
ACIT 1620 - FUNDAMENTAL WEB TECHNOLOGIES

WEEK 6

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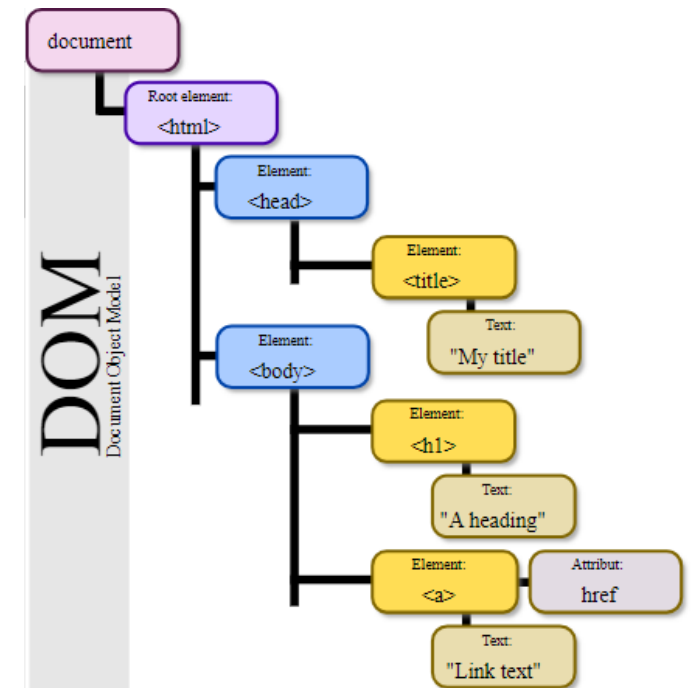
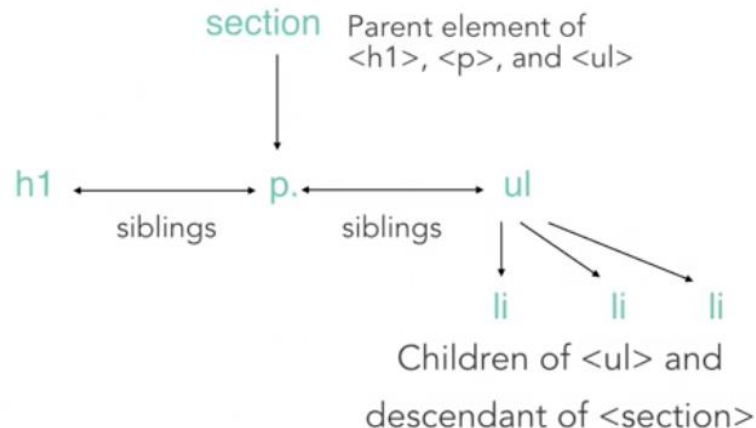
Today's Learning Outcomes

- Use CSS combinator selectors to select and style elements based on their location in the document.
- Utilize appropriate pseudo-class selectors to select elements that are in a specific state.
- Use appropriate pseudo-element selectors to select specified parts of an element.
- Demonstrate how conflicting rules are resolved in CSS using the concepts of cascade, specificity, and inheritance.
- Use CSS float and position properties to customize the location of objects on a page.

Remember Document Object Model (DOM)?

- When a web page is loaded, the browser creates a Document Object Model of the page.
 - Notice the tree-like structure of DOM model.
- Note: children are still considered as descendants:

```
<section>
  <h1>Heading</h1>
  <p>Paragraph.</p>
  <ul>
    <li>List item</li>
    <li>List item</li>
    <li>List item</li>
  </ul>
</section>
```



CSS Combinator selectors

- Apply styles based on the location of an element in a document

Selector	Example	Example description
Descendant selector <u>element element</u>	div p	Selects all <p> elements inside <div> elements
Child selector <u>element > element</u>	div > p	Selects all <p> elements where the parent is a <div> element
Adjacent sibling selector <u>element + element</u>	div + p	Selects all <p> elements that are placed <u>immediately</u> after <div> elements
General sibling selector <u>element1 ~ element2</u>	p ~ ul	Selects every element that are preceded by a <p> element

Combinator – Activity

```
<h2>This is a heading</h2>
<div class="container">
  <h2>This is another heading</h2>
  <p>This paragraph comes after the heading.</p>
  <p>This is the second paragraph.</p>

  <h2>Another heading</h2>
  <p>This paragraph comes after the heading.</p>

  <ul class="list">
    <li>One</li>
    <li>Two
      <ul>
        <li>2.1</li>
        <li>2.2</li>
      </ul>
    </li>
  </ul>
</div>
```

- Add a CSS rule to make all the h2 elements inside the div italic
- Add a CSS rule to make any paragraph that directly follows an h2 red.
- Remove the bullets and add a 1px grey bottom border **only** to list items that are a direct child of the ul with a class of list.

CSS Pseudo-class Selectors

- Style elements based on their **state**
- Example of pseudo-classes:

```
selector:pseudo-class {  
    property: value;  
}
```

- :link
- :visited
- :focus
- :hover
- :active
- :checked
- :first-child

```
a:link {  
    color: #FF0000;  
}
```

```
a:visited {  
    color: #00FF00;  
}
```

```
a:hover {  
    background-color: yellow;  
}
```

```
p:first-child {  
    color: blue;  
}
```

- [Index of standard pseudo-classes](#)

CSS Pseudo-element Selectors

- Style a **specific part** of the **selected element(s)**:
- Examples:
 - ::after
 - ::before
 - ::first-line
 - ::first-letter
 - ::selection

```
selector::pseudo-element {  
    property: value;  
}
```

```
p::first-letter {  
    color: #ff0000;  
    font-size: xx-large;  
}
```

```
::selection {  
    color: red;  
    background: yellow;  
}
```

```
p::first-line {  
    color: #ff0000;  
    font-variant: small-caps;  
}
```

```
h1::before {  
    content: url(smiley.gif);  
}
```

Pseudo-class, pseudo-element, and attribute Selector – Activity

- Without changing the HTML code, add CSS rules to:
 - Make all the links inside a list item green in unvisited state, red when visited, and pink when hover.:
 - Note: a:hover MUST come after a:link and a:visited in the CSS definition in order to be effective!
 - Make the first letter of the first list item bold and 120% in size.
 - Give a yellow background to the “BCIT homepage” hyperlinked text

```
<a title="BCIT homepage" href="https://bcit.ca">Links</a>
<ul>
  <li><a title="programs" href="https://www.bcit.ca/study/">Programs</a></li>
  <li><a title="admission" href="https://www.bcit.ca/admission">Admission</a></li>
</ul>
```


WHAT HAPPENS WHEN TWO SELECTORS COULD SELECT THE SAME HTML ELEMENT? (CONFLICTING RULES)

- Cascade rule:

```
p {  
  color: red;  
}
```

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

- Specificity rule:

```
.special {  
  color: red;  
}
```

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

```
<p class="special">What color am I?</p>
```

SPECIFICITY

i Note: Each selector type has its own level of specificity that cannot be overwritten by selectors with a lower specificity level. For example, a *million class* selectors combined would not be able to overwrite the specificity of *one id* selector.

The best way to evaluate specificity is to score the specificity levels individually starting from the highest and moving on to the lowest when necessary. Only when there is a tie between selector scores within a specificity column do you need to evaluate the next column down; otherwise, you can disregard the lower specificity selectors since they can never overwrite the higher specificity selectors.

CSS Inheritance – Activity

```
<ul class="main">
  <li>Item One</li>
  <li>Item Two
    <ul>
      <li>2.1</li>
    </ul>
  </li>
  <li>Item Three
    <ul class="special">
      <li>3.1
        <ul>
          <li>3.1.1</li>
        </ul>
      </li>
      <li>3.2</li>
    </ul>
  </li>
  <li>Item Four</li>
</ul>
```

- What color do you expect “2.1” to be?
- Are border and padding properties inherited?
- Add a CSS rule to make everything nested under “Item Three” rendered in green.
- What color do you expect “Item Four” to be?

```
.main {
  color: rebeccapurple;
  border: 2px solid #ccc;
  padding: 1em;
}
```

Cascading and Specificity – Activity

- What happens if you update the previous example with this internal styling?

```
<head>
  <link rel="stylesheet" type="text/css" href="css/stylesheet.css">
  <style>
    .main {
      color: orange;
    }
  </style>
</head>
```

- What happens if you change the order of <link> and <style> tags?
- Now add an inline style with color: teal for the ul element with class="main". How do you expect the colors of the list items to change?

CSS Selector Specificity – Example

```
<head>
  <style>
    .bright {
      color: rebeccapurple;
    }
    .small {
      font-size: 1em;
    }
    h2 {
      font-size: 2em;
      color: black;
      font-family: Georgia, 'Times New Roman', Times, serif;
    }
  </style>
</head>
```

- What color do you expect the h2 with class small to be?
- What font-size do you expect the h2 with class bright to be?

```
<body>
  <h2>Heading with no class</h2>
  <h2 class="small">Heading with class of small</h2>
  <h2 class="bright">Heading with class of bright</h2>
</body>
```

CSS float property

- Use float and clear properties to style this HTML code as rendered:

```
  
<p>This sentence should appear right of the image.</p>  
<p class="below"> This sentence should appear below the image.</p>
```

- Where are the boundaries of the first paragraph?



TMThis sentence should appear right of the image.

This sentence should appear below the image.

CSS – Position

- Update the following CSS code to move the green div to the top right corner of the gray box:

```
<div class="container">
  <p>My first paragraph.</p>
  <div class="target">Target</div>
  <p>My second paragrph</p>
</div>
```

```
.target{
width:50px;
height:50px;
background-color: forestgreen;
}
```

```
.container
{
border: 2px gray solid;
}
```

My first paragraph.

My second paragrph

Target