This is the documentation of the 'Calculator App' that was created by Maitrey Prajapati while working as 'Blockchain Intern' at SoluLab Inc.

Purpose: The purpose of this documentation is to provide knowledge about the infrastructure and workflow of the 'Calculator App'(from here on 'app').

Requirements: To run this app one would require a working internet connection and an internet browser(IE 9+, Chrome 4+, Firefox 2+,Safari 3.1+,Opera 10.5+).

Summary: This application was created as part of Intern Project by Maitrey Prajapati. The app is a working calculator which performs following operations.

I. Double Operand Operations
   - Addition
   - Subtraction
   - Multiplication
   - Division
   - Exponent

II. Single Operand Operations
   - Square
   - Cube
   - Square Root
   - Factorial

III. History

Workflow: The app works in an internet browser and can be used to perform calculations. The calculator also comes with a special toggle button which can be used to see last 10 operations successfully performed in the calculator. The working of the calculator is as follows.

- App when opened shows digit '0' in the display bar which will be converted into other digits as soon as digits on the calculator is pressed.
  - The limit of digit input is 10 digits only or any number between (-10^{10}) and (10^{10}) exclusive.
  - All the floating point numbers could only be added up to 10 digits in total including number before and after floating point.

- For single operand operation, button according to the operation has to be pressed.
    - In case of an error, that error would be shown in a pop up box and the calculator display will turn into digit ‘0’. Further calculations can be performed then after.
    - Otherwise in case of successful operation the answer will be shown in the display and that operation will be stored in the history log.

- For two operand operation,button according to operation has to be pressed.
    - The display will convert into digit ‘0’ which will be changed according to the digits one clicks.Standard rule of 10 maximum digit will also be applied for second digit. After entering the digit, the equals(‘=’) button has to be pressed to get the answer.
    - In case of successful operation and answer length staying less than 11 digits the answer will be shown in the display and history will be stored in the history logs.
    - In case of unsuccessful operation the second digit will be cleared and display will be converted to show the digit ‘0’. One will be able to re-enter the second digit without modifying the first digit.
- History button can be used to see the history of last 10 successful operations if there are any.The entries will be stored in order of latest to earliest. Refreshing the page will lead to clearing the history.
    - If the more than 10 operations are performed then the latest operation will be stored in the entry 1 and entry of earliest of the 10 stored operation will be deleted.
- The ‘AC’ and ‘C’ button can be used for deletion of the digits.
    - The ‘AC’ button will delete the equation altogether including the operation you chose to go with and both digits.
    - The ‘C’ button will only erase the digit the user is in at the moment.
        - In case if user is currently entering first digit and clicks the ‘C’ button, the first digit will be cleared and can be re-entered.
        - In case if the user is entering second digit and clicks the ‘C’ button, the digit2 will be cleared and display will be converted into ‘0’ and can be re-entered without modifying digit1.

Examples: Following examples were performed in the calculator. The operation alongside their output is shown in following table.

Example 1:

DIGIT	OTHER BTN	DISPLAY Before	DISPLAY After	ANSWER
10		0	10	
	+	10	0	
20		0	20	
	=	20	30	30
	+	30	0	
40		0	40	
	=	40	70	70
	AC	70	0	0

Example 2:

DIGIT	OTHER BTN	DISPLAY Before	DISPLAY After	ANSWER
10		0	10	
	!	10	3628800	3628800
	+	3628800	3628800	
100		3628800	3628800	
	=	3628800	3628900	3628900
	^2	3628900	**Alert,** 3628900	
	/	3628900	0	Answer becomes digit1
1000		0	1000	
	=	1000	3628.9	
	AC	3628.9	0	Digit1 = 0 Digit2 = 0

Technical Information:

Languages Used

- HTML5
- CSS3
- Javascript

Libraries Used

- Math (Included in JS-Package)
- String (Included in JS-Package)

Frameworks/External Libraries/API Used

- Bootstrap 4 (Via CDN)
- Google Font API (Via CDN)

Github Repository(Private) : https://github.com/MaitreyPrajapati/solulabcalc
LinkedIn : https://www.linkedin.com/in/MaitreyPrajapati/