CITS1231 Web Technologies
Cascading Style Sheets: Properties part A
## XHTML vrs HTML

<table>
<thead>
<tr>
<th>XHTML</th>
<th>HTML</th>
</tr>
</thead>
<tbody>
<tr>
<td>All elements explicitly closed eg: <code>&lt;br /&gt;</code></td>
<td>Not necessary eg: <code>&lt;br&gt;</code></td>
</tr>
<tr>
<td>All elements/attributes must be <em>lower case</em></td>
<td>Case insensitive</td>
</tr>
<tr>
<td>Must have quotes for attributes eg: <code>&lt;body lang=&quot;en&quot;&gt;</code></td>
<td>Quotes not necessary eg: <code>&lt;body lang=en&gt;</code></td>
</tr>
<tr>
<td>Necessary to have: <code>&lt;html&gt;, &lt;head&gt;, or &lt;body&gt;</code></td>
<td>Not necessary</td>
</tr>
</tbody>
</table>

**Recommendation:** Use XHTML.
Cascading Style Sheets

• **CSS1** – official W3C, Dec 1996

• Introduced styles for:
  
  – Fonts (eg typeface, emphasis)
  – Text (eg spacing)
  – Color (eg of text, backgrounds)
  – Alignment (eg of text, images, tables)
  – Block-level Elements
Cascading Style Sheets

- **CSS2** – official W3C, May 1998

- Introduced styles for:
  - Positioning (abs, rel, z-index)
  - Visual Formatting (Box Model)
  - Media Types (screen, paper, speech, braille)
  - Aural content and bidirectional text.
Cascading Style Sheets

- **CSS3** (which is still in development) will introduce styles for the following document features:
  - User Interfaces
  - Accessibility
  - Columnar layout
  - International Features
  - Mobile Devices
  - Scalable Vector Graphics
Multiple declarations

• Multiple declarations for the same selector may be organized into semicolon separated groups. For example,

```html
h1 {font-weight: bold}
h1 {font-size: 12pt}
h1 {font-family: Helvetica}
h1 {font-style: normal}
```

is equivalent to:

```html
h1 {
    font-weight: bold; font-size:12pt;
    font-family: Helvetica; font-style: normal
}
```
Grouping

- When several selectors share the same declarations, they may be grouped as a comma-separated list.

```
h1 {font-family: sans-serif}
h2 {font-family: sans-serif}
h3 {font-family: sans-serif}
```

is equivalent to:

```
h1, h2, h3 {font-family: sans-serif}
```
Selecting Elements

- There are numerous ways of specifying to which elements style rules apply. Here are examples of some of the more commonly used:

  p {color:red}
  h1,h2,h3 {...}
  strong em {...}
  div[secret="yes"] {...}
  span.important {...}
  p#1234 {...}

  Every p element
  Group selector
  Contextual selector
  Attribute selector
  Class selector
  ID selector
More selector rules

<table>
<thead>
<tr>
<th>Selector</th>
<th>Matches</th>
</tr>
</thead>
<tbody>
<tr>
<td>*</td>
<td>Any element in the hierarchy</td>
</tr>
<tr>
<td>e</td>
<td>The specified element in the hierarchy, where e is the specified element</td>
</tr>
<tr>
<td>e1, e2, e3, ...</td>
<td>The group of elements e1, e2, e3, ...</td>
</tr>
<tr>
<td>ef</td>
<td>The element f when it is a descendant of the element e</td>
</tr>
<tr>
<td>e &gt; f</td>
<td>The element f when it is a direct child of the element e</td>
</tr>
<tr>
<td>e + f</td>
<td>The element f when it is immediately preceded by the sibling element e</td>
</tr>
</tbody>
</table>
Selector: Any element

```html
<html>
  <head>
    <style type="text/css">*
      {color:red;}
    -->
  </style>
</head>
<body>
  <h1>Heading 1</h1>
  <h2>Heading 2.a</h2>
  <p>First paragraph. </p>
  <p>Second paragraph has a <b>bold</b> and a <span>span with another <b>bold</b></span>. </p>
  <h2>Heading 2.b</h2>
  <p>Third paragraph has a <b>bold</b> also. </p>
</body>
</html>
```
Selector: Any element

Any selector example
Example: Selector p

```html
<html>
  <head>
    <style type="text/css">-
      p {color:red;}
    </style>
  </head>
  <body>
    <h1>Heading 1</h1>
    <h2>Heading 2.a</h2>
    <p>First paragraph. </p>
    <p>Second paragraph has a <b>bold</b> and a <span>span with another <b>bold</b> span>. </p>
    <h2>Heading 2.b</h2>
    <p>Third paragraph has a <b>bold</b> also. </p>
  </body>
</html>
```
Example: Selector p

Selector p example
Example: Selector h1,h2,span

```html
<html>
  <head>
    <style type="text/css">
      h1,h2,span {color:red;}
    </style>
  </head>
  <body>
    <h1> Heading 1</h1>
    <h2> Heading 2.a</h2>
    <p> First paragraph. </p>
    <p> Second paragraph has a <b>bold</b> and a <span>span with another <b>bold</b></span>. </p>
    <h2> Heading 2.b</h2>
    <p> Third paragraph has a <b>bold</b> also. </p>
  </body>
</html>
```
Example: Selector h1,h2,span

Selector h1,h2,span example
Example: Selector p b

```html
<html>
  <head>
    <style type="text/css">
      <!--
        p b {color:red;}
      -->
    </style>
  </head>
  <body>
    <h1>Heading 1</h1>
    <h2>Heading 2.a</h2>
    <p>First paragraph. </p>
    <p>Second paragraph has a <b>bold</b> and a <span>span with another <b>bold</b></span>. </p>
    <h2>Heading 2.b</h2>
    <p>Third paragraph has a <b>bold</b> also. </p>
  </body>
</html>
```
Example: Selector p b

![Diagram of HTML elements and CSS styles]

- `p b` with `color:red;` - Mozilla Firefox

- Heading 1
- Heading 2.a
- First paragraph.
- Second paragraph has a **bold** and a span with another **bold**.
- Heading 2.b
- Third paragraph has a **bold** also.
Example: Selector p>b

```html
<html>
<head>
  <style type="text/css">
    <!--
    p>b {color:red;}
    -->
  </style>
</head>
<body>
  <h1>Heading 1</h1>
  <h2>Heading 2.a</h2>
  <p>First paragraph. </p>
  <p>Second paragraph has a <b>bold</b>
     and a <span>span with another <b>bold</b></span>. </p>
  <h2>Heading 2.b</h2>
  <p>Third paragraph has a <b>bold</b> also.</p>
</body>
</html>
```
Example: Selector p > b

![Diagram of HTML structure with selector p > b applied to specific elements, showing the result in Mozilla Firefox.](image-url)
Example: Selector h2+p

```html
<html>
<head>
  <style type="text/css">
    h2+p {color:red;}
  </style>
</head>
<body>
  <h1>Heading 1</h1>
  <h2>Heading 2.a</h2>
  <p>First paragraph.</p>
  <p>Second paragraph has a <b>bold</b>
      and a <span>span with another <b>bold</b></span>.</p>
  <h2>Heading 2.b</h2>
  <p>Third paragraph has a <b>bold</b> also.</p>
</body>
</html>
```
Example: Selector h2+p
Examples Summary
Examples Source

View the source at the following links:

- Any selector example
- Selector p example
- Selector h1,h2,span example
- Selector p b example
- Selector p>b example
- Selector h2+p example
Element CLASS selector

• Elements can be selected on the basis of their class:

```html
<html><head>
<title>CLASS selector example</title>
<style type="text/css">
<!--
 .important {font-size:larger}
 .trivial {font-size:smaller}
-->
</style>
</head>
<body><h2>Warning</h2>
<p class="important">Important text</p>
<p class="trivial">Less important text</p></body>
</html>
```
Style for a class of elements
Element ID selector

- Styles can be applied to elements with a specific id

```html
<html><head>
<title>ID selector example</title>
<style type="text/css">
    p {font-family: "Times New Roman", serif}
    #special {font-family: Courier, sans-serif}
</style>
<body>
    <p>Any element may have a ID attribute.</p>
    <p id="special">So long as it is unique.</p>
</body>
</html>
```
Pseudo-class selectors

- A **pseudo-class** is a classification of an element based on its status, position, or current use in the document.

<table>
<thead>
<tr>
<th>Pseudo-class</th>
<th>Description</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>link</td>
<td>The link has not yet been visited by the user</td>
<td>a:link {color: red}</td>
</tr>
<tr>
<td>visited</td>
<td>The link has been visited by the user</td>
<td>a:visited {color: green}</td>
</tr>
<tr>
<td>active</td>
<td>The link is in the process of being activated by the user</td>
<td>a:active {color: yellow}</td>
</tr>
<tr>
<td>hover</td>
<td>The mouse cursor is hovering over the link (CSS2)</td>
<td>a:hover {color: blue}</td>
</tr>
<tr>
<td>focus</td>
<td>The element has received the focus of the keyboard or mouse cursor (CSS2)</td>
<td>input.focus {background-color: yellow}</td>
</tr>
<tr>
<td>first-child</td>
<td>The element is the first child of its parent (CSS2)</td>
<td>p:first-child {text-indent: 0}</td>
</tr>
<tr>
<td>lang</td>
<td>The element is in the specified language (CSS2)</td>
<td>q:lang(FR) {quotes: '&lt;&lt;' '&gt;&gt;'}</td>
</tr>
</tbody>
</table>
Pseudo-class selectors

An element may match several of them at the same time:

```
a:focus {background:yellow}
a:focus:hover {background:green}
```

Example in action:

Pseudo-elements selectors

- **Rollover effects** can be created using pseudo-classes
- **Pseudo-elements** are elements based on information about an element’s content, use or position

<table>
<thead>
<tr>
<th>Pseudo-element</th>
<th>Description</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>first-letter</td>
<td>The first letter of the element text</td>
<td>p:first-letter {font-size: 14pt}</td>
</tr>
<tr>
<td>first-line</td>
<td>The first line of the element text</td>
<td>p:first-line {text-transform: uppercase}</td>
</tr>
<tr>
<td>before</td>
<td>Content to be placed directly before the element (CSS2)</td>
<td>p:before {content: &quot;Special!&quot;}</td>
</tr>
<tr>
<td>after</td>
<td>Content to be placed directly after the element (CSS2)</td>
<td>p:after {content: &quot;eof&quot;}</td>
</tr>
</tbody>
</table>
Pseudo-element selectors

- CSS has two pseudo-elements: first-letter and first-line.

```html
<html>
  <head>
    <title>The style of a news letter</title>
    <style type="text/css">
      p.special:first-line {font-variant:small-caps}
      p.special:first-letter {font-size: 300%; float: left}
    </style>
  </head>
  <body>
    <h1>Student Club News</h1>
    <p class="special">The first line of this news letter is in small capital letters and the first letter is 300% larger (a drop cap). </p>
  </body>
</html>
```
The resulting page ...

Student Club News

The first line of this news letter is in small capital letters and the first letter is 300% larger (a drop cap).
Other types of selectors (extra)

• Contextual selectors
  - h1 em {color: blue}  /*the <em> within the <h1>*/
  - body > p {line-height: 1.3}  /*<p> directly within the <body>*/
  - h1+h2 {margin-top: -5mm}  /* <h2> directly after an <h1> */
  - div > p:first-child {text-indent: 0}
    /*<p> that is the first child of a <div>*/

• Selection on attribute
  - a[href] {border: solid}  /* selection by existence */
  - span[class="example"] {color:blue}  /* selection by value */
  - div[status~="important"] {z-order:2}
    /* selection by value: from comma-separated list */