ST. CLAIR
COLLEGE

WEB 230

Final Project
Building a Calculator

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In this project you will write the JavaScript code to create a calculator. Good thing is that everyone knows how the calculator works. It is a challenging project, give yourself lots of time to complete it.

1. You are provided with an HTML, and CSS files.. Look at these files to understand how to use them if needed based on your code. (Note: You can add only different selectors (id, class) in HTML and cannot make any changes to CSS.) Create your own .js file. **All your work will be done in only to JS file.**

2. Connect files and this is what you should see. All files must have your name in the file's name. You are ready to start.

3. Apply these changes :
   a. Change the background colour of operation buttons (*, /, +, -), make each button a different colour (your choice).

   b. Change the font colour for all number buttons (include decimal "." button, to blue.
   c. Change the background colour of clear "C" button, to black. Also the font colour to white.

4. Add three Buttons before "C" (clear) button as follow:
   a. MS -- Memory Store
   b. MC – Memory Clear
   c. MR – Memory Restore

   All three buttons must have grey background and white font.
   After you apply the changes(with your own colour selection), you should see something like this:

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5. Record any clicking of buttons and display its value on the screen.

    Suggested steps: **(Note: You can come up with your own solution**)

    a. Create variables that will store targeted DOM elements, input/outputs
    b. Add an event listener to retrieve data from all buttons when they are clicked. The handler, **function(event)** can be used to display the value of the button (number or operation) on the screen. You can use **event.target.dataset.num** to return the value and it should be stored as a new variable added to screen value.

6. Perform calculations (*, /, +, -) when clicking on the equal "=" button,

    Suggested steps:

    a. Add an event listener for the equal button. When you click the button, the handler **function(event)** can be used to calculate the expression using **eval(screen.value)** method. Assign the answer that you obtain to the screen value. (Note: eval() is a function/method that evaluates expressions. Like: eval("2+7").)

7. Display a message such as "Please Enter a Value", when clicking the equal "=" button and nothing is displayed on the screen.

8. Make the memory functional; storing, clearing and retrieving data.

    Suggested steps:

    a. Add event listeners for:
        i.   MS→ Store the data from screen to memory;
        ii. MC → clear the data in the memory;
        iii. MR → Recall the memory value to screen.

9. Clear data in screen by clicking on "C" button.

10. Text appearing on the calculator screen must be aligned to the right.

11. When the mouse hovers over a button, change the background colour of the button. (your choice of colour). Ensure the colour changes back when the mouse cursor is removed.

The mark for this project is 25% of your mark. Partial marks will be given. 10% of mark will be based on variable unique naming and proper code formatting. Identical projects will be marked "0". **There is no late submission**. **Zip all files together in one.**

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