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**Capstone Project 1: Web Calculator**

**Project Requirements:**

1. Build a Calculator that will take mouse and keyboard inputs.
2. Basic Calculator functions: Add, Subtract, Multiply and Divide.
3. Includes transaction logging.
4. Includes memory logging.
5. Includes in-memory calculation (memory-plus and memory-subtract).
6. Function to clear latest entry.

**Design Considerations:**

1. Web calculator must retain its layout and be responsive throughout all the various screen sizes; from mobile phone screen to tablet to laptop to desktop.
2. Calculator function keys, memory keys, AC (All Clear) and Calculate (‘=‘ sign) will be differentiated by colour codes.
3. Two input sources; mouse click on the virtual keypad and input via computer keyboard.
4. Keyboard will have a clean and simplistic layout.
5. All function keys are to be located above the numeric keypad.
6. Transaction log to be permanently displayed until cleared by user using the AC button.
7. Memory log will be permanently displayed until cleared by user using the MC button.
8. Display screen for input and result are located permanently above the numeric keypad.

**Future Improvements:**

1. Add trigonometry functions.
2. Transaction and Memory log screens to be made scrollable.
3. Further improvements to the layout of the calculator; eg. allowing users to put/change ‘skins’ as needed.

**Learning from Project:**

1. Better understanding of using CSS to layout the Calculator elements; display, keys and log.
2. Better understanding of using Bootstrap to build a responsive Calculator design.
3. Better understanding of Javascript in performing the calculator logic and also to simultaneously display input on both the display and transaction log areas.
4. Still need more exposure to understand the use of event listeners and their syntax.
5. Using the internet resources to find solutions to roadblocks encountered during the development of the project, and how to adapt these codes for my own program’s use.
6. Applied sessionStorage to save data for later recall. Understanding the benefits and constraints of localStorage vs sessionStorage.