Technical University of Sofia

Faculty of Computer Systems and Control

Web Programming

Lecture 3

Styling your webpage with CSS

What is CSS?

- **C**ascading **S**tyle **S**heets
- Contains the rules for the presentation of HTML.

HTML

+

CSS

=

Web Page

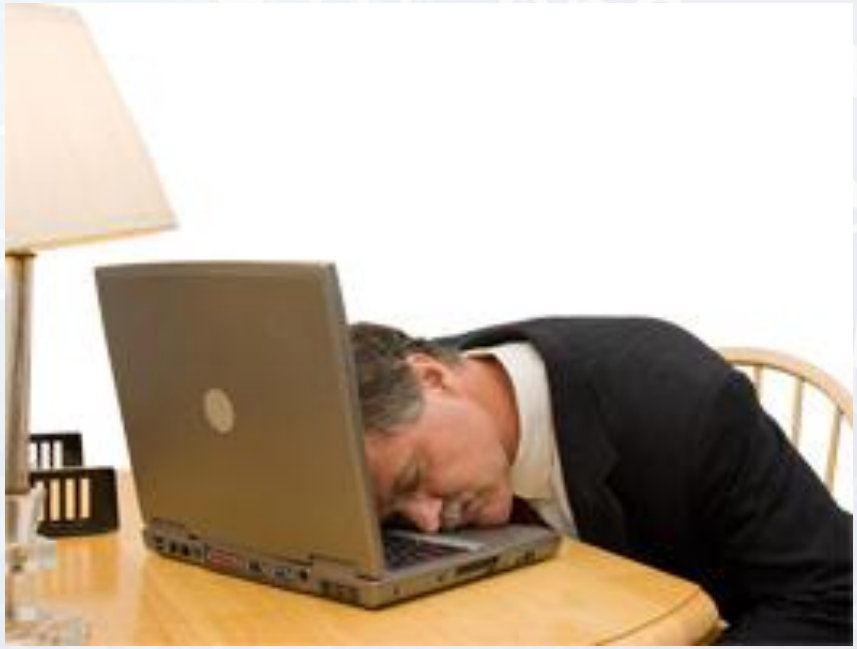
- CSS was introduced to keep the presentation information separate from HTML markup (content).

Before CSS

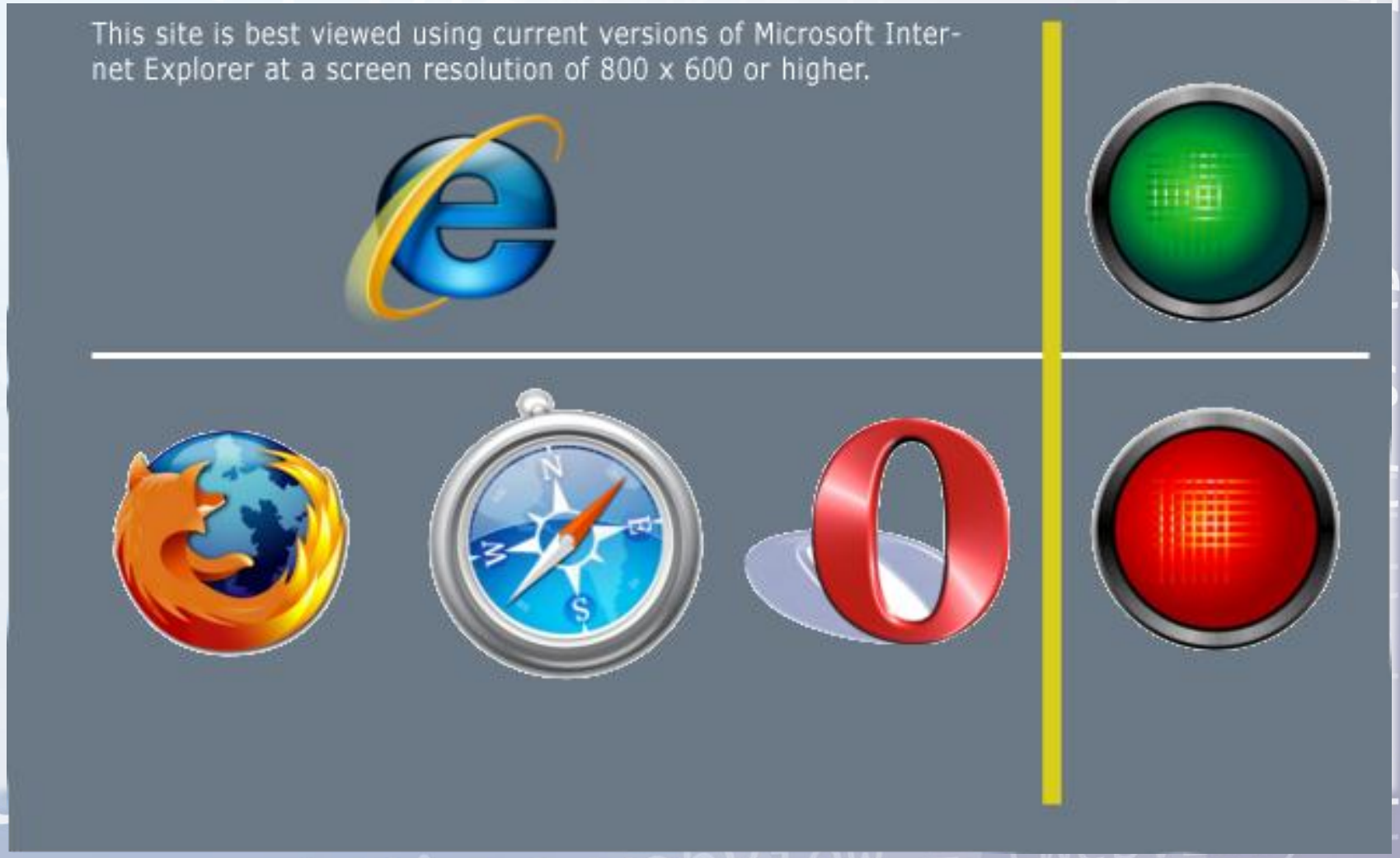
- Initially Designers used presentation tags like (FONT, B, BR, TABLE etc.) and spacers GIFs to control the design of web pages.

```
<body>
<table width="600" border="10" cellpadding="0" cellspacing="0" bordercolor="#FF00FF">
  <tr>
    <td><table width="100%"  border="10" cellpadding="0" cellspacing="0" bordercolor="#0000FF">
      <tr>
        <td><table width="100%"  border="10" cellpadding="0" cellspacing="0" bordercolor="#FF0000">
          <tr>
            <td> </td>
          </tr>
        </table></td>
      </tr>
      <tr>
        <td><table width="100%"  border="10" cellpadding="0" cellspacing="0" bordercolor="#FF0000">
          <tr>
            <td> </td>
            <td> </td>
          </tr>
          <tr>
            <td> </td>
            <td> </td>
          </tr>
        </table></td>
      </tr>
      <tr>
```

- Any modification in the design of websites was a very difficult and boring task , as it evolves manually editing every HTML page.



Providing support for multiple browsers was a difficult task.



What is CSS?

- Styles define **how to display** HTML elements
- 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**

Sources of Styles

Author (developer) Styles

- **Inline Styles** - As inline attribute “style” inside HTML tags

```
<div style="font-weight: bold;">I am bold</div>
```

- **Embedded Styles** - As embedded style tag with in HTML document.

```
<html>
   <head>
        <title>Welcome to the WEB!</title>
        <style>
          .footer {
            width:90%;
          }
        </style>
        -------
</html>
```

- **Linked Styles** - Inside separate files with .css extension

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

Sources of Styles(contd.)

- **User Style sheets**

  This file contains the user created styles .

  [firefox profile folder]/ chrome/userContent-example.css is the current user's style sheet file for the firefox.

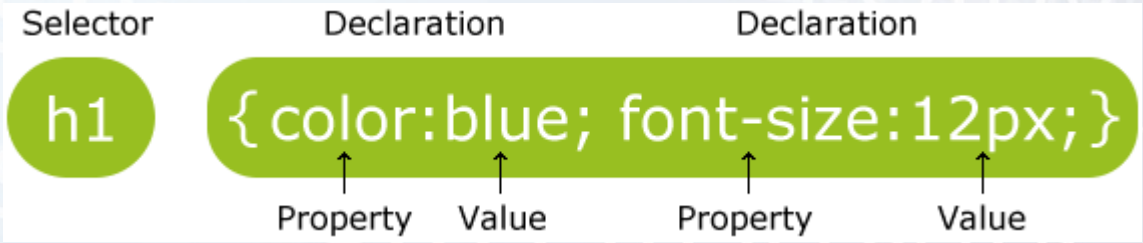
- **Browser default style sheet**

  This file contains default styles for all users of a browser

  [firefox folder]/res/html.css is the default style sheet file for the firefox.

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.

Example

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

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

or

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

CSS Comments

- A CSS comment begins with "/*", and ends with "*/", like this:

```
/*This is a comment*/
```

- Comments are ignored by browsers.

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 "#".
- ID name can NOT start with a number!

The id Selector – Example

- The style rule below will be applied to the element with id="para1":

```
#para1 { text-align:center; color:blue; }
```

- To set an ID to HTML element you add it as an attribute:

```
<p id="para1"> ... </p>
```

- Only one element can have *para1* id!

CSS Selectors - ID

- ID based (#)

HTML

```
<div id="content">
   Text
</div>
```

CSS

```
#content {
        width: 200px;
}
```

ID selectors should be used with single elements.

The class Selector

- The class selector is used to specify a style for a group of 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 "."

The class Selector – Example

- In the example, all HTML elements with class="center" will be center-aligned:

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

- To set an HTML element with that class you use the attribute class:

```
<p class ="center“> ... </p>
<div class ="center“> ... </div>
```

Class based selector

- Class (.)

HTML

```
<div class="big">
   Text
</div>
<div>
   <span class="big">some text </span>
</div>
```

CSS

```
.big{
    width: 200px;
}
```

Class based styles can be used by **multiple** HTML elements.

Tag based selectors

- Tag (Tag name)

HTML

```
<div>
   Text
</div>
<div>
   <span>some text </span>
</div>
<span>some other text </span>
```

CSS

```
DIV {
        width: 200px;
}
SPAN {
        font-size:130%;
}
```

Grouping

- Multiple selectors can be grouped in a single style declaration by using , .

```
H1, P , .main {
  font-weight:bold;
}
```

Descendant selectors

Descendant selectors are used to select elements that are descendants (**not necessarily children**) of another element in the document tree.

HTML

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

CSS

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

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!
    </p>
  </div>
</div>
```

CSS

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

Universal selectors

Universal selectors are used to select any element.

```
* {
    color: blue;
}
```

Adjacent sibling selectors

Adjacent sibling selectors will select the sibling immediately following an element.

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

will work for

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

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" />
```

CSS Pseudo-classes

selector:pseudo-class { property: value }

:link
:visited
:hover
:active

} Link (A tag) related pseudo classes

:after
:before
:first-child
:focus
:first-letter
:first-line
:lang

CSS Values

- **Words:** text-align:center;.
- **Numerical values:** Numerical values are usually followed by a unit type.

  font-size:12**px**;

  12 is the numerical value and px is the unit type pixels.
  - **Absolute Values – in, pc, px, cm, mm, pt**
  - **Relative Values – em, ex, %**
- **Color values:** color**:#336699** or color#369 or rgb(255, 255, 255).

Categories of CSS properties

- Positioning and layout handling related.
- Background related properties.
- Font and text related
- Links related.
- Lists related.
- Table related.

CSS Background

- 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 Image

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

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

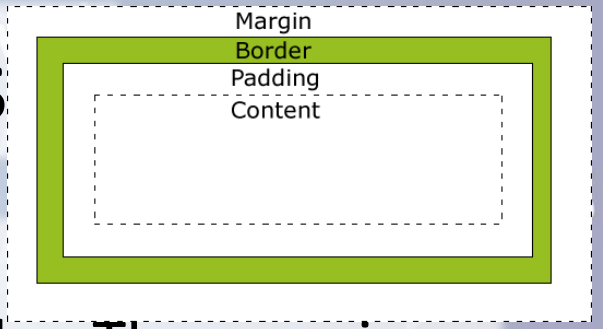
CSS formatting Text

- color: blue, #00ff00, rgb(255,0,0)
- text-align: center, left, right, justify
- text-decoration: none, overline, line-through, underline
- text-transform: uppercase, lowercase, capitalize
- and more

Box Model of elements

- All HTML elements can be considered as boxes.

Box Model of elements



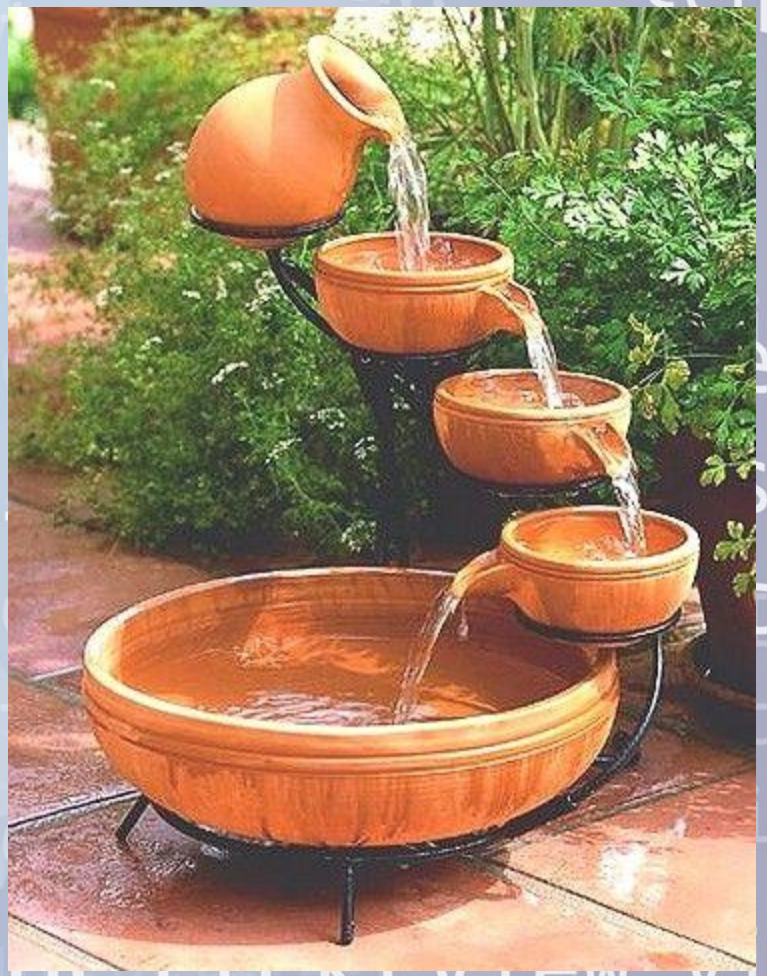
- **Margin** - Clears an area around the border. The margin does not have a background color, it is completely transparent
- **Border** - A border that goes around the padding and content. The border is affected by the background color of the box
- **Padding** - Clears an area around the content. The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

Cascade

The CSS cascade assigns a weight to each style rule. When several rules apply, the one with the greatest weight takes precedence.

Order of preference for various styles:

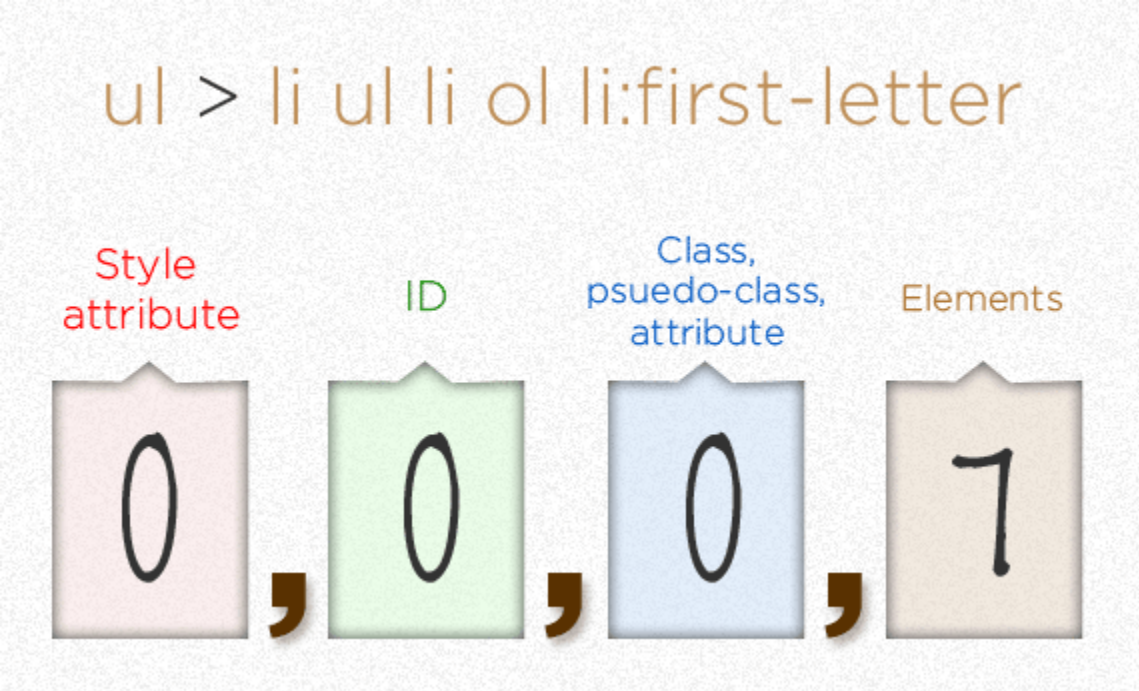
- Default browser style sheet (weakest)
- User style sheet
- Author style sheet
- Author embedded styles
- Author inline styles (strongest)



CSS Specificity

Rule 1. CSS File >> Embedded >> Inline

Rule 2. TAG >> class >> ID



Inheritance

- Styles that relate to text and appearance are **inherited** by the descendant elements.
- Styles that relate to the appearance of boxes created by styling DIVs, paragraphs, and other elements, such as borders, padding, margins are **not inherited**.

Thank you for your attention!