Software Requirements Document
A Multi-Function Scientific Calculator

1. Introduction

This document describes the behavior of a simple multi-function scientific calculator application intended for use on both Windows and Macintosh personal computers.

2. Environment and Interface Requirements

2.1. Hardware

The application shall run on both IBM-compatible and Macintosh Hardware

2.2. Software

The application shall be written in Java The application shall use only standard Java library functions(basic arithmetic). The application shall be usable on any system which supports the compiler, and shall not require any particular hardware or software.

2.3. Operating System

The application shall be run on Windows, macOS and Linux based systems.

2.4. Human Interfaces

The application shall function in a similar way as a regular calculator.

2.4.1. Input

The user shall input the number(s) when the application prompts to do so. The application shall ask the user to press the buttons available on the UI or the application shall allow the user to enter the numbers manually through his/her keyboard.

2.4.2. Output

The application shall display the results on the appropriate output area.

3. Major Function Requirements/Description

3.1 Input

The input function shall accept the input from the user via the terminal, validate it and send it to the appropriate function to calculate the output. All user interaction with the program shall take place through this function and all the input data shall be stored in a variable of a compatible data type. The input function can be written in the form of a basic Scanner.

3.2 Calculate

This function will accept the correct input from the input function(through arguments) and will perform the operations requested by the input.

3.3 Output

This function will display the results of the calculate function. Results shall be displayed under the following conditions.

- When the equals(=) sign button is pressed(GUI).
- When the enter key is pressed(terminal).

4. Response to undesirable events

4.1. Illegal Input Sequence

Appropriate error message shall be printed, if an illegal sequence is detected.

4.2. Division By zero

Division by zero shall be detected by the program and an appropriate error message is printed

4.3 Overflow/Underflow

Overflow and underflow doesn't need to be detected

5. Constraints

The value of x for tan(x) shall be input in radians.

6. Potential changes

- Other functions may be added.
- Other display formats, such as scientific notation may be added.
- The visual appearance of the calculator may be updated.