



Introduction to Internet Technology and Web Programming

Computer Science 103
Boston University
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These notes are based on the lecture notes provided by [Professor Susan Worst](#).



Lecture 6-1


BU CS 103, Spring 2019

What will be Covered Today?

- ❖ More CSS Properties
 - ✓ White Space (Margin & Padding)
 - ✓ Fonts in CSS: Font stacks and generic font families
 - ✓ Shorthand properties in CSS
- ❖ For Lab 4 Assignment
 - ✓ The universal selector
 - ✓ Div and span elements
- ❖ Discussion of assigned reading on link text

Assignments

- ❖ New Assignments
 - ✓ **HW 3** has been posted today and the due is March 4th.
- ❖ Deadlines
 - ✓ **HW 2:** due Tuesday Feb. 26 at 6pm.
 - ✓ **Lab 4 Assignment:** due Wednesday Feb. 27 at 6pm.
- ❖ Grades
 - ✓ **Lab 3 Assignment:** posted on Blackboard.
 - ✓ **Lab 4 Challenge:** posted on Blackboard.



Midterm Exam 1

- ❖ To help you for midterm exam 1, a practice exam has been posted on BB.
 - ✓ **“Course Documents” --> “3-Exams”**
- ❖ Its solution key will be posted by Monday March 4th.
- ❖ The multiple choice questions that are included in the lecture notes are another source of help for you.
- ❖ Exam includes all of the lectures from 1-1 to end of 5-2.
 - ✓ All of the lecture notes are available on BB.
- ❖ Assignments are another source of help.




Last day to drop a course without getting a **W** grade

- ❖ Tuesday 02/26 (tomorrow) is the last day to drop a course without getting a W Grade.
- ❖ I'm not suggesting that you should drop the course if you have not done a good job so far.
- ❖ but I wanted you to be aware that the course will appear on your transcript if you stay in the course after that date.



More CSS Properties



White Space or Blank Space

- ❖ **Margin** and **padding** are both ways to add whitespace (blank space) around elements.
- ❖ Both margin and padding have top, bottom, right, and left properties, for example:
 - ✓ Margin-top: 5%;
 - ✓ Margin-right: 2vw;
 - ✓ Margin-bottom: 30px;
 - ✓ Margin-left: 40em;
- ❖ Absolute or relative units can be used:
 - ✓ **10px** means an absolute length
 - ✓ **2vw** means 2 units of the width of the browser
 - ✓ **5%** means 5 percent of the width of the element

Margin vs. Padding

- ❖ The first difference requires adding a border to see.
 - ✓ A simple border:
 - Border-width: 2px;**
 - Border-style: solid;**
 - Border-color: red;**
 - ✓ Padding adds whitespace inside the border.
 - ✓ Margin adds whitespace outside the border.
- ❖ The second difference:
 - ✓ adjacent bottom and top margins "collapse" (overlap one another)
 - ✓ Padding does not collapse; it always adds.
 - ✓ Look at: <https://codepen.io/azadeh83/pen/bmqEre>

The Universal Selector

- ❖ the asterisk (*) can be used as a selector
- ❖ This selector called Universal selector and will apply the style to every selector.
- ❖ Application:
 - **"reset style sheets"** to remove browser defaults.
 - Example:
 - * { margin: 0; }**
 - It will set the margin to 0 for all selectors

Example: Universal Selector

```
<!DOCTYPE html>
<html>
  <head>
    <title> lecture 5-2 | CS 103 </title>
  </head>

  <body>
    <h1>Lecture 5-2 </h1>
    <h2>More about Cascading Style Sheets (CSS)</h2>
    <h3>CSS colors</h3>
    <p>There are 4 different method to apply colors to texts including name of the
    color, hex codes, rgb colors and hsl codes</p>
  </body>
</html>
```

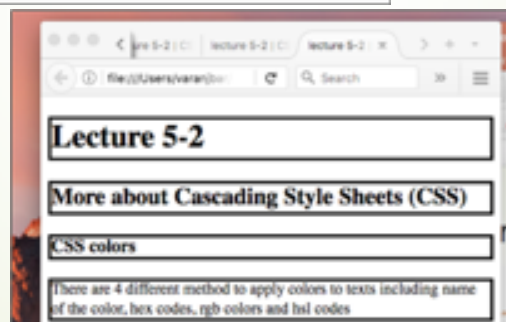


Example: Universal Selector

```
<!DOCTYPE html>
<html>
  <head>
    <title> lecture 5-2 | CS 103 </title>
    <link rel="stylesheet" type="text/css" href="web1.css">
  </head>

  <body>
    <h1>Lecture 5-2 </h1>
    <h2>More about Cascading Style Sheets (CSS)</h2>
    <h3>CSS colors</h3>
    <p>There are 4 different method to apply colors to texts including name of the
    color, hex codes, rgb colors and hsl codes</p>
  </body>
</html>
```

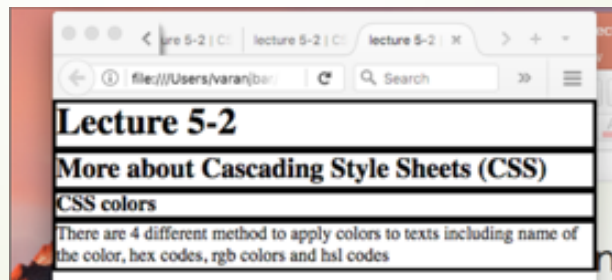
```
h1 {border-style: solid;}
h2 {border-style: solid;}
h3 {border-style: solid;}
p {border-style: solid;}
```



Example: Universal Selector

```
<!DOCTYPE html>
<html>
  <head>
    <title> lecture 5-2 | CS 103 </title>
    <link rel="stylesheet" type="text/css" href="web.css">
  </head>
  <body>
    <h1>Lecture 5-2 </h1>
    <h2>More about Cascading Style Sheets (CSS)</h2>
    <h3>CSS colors</h3>
    <p>There are 4 different method to apply colors to texts including name of the
    color, hex codes, rgb colors and hsl codes</p>
  </body>
</html>
```

```
* {margin: 0;}
h1 {border-style: solid;}
h2 {border-style: solid;}
h3 {border-style: solid;}
p {border-style: solid;}
```



Comments in CSS

- ❖ The stuff inside the `/* */` marks are CSS comments. This allows you to enter notes into CSS that will not be interpreted.

```
body { font-size: 62.5% /* this is a comment */ }
```

Font stacks and generic font families



Font Stacks

- ❖ A font stack includes a list of fonts, **not a single font**.
- ❖ The browser will use the first one that it finds.
- ❖ Font stacks should end with a **generic font family**.
- ❖ If the browser can't find any of the fonts in the list, it will choose a font in that family.

`p { font-family: Arial, "Helvetica Neue", Helvetica, sans-serif }`

Sample Font Stack

```
p { font-family: Arial, "Helvetica Neue", Helvetica, sans-serif }
```

- ✓ If the browser sees the "p" element, it will first look on the user's computer to see if it has Arial.
- ✓ If not, it will look for Helvetica Neue.
- ✓ If not, it will look for Helvetica.
- ✓ If not, it will use whatever the computer has designated as its generic sans-serif font.
- ❖ Choose fonts that look alike, to give the user a similar experience

Font Stack Coding Notes

- ❖ If the font name is more than one word, you must enclose it in either double quotation marks or single quotation marks (for example: , **"Helvetica Neue"**).
- ❖ The **generic font family** is always one word, and must **never** be enclosed in quotation marks (or it will not work).

Generic Font Families

- ❖ The generic font families defined in CSS are:
 - Serif
 - Sans-serif
 - Monospace
 - Fantasy
 - Cursive
- ❖ Generic font families represent a **type** of font. They are not fonts themselves.

Specifying Fonts with CSS

- ❖ CSS allows you to specify the font (**font-family** property) for any selector
- ❖ The font you choose must be installed on the computer of the people visiting your website for them to see it
- ❖ Fonts installed on the computer are called "**system fonts**"
- ❖ Macs and PCs have different system fonts installed (as do Unix computers)
- ❖ The challenge:
 - ✓ **giving users a comparable visual experience no matter what type of computer they are using.**

Which Fonts Are on Which Computers?

- ❖ The website CSSFontStack (<https://www.cssfontstack.com>) gives us data about which fonts are used on which types of computers.
- ❖ The home page lists fonts with their prevalence on Windows and Mac machines.
- ❖ Fonts are grouped by families that *roughly* correspond to the generic font families used in CSS

A question about ID and Class selectors: **How Does the Cascade Affect This?**

- ❖ If an element uses both an ID attribute and a class attribute, and their style rules conflict, which rule will apply?

`<p class="blue" id="green">Will this paragraph be blue or green?</p>`

`.blue { color: blue; }`

`#green { color: green; }`

- ❖ Answer: **green**

Shorthand Properties in CSS

- ❖ CSS can get very long and to prevent this some properties can be written in shorthand form (combined or condensed).
- ❖ One example is properties related to the **border**.

Shorthand Method #1: All Four Sides

- ❖ If you are specifying **border-style**, **border-color**, or **border-width**, you can specify all four sides of the box at once.
- ❖ Specify in this order: **top right bottom left**. No punctuation in between.
- ❖ Example:

```
ul{Border-color: red green yellow blue;}
```

- 
- Breakfast
 - Lunch
 - Dinner

Shorthand Method #2: Two Sides

- ❖ If the **top** and **bottom** values of a border property are the same, AND the **right** and **left** values of the border property are the same, you can write it this way:

```
ul{ border-color: red green}
```

- 
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- ❖ The first value represents the top and bottom. The second value will affect left and right.

Shorthand Method #3: All properties for the same border

- ❖ If you are specifying just one side of the box, you can set all three border properties (**style**, **color**, **width**) at once.

- ❖ The properties can be listed in any order.

- ❖ Example:


```
ul{border-left: 5px solid red;}
```

- 
- Breakfast
 - Lunch
 - Dinner

Putting It All Together

- ❖ If all four sides of your border are the same, you can specify the whole border in one short statement.

```
ul{ border: red solid 2px;}
```

- 
- Breakfast
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- ❖ All of these methods also work with **margin** and **padding**.
When we say

Margin: 5vw

- ❖ It applies to all four sides.

About Lab 4 Assignment

- ❖ What to turn in?
 - Turn in the **URLs** for the **HTML** and **CSS** files for a sample internal page of your website project
 - Use a real title, site name, tag line, menu items, content, and footer

About Lab 4 Assignment

- ❖ Everything in your page needs to be responsive to the size of the screen including:
 - ✓ Images (**max-width** vs **width**)
 - ✓ Font-size (**using calc()**)
 - ✓ Margin & padding (**Margin auto**, **max-width** , **relative units** , **box-sizing**)
 - ✓ Navigation (the demonstration video in BB for Lab 4 Assignment)
- ❖ You need to learn some new techniques:
 - ✓ Div and span elements

Div and Span Elements

- ❖ Unlike the HTML elements such as paragraphs, lists, headings, the **<div>** and **** elements do not convey any meaning or information about the content of a page.
- ❖ They are used only to **group** elements (**<div>**) or **identify parts of elements** (****) for styling or interactivity

Div Element

- ❖ A block-level element
- ❖ Can be used to put consecutive HTML elements into one group
- ❖ Can hold other block-level elements, such as paragraphs, lists, and tables
- ❖ Usually used with a class or ID attribute for styling or interactivity (JavaScript)
- ❖ We are going to use it for main content area:
 - after **nav** tag and before **footer** tag

Div Element Example

- ❖ Sample HTML

```
<div class="blogpost">  
  <h3>Weather for Monday</h3>  
  <p>by Harvey Leonard</p>  
  <p>Cloudy, with temperatures in the 60s.</p>  
</div>
```

- ❖ Sample CSS

```
.blogpost { margin-left: 5em; }
```


Span Element

- ❖ An inline element
- ❖ Used to single out part of an element
- ❖ Cannot be used around block-level elements, only inside them
- ❖ Usually used with a class or ID attribute for styling or interactivity (JavaScript)

Span Element Example

- ❖ Sample HTML
`<p>Written by`
- ❖ Sample CSS
`.author { text-transform: uppercase; }`

Notes about div and span elements

- ❖ The <div> tag is frequently used in combination with the id and class attributes to create CSS layouts
- ❖ As and <div> don't convey meaning, only use when you cannot use an HTML element as a selector.

Link Text (for HW3)

`Google site`

- ❖ Link text is the text between the <a> and the tags.
- ❖ Your link text has impacts on **security**, **usability**, **accessibility**, and **findability**.
- ❖ **Security**
 - Make sure your link text accurately describes where someone will go when they click on a link.
 - ✓ to build credibility and keeps your users' trust.
 - ✓ phishing emails do the opposite.
- ❖ **Usability**
 - People skim web pages by jumping from link to link.
 - ✓ Clear link text gives a good idea of what a page is about.
 - ✓ Ambiguous link text (e.g., "click here") does not.

Link Text (from assigned reading)

`Google site`

❖ Findability


- Search engines use link text to help determine what the page you are linking to is about.
- ✓ Good link text on your pages improves the findability of the pages you link to.

❖ Accessibility


- Screen readers provide the ability to tab from link to link. Many screen readers provide a way to see only the links on a page.
- ✓ Writing better link text improves the usefulness of these tools.

Rules of Good Link Text

1. Accurately describe the destination of the link.
2. Make it as long as necessary, but no longer.
3. Avoid uninformative phrases (e.g. "click here")
4. Avoid using URLs as link text unless they are very short and easily understood.
5. If possible, put the most important information first.



Review from Last Lecture




To set the color of the text on the page,
use the CSS property

- A. font-color
- B. background-color
- C. text-color
- 😊 D. Color




what does the "**a**" control in **rgba** or **hsla** color code?

- A. Which color is formed
- B. The darkness/lightness of the color
- C. How vivid the color is
- 😊 D. The opacity of the color




The CSS selector for an ID attribute of "first" is written

- A. .first
- B. ?first
- C. &first
- 😊 D. #first



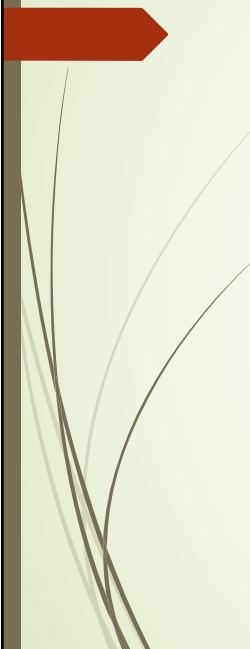
The section of a web page containing the website name and the tag line is the:

- A. Head
-  B. Header
- C. Heading



Which is not a block-level element by default?

- A. <div>
- B. <h1>
-  C.
- D. <tr>



Which is not an inline element by default?

- 😊 A. `<hr>`
- B. ``
- C. ``
- D. `<th>`