LAB#4 WEB PROGRAMMING

CST8285 F2022

ALGONQUIN COLLEGE

to transform hopes
and dreams into
lifelong success

LAB OBJECTIVE

The objective of this lab is to get familiar with the following:

1- Create a dynamic content using JavaScript

Earning

To earn your mark for this lab, each student should finish the lab's requirements, submit your lab on the Brightspace and demonstrate the working code to the instructor.

STATEMENT OF THE PROBLEM:

Read the entire lab instruction before starting.

This lab is to be completed on BrightSpace any lab worksheets handed in will be discarded. Carefully follow the procedures outlined in this lab worksheet. **If at any time you are unsure or are having problems, consult your lab instructor**.

Part I: Making the Web Dynamic

In this lab you will take the provided JavaScript starter code and create a HTML5 compliant HTML page as well as a CSS file to format the page. You will be creating an inspirational quote generator that will use a provided an array data structure full of inspirational quotes. In the provided JavaScript starter code, you have a constant array of quotes.

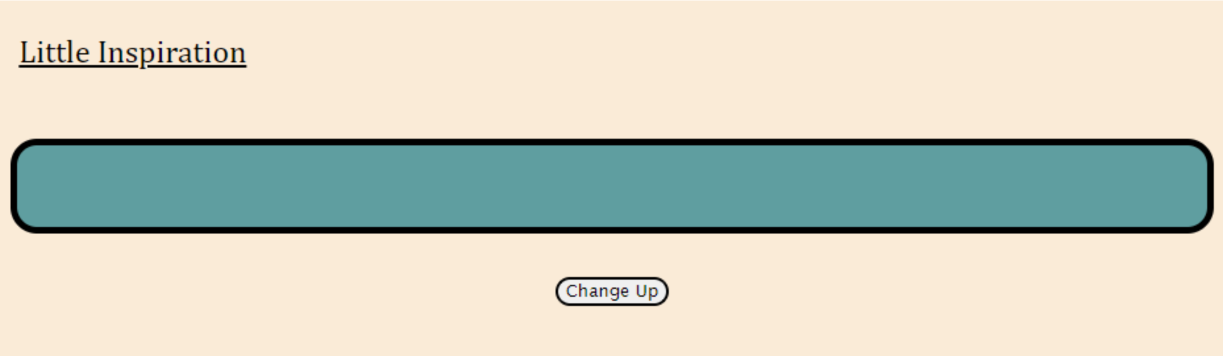
Part II: Building the Webpage

1. Create a new file called `inspiration.html` and add the usual HTML5 boilerplate, including `meta` data to indicate you are the author of the code. The browser tab for your page should simply say "inspirational" and you should include a `header` on your page that says : "Inspirational Quotes".
2. Create a uniquely named `div` for the quote and inside that `div` make another uniquely named `div` for the quote text and under that a third uniquely named `div` for the author. You should have two uniquely identified divs inside of the first `div`. This way we can use CSS for format the whole quote and also treat the quote text and author names separately. These two inner divs should be empty as we will target them with our JavaScript to add our text in between their opening and closing tags.
3. Create a centered `button` beneath these divs and add text such as "Get Quote" to the button. We will use the `onclick` attribute to manually call a JavaScript function to grab a random quote from array.
4. Create a new file called `inspiration.css`, link this file to your HTML page.
5. Target the `body` element with the desired font stack for your page. You can use a

different font for each of the elements, but a good rule of thumb is to use one font for the page and only use a second one if you want to bring attention to a small portion of the page (such as a `header`). I chose a `serif` font for the title (`header`) , quote text, and author. I also chose a `sans serif` font for the button text. You can choose any fonts you like, but you must use a **full** font stack for at least the `body` element.

6. In the CSS file add a selector pointing to the outer `div` that will hold our quotation. Add a `border` with `15pt` rounded corners to this `div` and give it a pleasant background colour.

7. Format the elements that are on your page so that it looks something like the image below. We will deal with the quote and author soon enough and you will likely want to tweak the CSS as you build the page.



Part III: Adding the JavaScript

8. In the HTML file add an `onclick=` attribute to the button element and give it the value of a JavaScript function that you will create. I called mine `setInspiration()`.

9. Open the provided `inspiration.js` file and start coding after the array block. You are going to create a function with the same name as you used in the `onclick` of the button element. This function takes no parameters and will use the global constant `inspirations` as its pool of quotations.

10. Because arrays in JavaScript always start with an offset of `0` we can generate a random number based on the number of quotations in our array. This number will be from `0` to one less than the number of quotations. You will need to know a few things to write the code that dynamically generates this number:

    a. In JavaScript an array is an object that has a member value of `length` that returns the number of objects in an array.

    b. To generate a random number, you use the `random()` function that is part of the `Math` object. This `random()` function will generate a random number from `0` to `1` that is never equal to `1`. We can multiply this result by the total number of choices we want to select from and will generate a number from `0` to one less than our target number.

c. Because `random()` gives us floating-point (real) numbers we use the function `floor()` (also in the `Math` object) to return the largest integer that is less than or equal to the given floating-point number. It is typical to wrap the results of `random()` in a `floor()` function.

11. After you generate a random number you can use this number as an offset to get the quote and author from the array. Put these values into the `innerText` value of the two divs inside your quotation div using simple DOM traversal.
12. Make sure you link your `script` file to your HTML document.
13. Now you can test this function using a browser by pressing the button on your page. If your code is correct, then you should get a new random quote with every click of the button.
14. When you are able to generate a quote add embedded code to your HTML document that **calls** the function you created once when the page is loaded. Remember that the function needs to see the targeted elements in the DOM. This call will ensure that you always have a quote in on the page even before you click the new quote button.
15. Format the quotation (CSS) so that the text is nice and large, well centered in the outer div, and that the author's name is in italics as well as right justified inside the outer div. You can play with the padding and margins to make the quotations look great.
16. Submit your code to an HTML validator (https://validator.w3.org/) and take a screen shot of a properly validated HTML page, do the same with a CSS validator (https://jigsaw.w3.org/css-validator/).

Part II: Submitting your Work

When your code is complete, make sure you zip up all the files (**lab4.zip**) created in this lab including a copy of any images that you have used in your growing website.

- **Your modified version of the starter code.**
- **css** stylesheet
- **html** webpage
- **screenshots** of both HTML and CSS validation showing successful validation of code**.**
- **any images** used

Other Important Requirements

- Demo and justify your work and provide correct answer to professor questions.
- The work will be graded zero if you do not demo it on time, even if uploaded.