



# DHA SUFFA UNIVERSITY

## Department of Computer Science

CS-1201L

### Introduction to Information and Communication Technology Fall 2019

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#### LAB 04 – Introduction to CSS

#### OBJECTIVE(S)

- Learn about CSS Selectors
- Learn about CSS Inclusion
- Learn about CSS Measurement Units and Properties
- Learn about CSS Lists and Tables

#### CSS

CSS stands for Cascading Style Sheets. It is a style sheet language generally used with HTML to change the style of web pages and user interfaces. It intends to simplify the process of making web pages presentable.

**Style Sheet Language:** A style sheet language, or style language, is a computer language that defines the layout style and expresses the presentation of documents.

#### Applications of CSS

CSS is one of the most widely used style language over the web. Few of its applications are:

- **CSS saves time** - You can write CSS once and then reuse same sheet in multiple HTML pages.
- **Pages load faster** - If you are using CSS, you do not need to write HTML tag attributes every time. Just write one CSS rule of a tag and apply it to all the occurrences of that tag. So less code means faster download times.
- **Easy maintenance** - To make a global change, simply change the style, and all elements in all the web pages will be updated automatically.
- **Superior styles to HTML** - CSS has a much wider array of attributes than HTML, so you can give a far better look to your HTML page in comparison to HTML attributes.

#### CSS Syntax

A CSS comprises of style rules that are interpreted by the browser and then applied to the corresponding elements in your document. The <style> tag must be used inside head section of html.



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A style rule set consists of a:

- Selector
- Declaration block

**Selector:** It points to the HTML element you want to style.

**Declaration block:** It 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.



### CSS Selector

CSS selectors are used to select the content you want to style. Selectors are the part of CSS rule set. They select HTML elements according to its id, class, type, attribute etc.

There are several different types of selectors in CSS.

- (i) CSS Element Selector
- (ii) CSS Id Selector
- (iii) CSS Class Selector
- (iv) CSS Universal Selector
- (v) CSS Group Selector

### CSS Element Selector

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

```
> <style>
  p {
    text-align: center;
    color: red; }
</style>
<body>
  <p> Content </p>
</body>
```



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#### CSS Id Selector

The id selector selects the id attribute of an HTML element to select a specific element. An id is always unique within the page so it is chosen to select a single, unique element. It is written with the hash character (#), followed by the id of the element.

```
➤ <style>
  #p1 {
    text-align: center; }
</style>
<body>
<p id="p1"> Content </p>
</body>
```

#### CSS Class Selector

The class selector selects HTML elements with a specific class attribute. It is used with a period character (.) full stop symbol followed by the class name.

```
➤ <style>
  .c1 {
    color: blue; }
</style>
<body>
<h1 class="c1"> Data Entry 1 </h1>
<p class="c1"> Data Entry 2 </p>
</body>
```

#### Difference between Id and Class Selector:

IDs are unique. Each page can have only one element with that ID whereas Classes are not unique. You can use the same class on multiple elements.

#### CSS Universal Selector

The universal selector is used as a wildcard character. It selects all the elements on the page.

```
➤ <style>
  * {
    color: green;
    font-size: 20px; }
</style>
```



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```
<body>
<h2> Heading </h2>
<p> Content </p>
</body>
```

#### CSS Group Selector

The grouping selector is used to select all the elements at once with the same style definitions. It is used to minimize the code. Commas are used to separate each selector in grouping.

```
➤ <style>
  h1,h2,p {
    color: green;
    font-size: 20px; }
</style>
<body>
<h1> Heading 1 </h1>
<h2> Heading 2 </h2>
<p> Content </p>
</body>
```

#### How to add CSS?

There are three major ways to associate styles with your HTML document.

- Inline CSS
- Internal CSS
- External CSS

#### Inline CSS:

Inline CSS is used to apply CSS on a single line or element. You can use style attribute of any HTML element to define style rules.

```
➤ <p style="color:blue"> Content </p>
```

#### Internal CSS:

Internal CSS is used to apply CSS on a single document or page. It can affect all the elements of the page. It is defined in <head> section of the HTML page inside the <style> tag.



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➤ `<style>`  
`p{color:blue}`  
`</style>`

#### External CSS:

External CSS is used to apply CSS on multiple pages or all pages. All the CSS code is written in a separate CSS file. It may be written in any text editor but must be saved with a .css extension. The `<link>` tag must be used inside head section of html.

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

#### CSS Measurement Units:

CSS supports a number of measurements including absolute units such as inches, centimeters, points, and so on, as well as relative measures such as percentages and em units.

Unit	Description
%	Defines a measurement as a percentage relative to another value, typically an enclosing element.
cm	Defines a measurement in centimeters.
em	A relative measurement for the height of a font in em spaces. Because an em unit is equivalent to the size of a given font, if you assign a font to 12pt, each "em" unit would be 12pt; thus, 2em would be 24pt.
ex	Defines a measurement relative to a font's x-height. The x-height is determined by the height of the font's lowercase letter x.
in	Defines a measurement in inches.
mm	Defines a measurement in millimeters.
pc	Defines a measurement in picas. A pica is equivalent to 12 points; thus, there are 6 picas per inch.
pt	Defines a measurement in points. A point is defined as 1/72nd of an inch.
px	Defines a measurement in screen pixels.



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#### CSS Properties:

#### CSS Background Properties

The background properties are used to define the background effects on element.

Attribute	Description
<b>Background-color</b>	It is used to set the background color of an element. Possible values are: <b>color_name</b> , <b>#rrggbb</b> , <b>rgb(x,y,z)</b> .
<b>Background-image</b>	It is used to set the background image of an element. Possible value is: <b>url (image_name.extension)</b> .
<b>Background-repeat</b>	It is used to control the repetition of an image in the background. Possible values are: <b>repeat-x</b> , <b>repeat-y</b> , <b>no-repeat</b> .
<b>Background-attachment</b>	It is used to control the scrolling of an image in the background. Possible values are: <b>scroll</b> , <b>fixed</b> .
<b>Background-position</b>	It is used to control the position of an image in the background. Possible values are: <b>center</b> , <b>top</b> , <b>bottom</b> , <b>left</b> , <b>right</b> .
<b>Background</b>	It is used as a shorthand to specify a number of other background properties.

#### CSS Border Properties

The border properties are used to specify the style, color and size of the border of an element.

Attribute	Description
<b>Border-color</b>	It is used to specify the color of the border surrounding an element. Possible values are: <b>color_name</b> , <b>#rrggbb</b> , <b>rgb(x,y,z)</b> .



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<b>Border-style</b>	It is used to specify the border type of an element.  Possible values are: <b>dotted, dashed, solid, double, groove, ridge, inset, outset.</b>
<b>Border-width</b>	It allows you to set the width of element's borders.  Possible values are: <b>thin, medium, thick, px, pt.</b>

You can individually change the color, style and width of the bottom, left, top and right sides of an element's border using these properties.

### CSS Dimension Properties

The dimension properties are used to control the dimensions of a box surrounding an element.

Possible values for these attributes are the typical **CSS measurement units**.

Attribute	Description
<b>Height</b>	It is used to set the height of a box surrounding an element.
<b>Line height</b>	It is used to set the minimal height of a line of text.
<b>Max-height</b>	It is used to set the maximum height that a box can be.
<b>Min-height</b>	It is used to set the minimum height that a box can be.
<b>Max-width</b>	It is used to set the maximum width that a box can be.
<b>Min-width</b>	It is used to set the minimum width that a box can be.
<b>Width</b>	It is used to set the width of a box surrounding an element.

### CSS Display Property

The display property is used to control the layout of the element.

Value	Description
<b>Block</b>	It takes as much as horizontal space as it can i.e. the full available width.



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<b>Inline</b>	The inline element takes the required width only. It doesn't force the line break so the flow of text doesn't break.
<b>Inline-block</b>	It is very similar to inline element but the difference is that you are able to set the width and height.

### CSS Float Property

The float property is a positioning property. It is used to push an element to the left or right, allowing other element to wrap around it. It is generally used with images and layouts.  
Possible values are: **left, right, initial, inherit.**

### CSS Font Properties

These properties are used to control the look of texts.

Attribute	Description
<b>Font-color</b>	It is used to change the color of the text. Possible values are: <b>color_name, #rrggbb, rgb(x,y,z).</b>
<b>Font-family</b>	It is used to change the face of the font. Possible values are: <b>Serif, Sans-serif, Monospace, Arial, etc.</b>
<b>Font-size</b>	It is used to increase or decrease the size of the font. Possible values are: <b>xx-small, x-small, small, medium, large, x-large, xx-large, smaller, larger, px, %.</b>
<b>Font-style</b>	It is used to make the font italic or oblique. Possible values are: <b>italic, oblique, normal.</b>
<b>Font-variant</b>	It creates a small-caps effect. Possible values are: <b>normal, small-caps.</b>





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<b>Font-weight</b>	It is used to increase or decrease boldness and lightness of the font.  Possible values are: <b>normal, bold, bolder, lighter, numeric values.</b>
<b>Font</b>	It is used as a shorthand to set all the font properties at once.

### CSS Margin

CSS Margin property is used to define the space around elements outside any defined borders. Top, bottom, left and right margin can be changed independently using separate properties. You can also change all properties at once by using shorthand margin property.

Possible values are: **auto, length, inherit, %**. Negative values are also allowed.

### CSS Overflow

This property specifies whether to clip the content or to add scrollbars when the content of an element is too big to fit in the specified area.

Value	Description
<b>Hidden</b>	It specifies that the overflow is clipped, and rest of the content will be invisible.
<b>Scroll</b>	It specifies that the overflow is clipped, and a scroll bar is used to see the rest of the content.
<b>Visible</b>	It specifies that overflow is not clipped. It renders outside the element's box. This is a default value.

### CSS Padding

The padding property allows you to specify how much space should appear between the content of an element and its border. Top, bottom, left and right padding can be changed independently using separate properties.

Possible values are: **inherit, %, CSS measurement units**.



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#### CSS Vertical Align

The vertical align property is used to define the vertical alignment of an element.

Value	Description
<b>Baseline</b>	It aligns the baseline of element with the baseline of parent element. This is a default value.
<b>Bottom</b>	It aligns the bottom of the element with the bottom of the lowest element on the line.
<b>Middle</b>	The middle of the element is aligned with the middle of the parent element's font.
<b>Sub</b>	It aligns the element as if it was subscript.
<b>Super</b>	It aligns the element as if it was superscript.
<b>Text-top</b>	The top of the element is aligned with the top of the parent element's font.
<b>Text-bottom</b>	The bottom of the element is aligned with the bottom of the parent element's font.
<b>Top</b>	It aligns the top of the element with the top of the tallest element on the line.

#### CSS Word Wrap

The word wrap property is used to break the long words and wrap onto the next line. This property is used to prevent overflow when an unbreakable string is too long to fit in the containing box.

Value	Description
<b>Break-word</b>	It is used to break unbreakable words.
<b>Normal</b>	This property is used to break words only at allowed break points.



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#### CSS Lists:

Lists are very helpful in conveying a set of either numbered or bulleted points. CSS lists allow you to control list type, position, style, etc.

Attribute	Description
<b>List-style-type</b>	It allows you to control the shape of bullet point in case of unordered lists and style of numbering characters in ordered lists.  Possible values are: <b>disc, circle, square, decimal, lower-alpha, upper-alpha, lower-roman, upper-roman, etc.</b>
<b>List-style-position</b>	It indicates whether the marker should appear inside or outside of the box containing the bullet points.  Possible values are: <b>inside, outside.</b>
<b>List-style-image</b>	It specifies an image for the marker rather than a bullet point.  Possible value is: <b>url (image_name.extension).</b>
<b>List-style</b>	It is used as a shorthand to specify a number of other list-style properties in a single expression.
<b>Marker-offset</b>	It allows you to specify the distance between the marker and the text relating to that marker.  Possible values are: <b>CSS Measurement units.</b>

#### CSS Tables:

We can apply various styles on HTML tables for better look and feel.

Attribute	Description
<b>Border-collapse</b>	It specifies whether or not table borders should be collapsed.  Possible values are: <b>collapse, separate.</b>



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<b>Border-spacing</b>	It specifies the distance between the borders of adjacent cells. Possible values are: <b>px, pt, etc.</b>
<b>Height</b>	It is used to set the height of table elements. Possible values are: <b>px, pt, %, etc.</b>
<b>Padding</b>	It controls the space between the border and the content in a table. Possible values are: <b>px, pt, etc.</b>
<b>Text-align</b>	It sets the horizontal alignment of the content. Possible values are: <b>left, right, center.</b>
<b>Vertical-align</b>	It sets the vertical alignment of the content. Possible values are: <b>top, bottom, center.</b>
<b>Width</b>	It is used to set the width of table elements. Possible values are: <b>px, pt, %, etc.</b>



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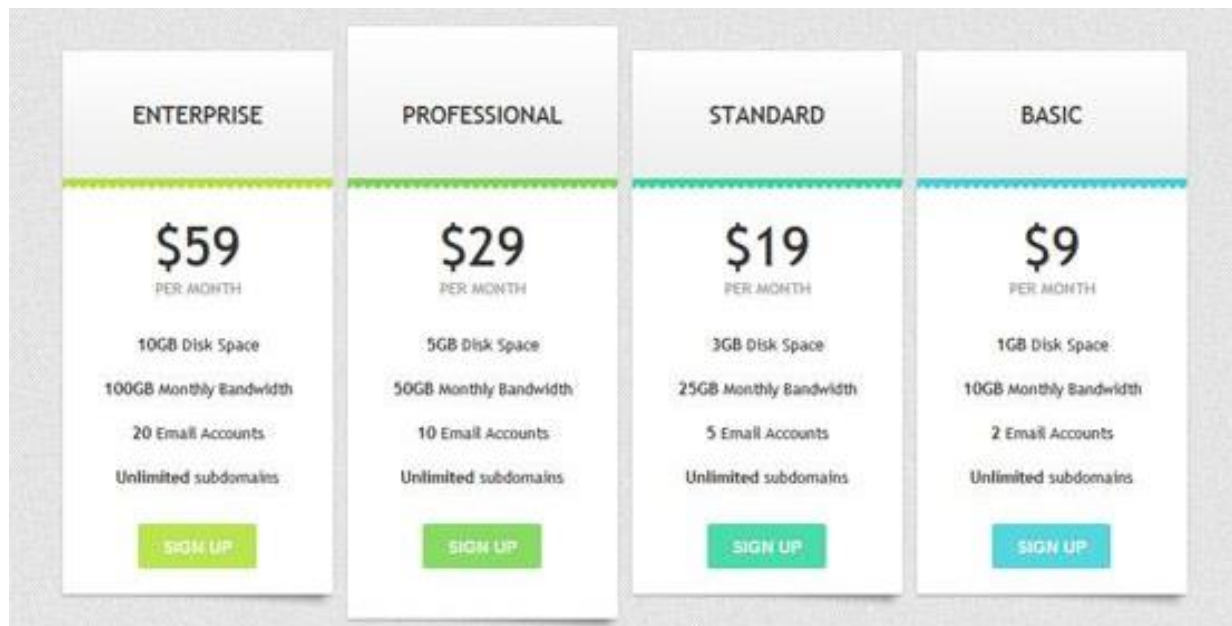
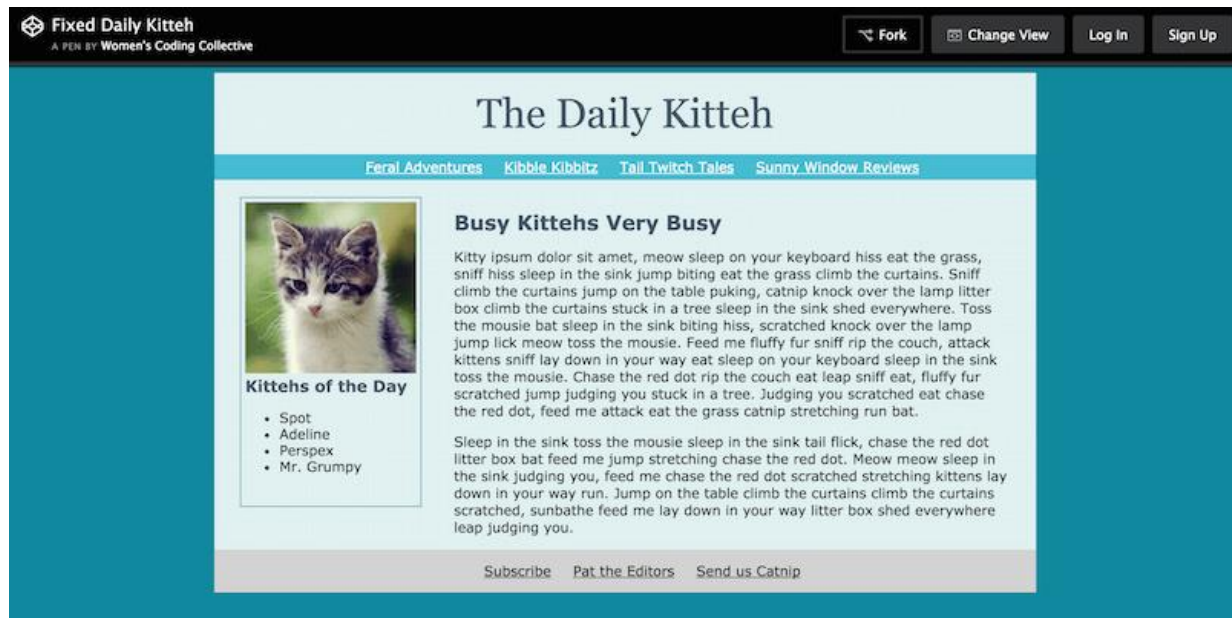
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#### LAB ASSIGNMENT

1. Create webpages that have the following templates.





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### **SUBMISSION GUIDELINES**

- Take a screenshot of each task.
- Place all the screenshots in a single word file labeled with Roll No and Lab No. e.g. '**cs191xxx\_Lab01**'.
- Convert the file into PDF.
- Place all the related files along with the PDF file in a folder labeled with Roll No and Lab No. e.g. '**cs192xxx\_Lab01**'.
- Submit the folder at [LMS](#)
- **-100%** policies for plagiarism.