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| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 🔑 **Essential** 🔑 | | | |  | 🏆 **Enhanced** 🏆 | | | |
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**Score: \_\_\_\_\_**

**29 – Front End: CSS**

**Activities**

COMP256 – Computing Abstractions

Dickinson College

Spring 2022

Prof. Grant Braught

**Name:**

**Introduction:**

Today’s class introduced Cascading Style Sheets as a way of defining and specifying styles that the browser will use when rendering HTML elements. We saw how to write CSS rules to define styles and saw how selectors (element, class and id) are used to determine to which HTML elements a style will be applied. We concluded with a little discussion of how CSS libraries and frameworks provide abstractions that help facilitate the creation of web pages. Today’s activities will give you some practice writing some basic CSS rules and applying them to elements. Then you’ll get to experiment just a little bit with a modern CSS library called Bootstrap.

**CSS Ideas:**

🔑 1. In class we have used the metaphor of a house to explain the roles of HTML and CSS in web applications. Invent your own metaphor and write a few sentences of your own words explain the roles played by these technologies.

🔑 2. What are a few advantages of separating the content and structure (HTML) of a document from its presentation or style (CSS)? Feel free to read a few web pages on this topic, but then express your answer in your own words.

**CSS Vocabulary:**

🔑 3. Consider the following CSS rule:

.fancy { font-family: cursive; }

Identify each of the following parts of this rule:

|  |  |  |  |
| --- | --- | --- | --- |
|  |  |  |  |
|  | Selector |  |  |
|  | Declaration Block |  |  |
|  | Declaration |  |  |
|  | Property |  |  |
|  | Value |  |  |
|  |  |  |  |

🔑 4. In class we saw three types of selectors.

a. Identify each of the following selectors as an element selector, class selector or id selector. Note: You do not need to worry about what any of the properties or values mean.

|  |  |  |  |
| --- | --- | --- | --- |
|  |  |  |  |
|  | .footer { text-align: right; } |  |  |
|  | h3 { color: blue; } |  |  |
|  | #login { display: none; } |  |  |
|  |  |  |  |

b. Briefly explain how you were able to identify the type of each selector in part a.

|  |  |  |  |
| --- | --- | --- | --- |
|  |  |  |  |
|  | Element |  |  |
|  | Class |  |  |
|  | ID |  |  |
|  |  |  |  |

**Styling HTML:**

Consider the HTML source code shown below. In this section you’ll use that page to gain some practice with using CSS to style rendered HTML.

<html>

<head>

<title>Blues Music</title>

</head>

<style>

</style>

<body>

<h1>The Blues</h1>

<p id="intro">Blues is a music genre and musical form which was originated in the Deep South of the United States around the 1860s (Wikipedia).</p>

<h2>Blues Songs:</h2>

<ol>

<li>Memphis Blues - W.C. Handy</li>

<li>Crazy Blues - Mamie Smith</li>

<li>Pine Top Boogie - Pine Top Smith</li>

</ol>

<h2>Blues Quotes:</h2>

<p class="quote">The blues was bleeding the same blood as me. - B. B. King</p>

<p class="quote">Every bad situation is a blues song waiting to happen. - Amy Winehouse</p>

</body>

</html>

🔑 5. Using our web development environment (see HW #28) add a file named blues.html to the comp256 folder and copy and paste the above html source into it. Point your browser at : <http://localhost:8080/comp256/blues.html> and paste a screenshot of the rendered page below.

6. For each of the following questions, give **a CSS rule** (selector and declaration block with declarations) that when added to the highlighted style element above accomplish each of the following styling tasks. Be sure to use the page you created in #5 to test that your rules work.

🔑 a. Make the content of the introductory paragraph (“Blues is a music genre…”) appear in blue text. Hint: That paragraph has an id attribute, so you’ll want to use an id selector.

🔑 b. Make the two quotations at the bottom of the page appear in cursive type with a background color of your choosing. Hint: The paragraphs for those quotes have the same class attribute, so you’ll want to use a class selector.

* You can find a reference for all of the valid CSS color names here: <https://www.w3schools.com/colors/colors_names.asp>. You can also specify custom colors using a variety of color models (E.g. like RGB we saw earlier in the Data Abstractions unit): <https://developer.mozilla.org/en-US/docs/Web/CSS/color>.

🏆 c. Make both of the level two headings appear with an underline style of your choice. Hint: These headings are both <h2> elements, so you can use an element selector.

* While we did not talk about how to do underlining, you can find information about it in the CSS Text Decoration section of the W3 Schools tutorials: <https://www.w3schools.com/css/css_text_decoration.asp>.

🏆🏆 d. Change the quotations so that they appear with a thick double border on the left edge to further highlight them. Sort of like:



Hint: Use your favorite search engine to look into CSS borders and CSS Padding.

🔑 7. There is a CSS property named display that can be applied to any HTML element. Use your favorite search engine to help you answer the following questions.

a. The display property can have the values shown below (among others), what do each of these value mean?

|  |  |  |  |
| --- | --- | --- | --- |
|  |  |  |  |
|  | none |  |  |
|  | inline |  |  |
|  | block |  |  |
|  | initial |  |  |
|  |  |  |  |

b. Add to the style block in blues.html a CSS rule that uses the display property to hide all of the HTML elements that have a class attribute set to the value invisible. I.e. Write a CSS rule that uses a *class selector* for a class named invisible. Paste the CSS rule that you wrote below.

c. Use your invisible class from part a to hide the list item for Crazy Blues. Be sure to test your code and your rule to be sure it works. Paste the modified list item for Crazy Blues below.

Note: It may seem silly to define elements on a page that are not visible, but we’ll see when we get to working with JavaScript that this is a useful and commonly used technique for making pages interactive by showing and hiding information.

**Styling parts of a Page with <div> and <span>:**

Sometimes you will want to style multiple elements at the same time or style part of an element but not the whole thing. For example, you may want to put a border around both a header (<h2>) and a list (<ul>). Or you might want to style just a few words or a sentence within a paragraph, but not the entire paragraph. The <div> element is used to group other elements that can then be styled together (e.g. the header and the list). The <span> element is used to style a part of another element (e.g. a few words or a sentence within a paragraph.)

Read the short piece *Span vs. Div: The Difference Explained in 1000 Words or Less* by Jamie Juviler to get a feel for div and span and to see a few examples of their use:

* <https://blog.hubspot.com/website/span-vs-div>

🔑 8. Add the following CSS rule to the <style> element in your page from questions #5-7. The class defined by this rule will cause a border to be drawn around the element(s) to which it is applied.

.greenridge {

border-style: ridge;

border-color: lightgreen;

border-width: thick

}

There is nothing to hand in for this question. Just add the CSS rule to the <style> element so that it can be used in the following questions.

🔑 9. Use a <div> element to draw a border around both the heading “Blues Songs:” and the ordered list of songs that appears below it. Hint: Nest the <h2> and the <ol> elements in a <div> and then apply the style to the <div>. Paste the <div> element that you added and its contents (i.e. <h2> and the <ol> elements) the below.

🔑 10. Use <span> elements to draw a border around just the name (e.g. B. B. King) associated with each of the quotes at the bottom of the page. Paste the source code for the quotes including the <span> elements that you added below.

Note 1: You should not use <div> and <span> if other tags will do. For example, do not use a <span> to make part of a paragraph bold faced. In that case, it would be considered better style to use the <strong> tag instead.

Note 2: The page you have been creating is not intended to be a good example of how to style a page – it is quite unattractive. But it does provide good practice using CSS rules with <div> and <span> elements without adding too much overhead to the homework.

**CSS Libraries/Frameworks:**

As described in class there are many CSS Libraries and Frameworks that are used in web development. Among other things, these libraries and frameworks provide a lot of CSS rules with class selectors that can be applied to HTML elements in any page. In this section you will get a glimpse of Bootstrap, which is one of these libraries.

🏆 11. A CSS library can be included into a page by placing a link element in the head of the document. For example, including the link element below in the head will import the Bootstrap CCS library into the page. Note that the link element is an *empty element*.

<link rel="stylesheet" href="https://cdn.jsdelivr.net/npm/bootstrap@4.6.0/dist/css/bootstrap.min.css">

a. Using the custom page that you created at the end of homework #28, add a link element to the <head> so that it includes the Bootstrap CSS library.

There is nothing to turn in for this question, just add the Bootstrap library so that you can use it in the following questions.

b. Add a class attribute with the value text-capitalize to one of the elements in your page. What effect does the Bootstrap text-capitalize class have on how the HTML element is rendered?

c. Add a class attribute with the value rounded-circle to the image element in your page. What effect does the rounded-circle class from Bootstrap have on the rendered HTML image element?

d. Take a screenshot of the rendered HTML page including the Bootstrap styling that you applied in parts a-c and paste it below.

🏆 12. Browse through the following reference of all of the CSS classes that are defined by Bootstrap:

* <https://www.w3schools.com/bootstrap/bootstrap_ref_all_classes.asp>

Experiment with a few of them using the “Try It” button to see what they do. Note: Some of the examples will be a little more involved and complex that what we have covered. There may be new HTML tags you haven’t seen. You may also notice that often multiple classes can be set for an element. In any case, you should still be able to see the general structures we’ve discussed and work with them.

a. Pick one or more of the Bootstrap elements that you experimented with and add them to your page. Paste the HTML source code for the Bootstrap styled element(s) that you added here.

b. Give a screenshot of the rendered HTML with the Bootstrap Styled elements that you added here.

Optional: To help me improve and scope these activities for future semesters please consider providing the following feedback.

a. Approximately how much time did you spend on this activity outside of class time?

b. Please comment on any particular challenges you faced in completing this activity.