

# CMPT 165

## INTRODUCTION TO THE INTERNET AND THE WORLD WIDE WEB

By [Hassan S. Shavarani](#)

### *UNIT 3: STYLESHEETS*

# TOPICS

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1. Styles
2. CSS Basics
3. CSS Properties
4. CSS Selectors
5. Colors in CSS
6. Styling Pages with CSS
7. Browser Compatibility
8. Separating Content and Appearance
9. CSS Fonts [optional content]
10. Interactive Color Mixer [optional content]

## STYLES

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CSS (Cascading Style Sheets) language will give us a way to express information about the appearance of different parts of our content

CSS information (style sheets) will also be edited with a text editor, and saved in ".css" files

## WHY SEPARATE STYLE INFORMATION?

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- CSS will allow us to give all of our site's appearance information in one place
- even if we have hundreds of HTML files, they can all refer to one CSS file
- if we want to make a change in the appearance of a site, it requires only a single change
- we can also have separate people working on different parts of the site

## CSS BASICS - FIRST PROBLEM

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Let's say we want to use CSS to change the headings on the page

we want the `<h2>` elements to be *centred* (instead of the default left-justified) and in an *italic* font

# CSS BASICS - FIRST SOLUTION

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make a new file call it **firststyle.css**

```
h2 {  
    text-align: center;  
    font-style: italic;  
}
```

In this example:

- **h2 {...}** block is a CSS *rule*
- **"h2"** in the CSS is a *type selector*
- two lines in the curly braces are *CSS declarations* each of which defines a *property* and a *value*

## <LINK> TAG

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Let's link the generated CSS file to the HTML codes

```
<head>
  <meta charset="UTF-8" />
  <title>Page with a style sheet</title>
  <link rel="stylesheet" href="firststyle.css" />
</head>
```

# LETS APPLY THE CSS [\*]

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## **Page with a Stylesheet**

### **Section One**

This is the first section of the page, below the first level-two heading.

### **Section Two**

This is the next section.

\* images from [http://www.cs.sfu.ca/CourseCentral/165/common/study-guide/figures/withstyle\[1/2\].png](http://www.cs.sfu.ca/CourseCentral/165/common/study-guide/figures/withstyle[1/2].png)

## **Page with a Stylesheet**

### ***Section One***

This is the first section of the page, below the first level-two heading.

### ***Section Two***

This is the next section.



# CSS BASIC RULE SYNTAX

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```
selectorlist {  
    property: value;  
    [more property:value; pairs]  
}  
... where selectorlist is:  
    selector[:pseudo-class]  
        [::pseudo-element]  
        [, more selectorlists]
```

\* from <https://developer.mozilla.org/en-US/docs/Web/CSS/Reference>

# TEXT-ALIGN

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- text-align describes how inline content like text is aligned in its parent block element
- text-align does not control the alignment of block elements, only their inline content
- look at the demo at <https://developer.mozilla.org/en-US/docs/Web/CSS/text-align>

# FONT-STYLE

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- font-style CSS property specifies whether a font should be styled with a normal or *italic* face from its font-family
- look at the demo at <https://developer.mozilla.org/en-US/docs/Web/CSS/font-style>

# FONT-WEIGHT

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- font-weight CSS property specifies the weight (or boldness) of the font
- look at the demo at <https://developer.mozilla.org/en-US/docs/Web/CSS/font-weight>

# COLOR

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- *color* sets the foreground color value of an element's text content and text decorations
- *color* also sets the *currentcolor* value, which may be used as *border-color*
- look at the demo at <https://developer.mozilla.org/en-US/docs/Web/CSS/color>

# BACKGROUND-COLOR

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- sets the background colour (behind the text) for the element
- look at the demo at <https://developer.mozilla.org/en-US/docs/Web/CSS/background-color>

# BORDER PROPERTIES

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- used to control the border around an element (width of the line, type of line, and colour of line, respectively)
- used to set the border attributes of an element including *border-width*, *border-style*, and *border-color*
- look at the border property demos at
  - <https://developer.mozilla.org/en-US/docs/Web/CSS/border-width>
  - <https://developer.mozilla.org/en-US/docs/Web/CSS/border-style>
  - <https://developer.mozilla.org/en-US/docs/Web/CSS/border-color>

# BORDER PROPERTIES

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border properties can be used separately or as a *shorthand property border* to combine these into one line (giving the three values in any order)

```
figure {  
    border-style: solid;  
    border-width: 3px;  
    border-color: red;  
}  
  
figure {  
    border: solid red 3px;  
}
```



# LINE-HEIGHT

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- sets the amount of space used for lines, such as in text
- on block-level elements, it specifies the minimum height of line boxes within the element
- on non-replaced inline elements, it specifies the height that is used to calculate line box height
- look at the demo at <https://developer.mozilla.org/en-US/docs/Web/CSS/line-height>

# FONT-FAMILY

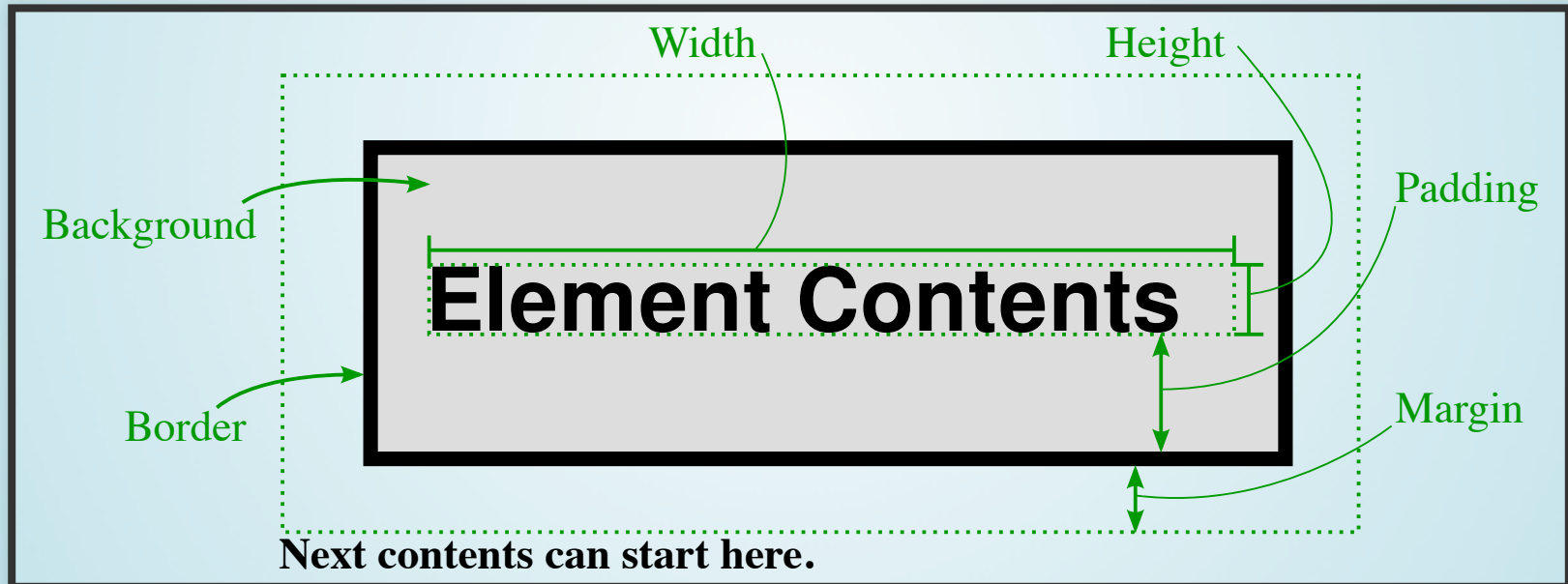
---

- specifies a prioritized list of one or more font family names and/or generic family names for the selected elements
- the list of fonts are tried in-order until the browser finds one available on the user's system
- there are six generic font families and your list must end with one of them since it's guaranteed to work
- look at the demo at <https://developer.mozilla.org/en-US/docs/Web/CSS/font-family>

# CSS BOX MODEL

## <h2>Element Contents</h2> Example

```
h2 {  
  padding: 1em;  
  border: medium dashed black;  
  background-color: grey;  
}
```



\* image from <http://www.cs.sfu.ca/CourseCentral/165/common/study-guide/figures/boxmodel.svg>

# CSS UNITS

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## **em**

The current font size: if the current text is 12 point then this will be 12 points. Another unit, an **ex** is half the text size.

## **px**

One screen pixel (dot) on the display. (Note: for some very high resolution devices, real “pixels” are very small, so this length is adjusted to be close to the size of a pixel on a traditional display.)

## **mm**

A millimetre. There are also units for centimetre, inch, etc. (Note: this is the browsers best guess, but might be innacurate depending on the scaling of the display/projector/phone/etc. For example if you display your screen on a projector, the “millimetre” suddenly becomes much larger.)

# HTML EXAMPLE CODE

```
1  <!DOCTYPE html>
2  <html>
3    <head>
4      <meta charset="UTF-8" />
5      <title>CSS Properties</title>
6      <link rel="stylesheet" href="css-prop.css" />
7    </head>
8    <body>
9      <h1>CSS Properties</h1>
10
11     <h2>Goals</h2>
12     <p>
13       This is a page that we're using to demonstrate various CSS
14       properties and techniques. Because of that, it's probably going
15       to be ugly.
16     </p>
17
18     <h2>Results</h2>
19     <p>
20       Yup, it's turning out rather ugly, but it's important to
21       demonstrate some CSS stuff. Here are some of the new things:
22     </p>
23     <ul>
24       <li>more CSS properties</li>
25       <li>the box model</li>
26       <li>the units of length used</li>
27     </ul>
28   </body>
29 </html>
```

# CSS EXAMPLE CODE

---

```
body {  
    font-family: "Helvetica", sans-serif;  
}  
h1 {  
    text-align: center;  
    font-weight: bold;  
    background-color: silver;  
    color: teal;  
    padding: 0.25em;  
}  
h2 {  
    border: medium dotted teal;  
    font-weight: normal;  
    padding: 0.1em;  
}
```

# EXAMPLE CODE RESULT

## CSS Properties

### Goals

This is a page that we're using to demonstrate various CSS properties and techniques. Because of that, it's probably going to be ugly.

### Results

Yup, it's turning out rather ugly, but it's important to demonstrate some CSS stuff. Here are some of the new things:

- more CSS properties
- the box model
- the units of length used

\* image from <http://www.cs.sfu.ca/CourseCentral/165/common/study-guide/figures/css-prop-result.png>

\* try the result at [css-prop-page.html](#)

Any Questions?