Cascading Style Sheet (CSS)

What is CSS?

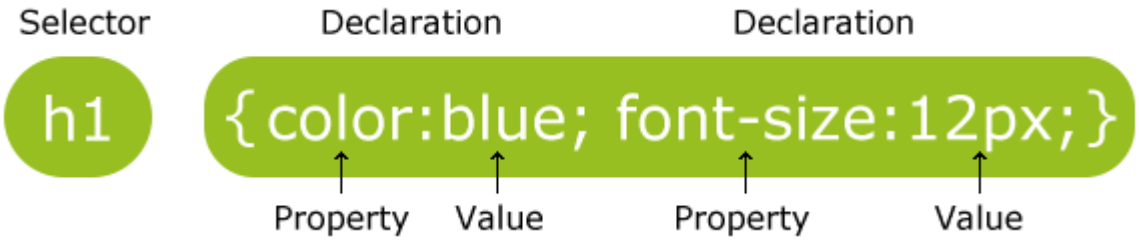
- CSS stands for **C**ascading **S**tyle **S**heets
  - Styles define how to display HTML elements
  - Styles are normally stored in Style Sheets
  - Styles were added to HTML 4.0 to solve a problem
  - External style sheets can save a lot of work
  - External style sheets are stored in CSS files
  - Multiple style definitions will cascade into one

CSS Saves a Lot of Work!

- 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.

CSS Selectors

Three types of CSS Selectors

- Element
- Class
- ID

CSS Element Selector Example:

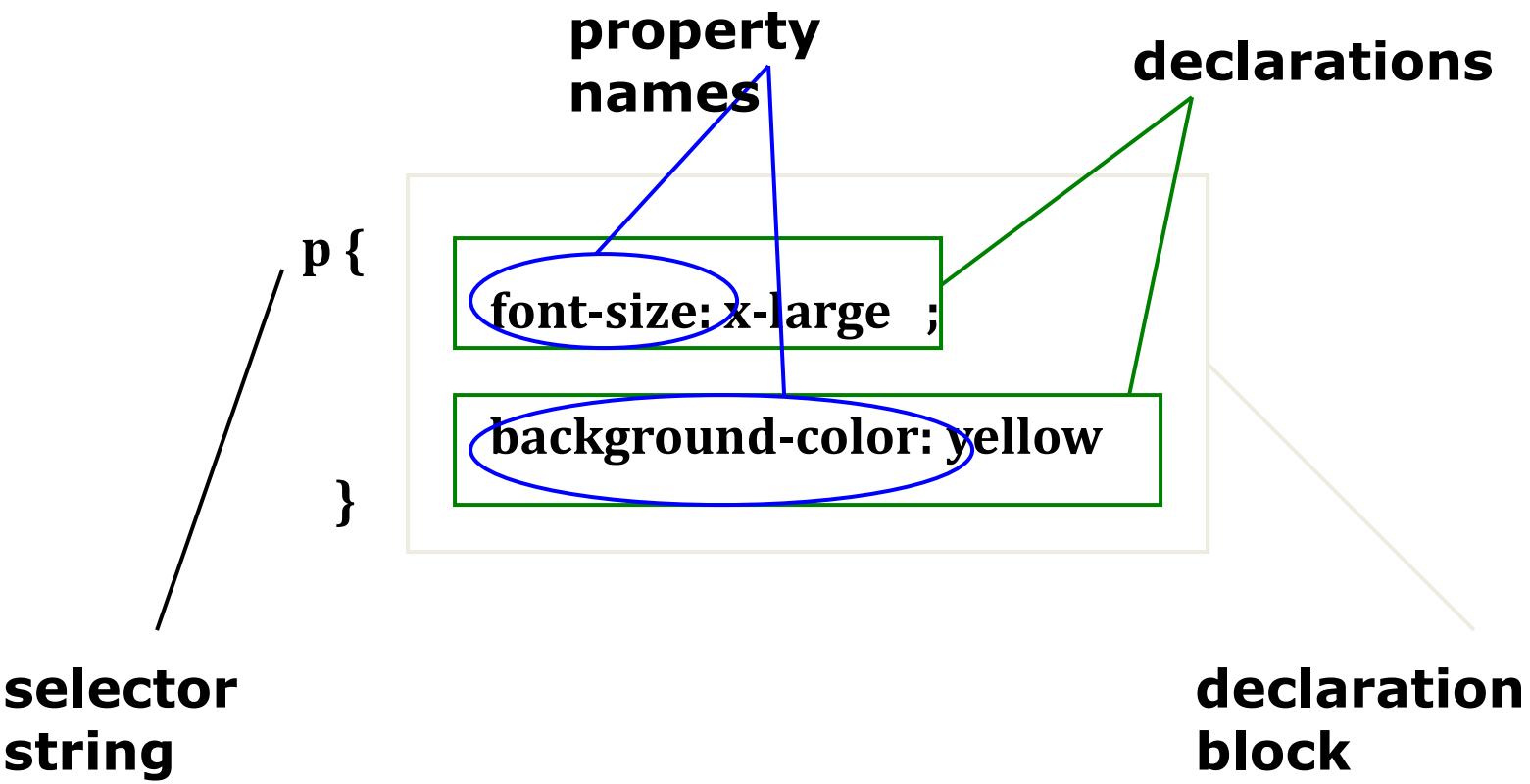
- A CSS declaration always ends with a semicolon, and declaration groups are surrounded by curly brackets:

```
p {color:red;text-align:center;}
```

  To make the CSS more readable, you can put one declaration on each line, like this:

```
p {
    color:red;
    text-align:center;
}
```

CSS Style Rule



CSS Comments

- Comments are used to explain your code, and may help you when you edit the source code at a later date. Comments are ignored by browsers.
- A CSS comment begins with "/*", and ends with "*/", like this:
- `/*This is a comment*/`

```
p
  {
  text-align:center;
  /*This is another comment*/ color:black;
  font-family:arial;
  }
```

Element Type Selectors

- An element type selector matches all instance of the element in the document with the corresponding element type name. Let's try out an example to see how it actually works:
- Example

```
p
{
    color: blue;
}
```

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 "#".

Example

- Imagine within the body element of our html page, we have the following paragraph element
- Welcome to the wonderful world of HTML
- **We can then create a CSS rule with the id selector:**

```
#welcome
{
    text-align: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:

Example

- Imagine within the body element of our html page, we have the following header element

  <h2 class=”center”>Summary</h2>
- We can then create a CSS rule with the class selector:

  .center

  {

  text-align:center;

  }

Difference between ID and Class

- **ID's are unique**
- Each element can have only one ID
- Each page can have only one element with that ID
- **Classes are NOT unique**
- You can use the same class on multiple elements.
- You can use multiple classes on the same eleme

Difference between ID and Class

Key	Id	Class
Syntax	In CSS for an element ID name starts with the “#” symbol followed by a unique name assigned to it.	On the other hand class assigned to an element has its name starts with “.” followed by class name.
Selector	Only one ID selector can be attached to an element.	Multiple class selectors can be attached to an element.
Uniqueness	Id is unique in a page and can only apply to at most one element Each element can have only one ID	The class can be applied to multiple elements so it could be multiple times on a single page. You can use the same class on multiple elements.

Three Ways to Insert CSS

There are three ways of inserting a style sheet:

- External style sheet
- Internal style sheet
- Inline style

Inline Styles

- An inline style loses many of the advantages of style sheets by mixing content with presentation. Use this method sparingly!
- To use inline styles you use the style attribute in the relevant tag. The style attribute can contain any CSS property. The example shows how to change the color and the left margin of a paragraph:
- This is a paragraph.

Internal Style Sheet

- An internal style sheet should be used when a single document has a unique style. You define internal styles in the head section of an HTML page, by using the <style> tag, like this:

```
<head>
 <style type="text/css">
 hr
{
color:blue;
}
p
 {
 margin-left:20px;
}
body
 {
background-image:url("images/back40.gif");
}
 </style>
</head>
<body>

</body>
```

External Style Sheet

- An external style sheet is ideal when the style is applied to many pages.
- With an external style sheet, you can change the look of an entire Web site by changing one file.
- Each page must link to the style sheet using the <link> tag.
- The <link> tag goes inside the head section:

```
<head>
   <link rel="stylesheet" type="text/css"
   href="mystyle.css" />
 </head>
```

An external style sheet can be written in any text editor. The file should not contain any html tags. Your style sheet should be saved with a .css extension. An example of a style sheet file is shown below:

```
hr {color:red;}
 P {argin-left:20px;}
 body {background-image:url("images/back40.gif");}
```

CSS Background Properties

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

  background-color

  background-image

  background-repeat

  background-attachment

  background-position

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:

Example

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

In the example below, the h1, p, and div elements have different background colors:

Example

```
h1{background-color:#6495ed;}
 p{background-color:#e0ffff;}
 div{background-color:#b0c4de;}
```

Background Image

- The background-image property specifies an image to use as the background of an element.
- By default, the image is repeated so it covers the entire element.
- The background image for a page can be set like this:

Example

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

- Background Image - Repeat Horizontally or Vertically
- By default, the background-image property repeats an image both horizontally and vertically.
- Some images should be repeated only horizontally or vertically, or they will look strange.
- To repeat an image only horizontally or vertically, use the background-repeat property.

```
body { background-image:url('gradient2.png');
background-repeat:repeat-x; }
```

Background Image – Set no-repeat

- When using a background image, use an image that does not disturb the text.
- Showing the image only once is specified by the background-repeat property:

Example

```
Body
{
  backgroundimage:url('img_tree.png');
  background-repeat:no-repeat;
}
```

CSS background-attachment

- The background-attachment property is used to specify if the background image is fixed or scroll with the rest of the page in browser window.
- If you set fixed the background image then the image will not move during scrolling in the browser.
- example with fixed background image.

```
background: white url('bbb.gif');
background-repeat: no-repeat;
background-attachment: fixed;
```

CSS background-position

- The background-position property is used to define the initial position of the background image. By default, the background image is placed on the top-left of the webpage.
- You can set the following positions:

  center

  top

  bottom

  left

  Right

  Example:

  background-position: center;

Background - Shorthand property

- The shorthand property for background is simply "background":

Example

```
Body
  {
background:#ffffff url('img_tree.png') no-repeat
   right top;
}
```

When using the shorthand property the order of the property values are:

- background-color
- background-image
- background-repeat
- background-attachment
- background-position

CSS Border

- The CSS border is a shorthand property used to set the border on an element.
- The CSS border properties are use to specify the style, color and size of the border of an element. The CSS border properties are given below
- border-style
- border-color
- border-width
- border-radius

CSS border-style

- The Border style property is used to specify the border type which you want to display on the web page.

Value	Description
none	It doesn't define any border.
dotted	It is used to define a dotted border.
dashed	It is used to define a dashed border.
solid	It is used to define a solid border.
double	It defines two borders wIth the same border-width value.
groove	It defines a 3d grooved border. effect is generated according to border-color value.
ridge	It defines a 3d ridged border. effect is generated according to border-color value.
inset	It defines a 3d inset border. effect is generated according to border-color value.
outset	It defines a 3d outset border. effect is generated according to border-color value.

CSS border-width

- The border-width property is used to set the border's width.
- It is set in pixels.
- You can also use the one of the three pre-defined values, thin, medium or thick to set the width of the border.

```
border-width: 5px;

border-width: medium;
```

CSS border-color

There are three methods to set the color of the border.

- Name: It specifies the color name. For example: "red".
- RGB: It specifies the RGB value of the color. For example: "rgb(255,0,0)".
- Hex: It specifies the hex value of the color. For example: "#ff0000".

  Ex. **border-color: #98bf21;**

CSS Margin

- CSS Margin property is used to define the space around elements.
- It clears an area around the element.
- Top, bottom, left and right margin can be changed independently using separate properties.
  - margin-top
  - margin-right
  - margin-bottom
  - margin-left
- You can also change all properties at once by using shorthand margin property.

  margin: 10px 5px 15px 20px;

- **If the margin property has four values:**
- margin: 10px 5px 15px 20px;
  - top margin is 10px
  - right margin is 5px
  - bottom margin is 15px
  - left margin is 20px
- **If the margin property has three values:**
- margin: 10px 5px 15px;
  - top margin is 10px
  - right and left margins are 5px
  - bottom margin is 15px
- **If the margin property has two values:**
- margin: 10px 5px;
  - top and bottom margins are 10px
  - right and left margins are 5px
- **If the margin property has one value:**
- margin: 10px;
  - all four margins are 10px
- **Note:** Negative values are allowed.