Calculator Application

PLANNING AND DESIGN DOCUMENT

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Planning and Design Document

Wireframe

The wireframe is a potential visual guide to a successful application. The wireframe displayed in the figure(Fig1) has been used to design the Calculator Application.

Fig1: Wireframe

Testing Scenarios

The calculator has been tested with various aspects to minimize the possibilities of bugs and maximize the efficiency.

The code has been tested with all possible operations(addition, subtraction, division, multiplication) and the results displayed were accurate.

TestCase	Possible Outcome	Actual Outcome
10 digit display	Users can view the input and output of their calculations for 10 digits.	Users can easily view the input and output of their calculations for 10 digits.
Decimal Point	Users can easily add a decimal while entering a number	Users can easily add a decimal while entering a number
Toggle Button	This button changes the sign of the current value(+/-)	This button changes the sign of the current value(+/-)
Working Memory	User can easily add a value to memory(M+), subtract a value(M-), recall the value(MR) and clear the memory(MC)	User can easily add a value to memory(M+), subtract a value(M-), recall the value(MR) and clear the memory(MC)
Arithmetic Operations	Addition, Subtraction, Multiplication, Division is performed accurately	Addition, Subtraction, Multiplication, Division is performed accurately
Calculations with more than two Operand (3+4+5)	The application will display the result of the first operation (3+4=7) and continue to display the result of the subsequent operations.	The application will display the result of the first operation (3+4=7) and continue to display the result of the subsequent operations.

Table1: Testcases

Nielsen's Usability Heuristics

This application has been developed in a way that it satisfies all the heuristics. The calculator displays proper human readable results and all the exceptions have been handled and the errors will be displayed in the human readable language. All the arithmetic standards have been performed accurately i.e. the addition button will perform the addition, multiplication will perform multiplication and so on. The clear button will clear all the current data of the calculator and the application can be started as a fresh application giving users control and freedom.

The application is developed so that there are no chances of any errors during the execution. The users will always be informed of the calculations done, their will always be visibility of system status. The design is minimalized and no irrelevant information is provided in the application. A proper designed help and documentation is provided in the readme file attached with the application.

References

[1]"Java isDigit() Method", *www.tutorialspoint.com*, 2018. [Online]. Available: https://www.tutorialspoint.com/java/character_isdigit.htm. [Accessed: 07- Oct- 2018].

[2]G. Loganathan and G. Loganathan, "Android: Simple Calculator", *Java Helps*, 2018. [Online]. Available: https://www.javahelps.com/2015/03/android-simple-calculator.html. [Accessed: 04- Oct- 2018].

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