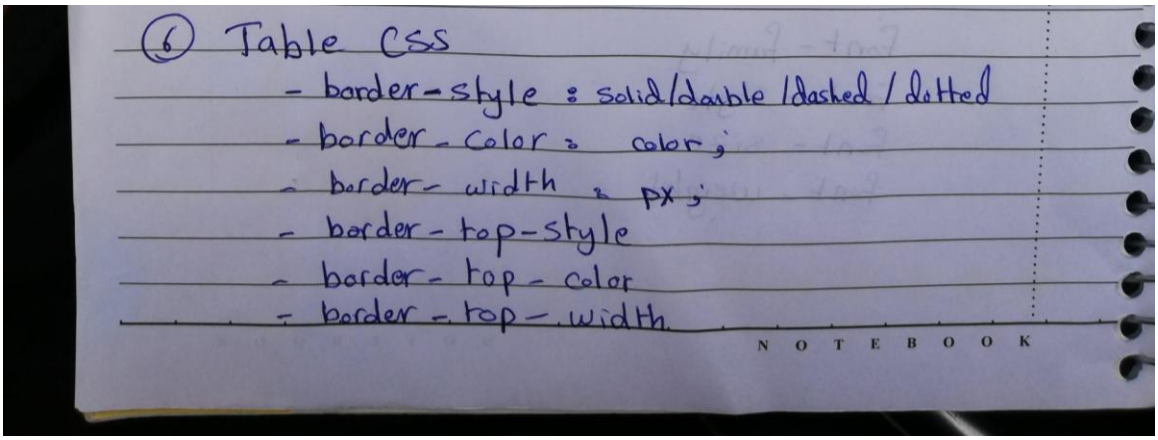
Values

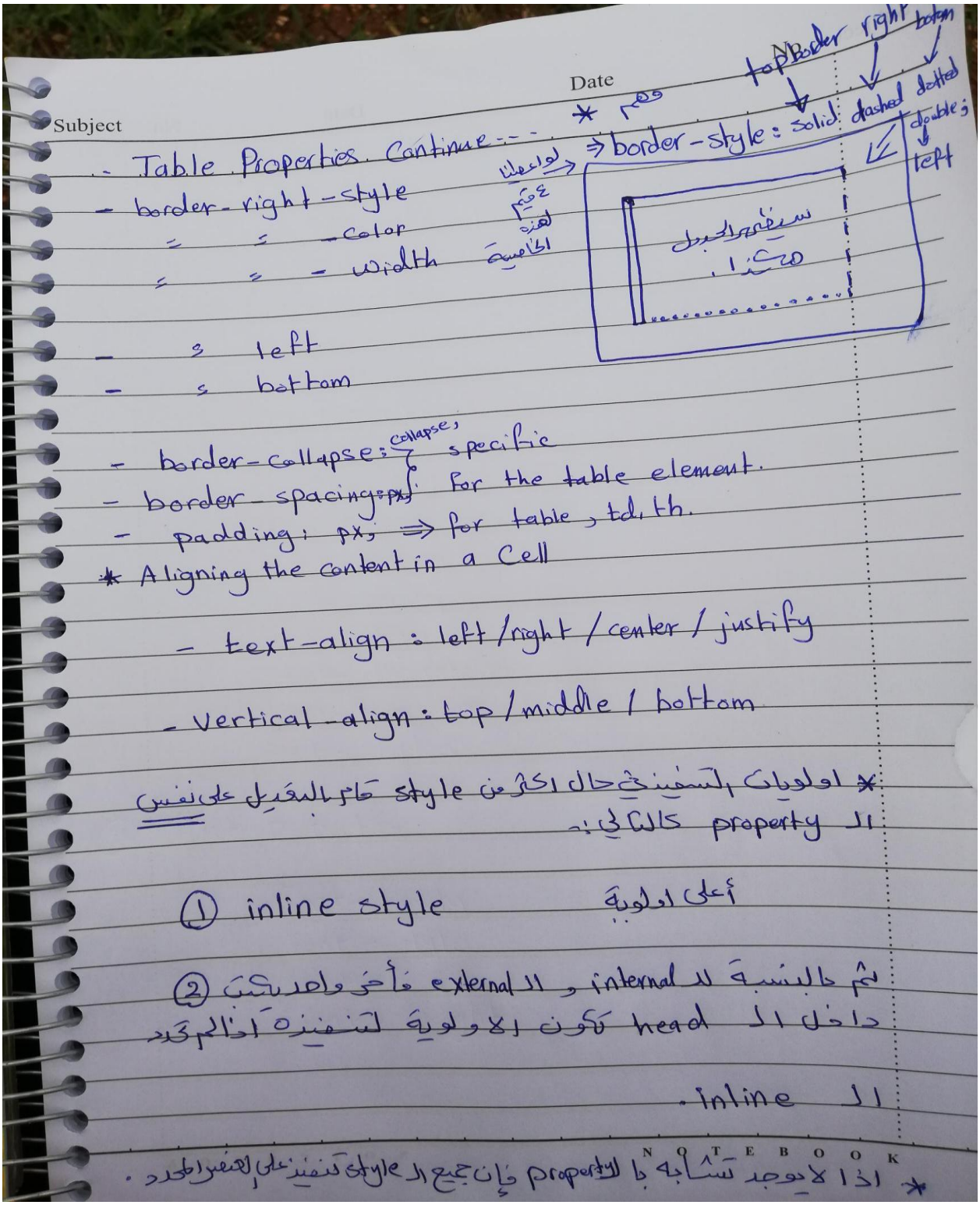
auto	This is default. The browser calculates the height and width
length	Defines the height/width in px, cm etc.
%	Defines the height/width in percent of the containing block

Example

```
img {
 height: 200px;
 width: 50%;
}
```

Required Table CSS




Subject

Date

- Table Properties Continue ...

- border-right-style
  - = = -color
  - = = -width

- = left
- = bottom

- border-collapse: collapse; / specific
- border-spacing: px; / For the table element.
- padding: px; ⇒ for table, td, th.

* Aligning the content in a Cell

- text-align: left / right / center / justify
- vertical-align: top / middle / bottom

* أولويات التنفيذ حال اكثر من style تأثر بالعنصر على نفس الـ property كالتالي:

① inline style أعلى أولوية

② ثم بالنسبة لـ internal, external فأخر واحدة بالكود داخل الـ head تكون الأولوية لتنفيذ أوامرها.

الـ inline.

* إذا لا يوجد تسمية بالـ property فإن جميع الـ style تنفذ على العنصر المحدد.