What is CSS?

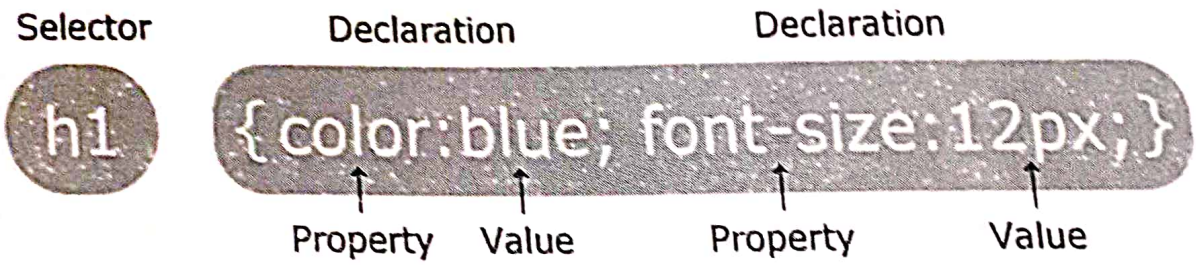
- CSS stands for Cascading Style Sheets
- Styles define how to display HTML elements
- External Style Sheets can save a lot of work
- External Style Sheets are stored in CSS files

Importance of CSS

- CSS defines HOW HTML elements are to be displayed.
- Styles are normally saved in external .css files. External style sheets enable you to change the appearance and layout of all the pages in a Web site, just by editing one single file.

CSS Syntax

- A CSS rule has two main parts: a selector, and one or more declarations:



- The selector is normally the HTML element you want to style.
- Each declaration consists of a property and a value.
- The property is the style attribute you want to change. Each property has a value.

What is the difference between class and id?

The id Selector

- The id selector is used to specify a style for a single, unique element.
- The id selector uses the id attribute of the HTML element, and is defined with a "#".
- The style rule below will be applied to the element with id="para1":

```
#para1
{ text-alian:center: color:red: }
```

The class Selector

- The class selector is used to specify a style for a group of elements. Unlike the id selector, the class selector is most often used on several elements.
- This allows you to set a particular style for many HTML elements with the same class.
- The class selector uses the HTML class attribute, and is defined with a "."
- In the example below, all HTML elements with class="center" will be center-aligned:

```
.center {text-align:center;}
```

- We can use more than one class in a single element

```
<a class="Center bold italic">
```

Explain different ways to write the CSS. / Explain CSS with all types. / Enlist and explain methods of using CSS in web page.

- There are three ways of inserting a style sheet:
  - External style sheet
  - Internal/Embedded style sheet
  - Inline style

1. External Style Sheet

- When using CSS it is preferable to keep the CSS separate from your HTML.
- Placing CSS in a separate file allows the web designer to completely differentiate between content (HTML) and design (CSS).
- External CSS is a file that contains only CSS code and is saved with a ".css" file extension.
- This CSS file is then referenced in your HTML using the <link> instead of <style>.

File Creation

- Open up notepad.exe, or any other plain text editor and type the following CSS code.

```
body{ background-color: gray;} p { color: blue; }h3{ color: white; }
```

- Save the file as a CSS (.css) file.
- Name the file "test.css" (without the quotes). Now create a new HTML file and fill it with the following code.

```
<html><head>
<link rel="stylesheet" type="text/css" href="test.css" /></head>
<body>
<h3> A White Header </h3>
<p> This paragraph has a blue font.
The background color of this page is gray because we changed it with CSS! </p>
</body></html>
```

Why Use External CSS?

- It keeps your website design and content separate.

- It's much easier to reuse your CSS code if you have it in a separate file. Instead of typing the same CSS code on every web page you have, simply have many pages refer to a single CSS file with the "link" tag.
- You can make drastic changes to your web pages with just a few changes in a single CSS file.

2. Internal/Embedded CSS

- This type of CSS is only for Single Page.
- When using Internal CSS, we must add a new tag, <style>, inside the <head> tag. The HTML code below contains an example of <style>'s usage.

```
<html><head>
<style type="text/css"></style>
</head><body>
<p>Your page's content!</p></body>
</html>
```

Creating Internal CSS Code

- Below is an example of simple CSS code.

```
<html><head>
<style type="text/css">
p {color: white; }
body {background-color: black; }
</style></head><body>
<p>White text on a black background!</p></body>
</html>
```

3. Inline CSS

- It is possible to place CSS right in your HTML code, and this method of CSS usage is referred to as inline css.
- Inline CSS has the highest priority out of external, internal, and inline CSS.
- This means that you can override styles that are defined in external or internal by using inline CSS.
- If you want to add a style inside an HTML element all you have to do is specify the desired CSS properties with the style HTML attribute.

```
<html><head>
<link rel="stylesheet" type="text/css" href="test.css" /></head>
<body>
<p style="background: blue; color: white;">A new background andfont color wit
inline CSS</p></body>
</html>
```

Explain CSS Background with all its attributes

- CSS background properties are used to define the background effects of an element.

1. CSS Background Color

- The background-color property specifies the background color of an element.

- The background color of a page is defined in the body selector:
- Below is example of CSS backgrounds

```
body {background-color:#b0c4de;}
```

2. CSS Background Image

- The background-image property specifies an image to use as the background of an element.

```
body {background-image:url('paper.gif');}
```

3. Background Image Repeat

- You can have a background image repeat vertically (y-axis), horizontally (x-axis), in both directions, or in neither direction.

```
p {background-image: url(smallPic.jpg); background-repeat: repeat; }
h4 {background-image: url(smallPic.jpg); background-repeat: repeat-y; }
ol {background-image: url(smallPic.jpg); background-repeat: repeat-x; }
ul {background-image: url(smallPic.jpg);background-repeat: no-repeat;    }
```

4. CSS Fixed Background Image

- The background-attachment property sets whether a background image is fixed or scrolls with the rest of the page.

```
textarea.noScroll { background-image: url(smallPic.jpg); background-attachment: fixed;}
textarea {
background-image: url(smallPic.jpg);
background-attachment: scroll;    }
```

5. CSS Background Image Positioning

- The background-position property sets the starting position of a background image.

```
p {background-image: url(smallPic.jpg); background-position: 20px 10px;}
h4 {background-image: url(smallPic.jpg), background-position: 30% 30%;}
ol {background-image: url(smallPic.jpg); background-position: top center;}
```

Explain CSS Font with all its attributes

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

1. CSS Font Color

- Set the text-color for different elements:

```
h4 { color: red; }
h5 { color: #90J0A1; }
h6 { color: rgb(0, 220, 98); }
```

2. CSS Font Family

- The font family of a text is set with the font-family property.

```
h4 { font-family: sans-serif; }h5 { font-family: serif; }
h6 { font-family: arial; }
```

3. **CSS Font Size**
   - The font-size property sets the size of the text.

```
p { font-size: 120%; } ol{ font-size: 10px; } ul{ font-size: x-large; }
```

4. **CSS Font Style**
   - The font-style property is mostly used to specify italic text.
   - This property has three values:
     - normal - The text is shown normally
     - italic - The text is shown in italics
     - oblique - The text is "leaning" (oblique is very similar to italic, but less supported)

```
p { font-style: italic; }h4{ font-style: oblique; }
```

5. **CSS Font Weight**
   - The font-weight property sets how thick or thin characters in text should be displayed.

```
p { font-weight: 100; } ul{ font-weight: bolder; }
```

6. **CSS Font Variant**
   - The font-variant property specifies whether or not a text should be displayed in a small-caps font.

```
p { font-variant: small-caps; }}
```

Explain CSS Text with all its attributes.

- While CSS Font covers most of the traditional ways to format your text, CSS Text allows you to control the spacing, decoration, and alignment of your text.

1. **Text Decoration**
   - The text-decoration property is used to set or remove decorations from text.
   - The text-decoration property is mostly used to remove underlines from links for design purposes.

```
h4{ text-decoration: line-through; }
h5{ text-decoration: overline; }
h6{ text-decoration: underline; }
a { text-decoration: none; }
```

2. **Text Indent**
   - The text-indentation property is used to specify the indentation of the first line of a text.

```
p { text-indent: 20px; } h5 { text-indent: 30%; }
```

3. **Text Align**
   - The text-align property is used to set the horizontal alignment of a text.

```
p { text-align: right; }
h5{ text-align: justify; }
```

4. **Text Transform**
   - The text-transform property is used to specify uppercase and lowercase letters in a text.

p { text-transform: capitalize; } h5{ text-transform: uppercase; }

5. CSS White Space

- The white-space attribute allows you to prevent text from wrapping until you place a break
 into your text.

p { white-space: nowrap; }

6. CSS Word Spacing

- With the CSS attribute word-spacing you are able to specify the exact value of the spacing between your words. Word-spacing should be defined with exact values.

p { word-spacing: 10px; }

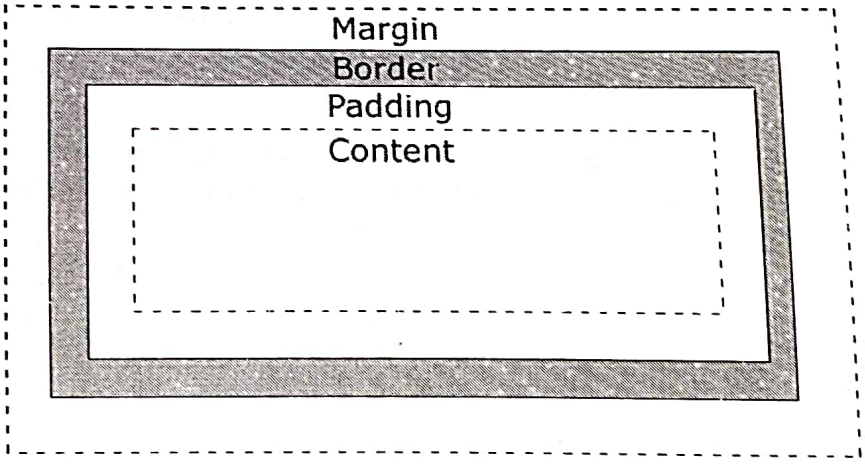
7. CSS Letter Spacing

- With the CSS attribute letter-spacing you are able to specify the exact value of the spacing between your letters. Letter-spacing should be defined with exact values.

p { letter-spacing: 3px; }

Explain BOX MODEL.

- All HTML elements can be considered as boxes. 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 HTML elements, and it consists of: margins, borders, padding, and the actual content.
- The box model allows us to place a border around elements and space elements in relation to other elements.
- The image below illustrates the box model:



- Explanation of the different parts:
  - **Margin** - Clears an area around the border. The margin does not have a background color, it is completely transparent
  - **Border** - A border that goes around the padding and content. The border is affected by the background color of the box
  - **Padding** - Clears an area around the content. The padding is affected by the background color of the box
  - **Content** - The content of the box, where text and images appear

Explain CSS Padding.

- The CSS padding properties define the space between the element border and the element content.

p {padding: 15px; border: 1px solid black;

- The top, right, bottom, and left padding can be changed independently using separate properties. A shorthand padding property can also be used, to change all puddings at once.

1. Possible Values

Value	Descriptions
length	Defines a fixed padding (in pixels, pt, em, etc.)
%	Defines a padding in % of the containing element.

padding-top:25px;
padding-bottom:25px;
padding-right:50px;
padding-left:50px;

2. Padding - Shorthand property

- To shorten the code, it is possible to specify all the padding properties in one property. This is called a shorthand property.

padding:25px 50px;

Explain CSS Margin.

- The CSS margin properties define the space around elements.

p {margin: 5px; border: 1px solid black; }

- 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 margins at once.

Value	Descriptions
auto	The browser calculates a margin
length	Specifies a margin in px, pt, cm, etc. Default value is 0px
%	Specifies a margin in percent of the width of the containing element
inherit	Specifies that the margin should be inherited from the parent element

1. Margin - Individual sides

- In CSS, it is possible to specify different margins for different sides:

margin-top:100px;
margin-bottom:100px;
margin-right:50px;
margin-left:50px;

2. **Margin - Shorthand property**
   - To shorten the code, it is possible to specify all the margin properties in one property. This is called a shorthand property.

     margin:100px 50px;

Explain CSS Border with all its attributes.

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

1. **Border Style Types**
   - The border-style property specifies what kind of border to display.

p.solid {border-style: solid; } p.double {border-style: double; } p.groove {border-style: groove; }
p.dotted {border-style: dotted; } p.dashed {border-style: dashed; } p.inset {border-style: inset; }
p.outset {border-style: outset; } p.ridge {border-style: ridge; } p.hidden {border-style: hidden; }

2. **Border Width**
   - The border-width property is used to set the width of the border.

table { border-width: 7px; border-style: outset; }
td { border-width: medium; border-style: outset; }
p { border-width: thick; border-style: solid; }

3. **Border Color**
   - The border-color property is used to set the color of the border.
   - Border colors can be any color defined by RGB, hexadecimal, or key terms. Below is an example of each of these types.

table { border-color: rgb(100, 100, 255); border-style: dashed; }
td { border-color: #FFBD32; border-style: ridge; }
p { border-color: blue; border-style: solid; }

4. **Border: border-(direction)**
   - If you would like to place a border on only one side of an HTML element, or maybe have a unique look for each side of the border, then use border-(direction).
   - The direction choices are of course: top, right, bottom, and left. CSS allows you to treat each side of a border separately from the other three sides.
   - Each side can have its own color, width, and style set, as shown below.

p { border-bottom-style: dashed ; border-bottom-color: yellow; border-bottom-width: 5px; }
h4 { border-top-style: double; border-top-color: purple; border-top-width: thick; }

Explain CSS Lists with all its attributes.

- 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

1. CSS List Style Type

- Specify all the list properties in one declaration.
  - Unordered list styles: square, circle, disc (default), and none
  - Ordered list styles: upper-alpha, lower-alpha, upper-roman, lower-roman, decimal (default), and none

```
ol { list-style-type: upper-roman; }
ul { list-style-type: circle; }
```

2. CSS Lists with Images

- Specify an image as the list-item marker in a list:

```
ul { list-style-image: url("listArrow.gif"); }
ol { list-style-image: url("listArrow2.gif"); }
```

3. CSS List Position

- With Specify that the the list-item markers should appear inside the content flow (results in an extra indentation)

```
ul { list-style-position: inside; }
ol { list-style-position: outside; }
```

- **Note**: "Outside" is actually the default setting for indentation.

Explain CSS Links

1. CSS Anchor/Link States

- 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 mouse over it
  - a:active - a link the moment it is clicked

```
a:link{color:#FF0000;}    /*unvisited link*/
a:visited{color:#00FF00;} /* visited link */
a:hover{color:#FF00FF;}  /* mouse over link */
a:active {color:#0000FF;} /* selected link */
```

2. Text Decoration

- The text-decoration property is mostly used to remove underlines from links.

```
a:link {text-decoration:none·}
a:visited {text-decoration:none;}
a:hover {text-decoration:underline;}
a:active {text-decoration:underline;}
```

3. Background Color

- The background-color property specifies the background color for links.

```
a:link {background-color:#B2FF99;}
a:visited {background-color:#FFFF85;}
a:hover {background-color:#FF704D;}
a:active {backqround-color:#FF704D;}
```

Explain CSS Position with example.

- With the knowledge of CSS Positioning we will be able to manipulate the exact position of your HTML elements.

1. Position Relative

- Relative positioning changes the position of the HTML element relative to where it normally appears.
- If we had a header that appears at the top of our page, we could use relative positioning to move it a bit to the right and down a couple of pixels. Below is an example.

```
h3 {position: relative; top: 15px;left: 150px;}
p {position: relative; left: -10px;}
```

2. Position Absolute

- With absolute positioning, you define the exact pixel value where the specified HTML element will appear.
- The point of origin is the top-left of the browser's viewable area, so be sure you are measuring from that point.

```
h3 {position: absolute; top: 50px;left: 45px;}
p{position: absolute; top: 75px;left: 75px;}
```

Explain CSS Layers. / z-index property

- CSS allows you to control which item will appear on top with the use of layers.
- In CSS, each element is given a priority.
- If there are two overlapping CSS positioned elements, the element with the higher priority wi appear on top of the other.
- To manually define a priority, set the z-index value. The larger the value, the higher the prior the element will have.

```
h4{position: relative; top: 30px;left: 50px; z-index: 2;}
p {position: relative; z-index: 1;background-color: #FFCCCC;}
```

- This paragraph has a z-index of 1, which is less than the header.
- If we had not defined the z-index, by default the paragraph would have been on top of the he because it appears later in our HTML code.

Explain CSS Float property.

- With CSS float, an element can be pushed to the left or right, allowing other elements to around it.
- Wrapping text around an image is easy when using the CSS Float attribute.
- You have a choice to either float the picture to the left or to the right and the rest is done fo

```
img.floatLeft { float: left; margin: 4px;}
img.floatRight { float: right; margin: 4px;}
```