

**INTERNATIONAL SCHOOL**

**GROUP PROJECT 1**

**CMU-CS 246 TIS**

**USER INTERFACE DESIGN DOCUMENT**

Version: 2.0

**SIMPLE CALCULATOR APPLICATION**

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**Mục Lục**

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1. **INTRODUCTION**
2. **PURPOSE**

* Document the design of the user interface for the functions of the Calculator Application.
* Be the primary document driving the implementation of the user interfaces.
* Introduce interface design for the reader, including background, content information display, and command buttons.

1. **SCOPE**

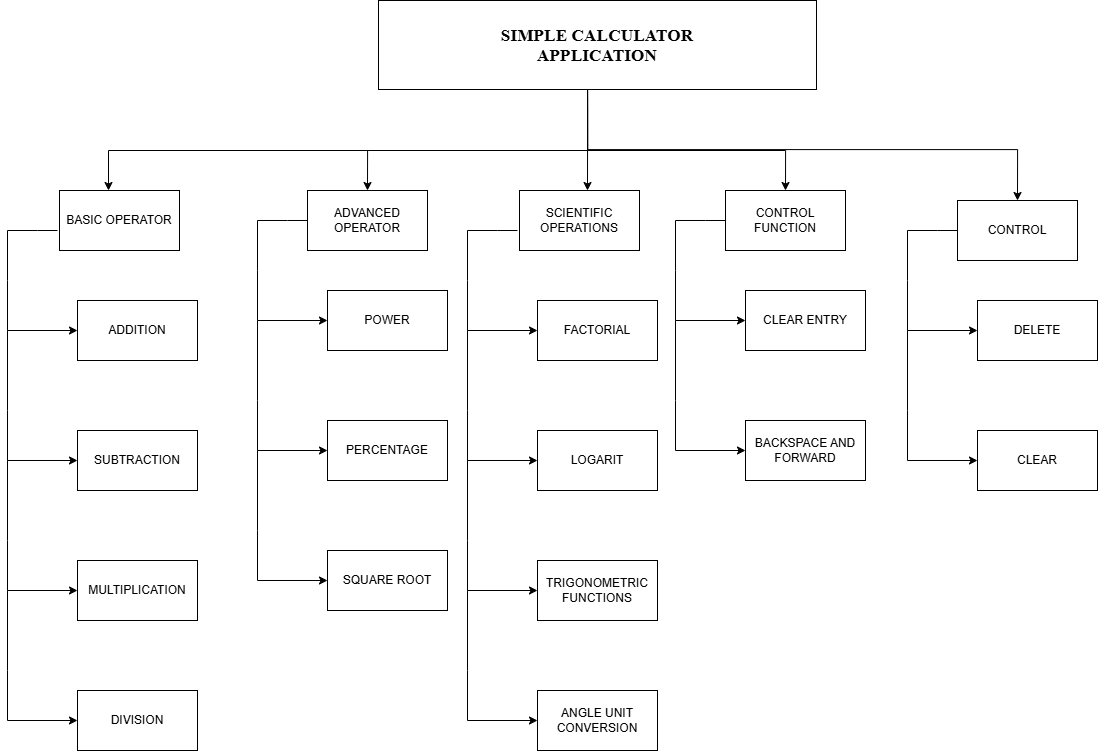
* This document helps to better understand the interface of the Calculator Application, detailing specification components and functions of the system.
* With this document, the development team can understand the structure and composition to create a consistent and complete application.
* Overview of the stages and modules of the software to create a fully functional interface.

1. **AUDIENCE**

This document is intended for the following audiences:

* **Technical reviewers**, including:
  + Scrum Master
  + Product Owner
* **Implementers**, including:
  + Developers
  + Testers

1. **LIST OF USER INTERFACE**
2. **BUSINESS FUNCTION DIAGRAM:**



1. **Web App**

|  |  |  |
| --- | --- | --- |
| **User Interface ID** | **UI Name** | **Description** |
| UI-01 | Calculator Main Page | This page provides the main calculator interface where users can perform arithmetic and advanced operations. |
| UI-02 | Basic Operations Page | This page allows users to perform addition, subtraction, multiplication, and division. |
| UI-03 | Advanced Operations Page | This page provides additional functionalities such as exponentiation, square root, and percentage calculations. |
| UI-04 | Memory Functions Page | This page enables users to store, recall, and clear stored values. |
| UI-05 | History Page | This page displays a log of previous calculations in the current session. |
| UI-06 | Settings Page | This page allows users to customize calculator settings, such as precision and theme. |
| UI-07 | Clear & Refresh Page | This page provides options to clear input or refresh the session. |
| UI-08 | Factorial (n!) | Adds the functionality to calculate the factorial of a number (n!). |
| UI-09 | Logarithm Functions | Adds buttons for logarithmic calculations: log₁₀(x) and ln(x). |
| UI-10 | Trigonometric Functions | Adds buttons for trigonometric functions: sin(x), cos(x), tan(x), and cot(x). |
| UI-11 | Angle Unit Conversion | Adds functionality for converting between degrees and radians. |
| UI-12 | Clear Entry (CE) Button | Adds a button to clear the current entry without affecting the entire calculation. |
| UI-13 | Backspace (←) and Forward (→) | Adds buttons for backspace (←) to delete the last character and forward (→) to restore or add back the last deleted character. |

1. **DESCRIBE USER INTERFACE**
2. **CALCULATOR INTERFACE**

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|  |  |  |  |
| --- | --- | --- | --- |
| **ID** | **Condition** | **Control Type** | **Target** |
| 1 | Press | Input text | Display input and calculation results |
| 2 | Press | Button | Power function (x^y) |
| 3 | Press | Button | Square root function (√) |
| 4 | Press | Button | Percentage function (%) |
| 5 | Press | Button | Memory Recall (MR) |
| 6 | Press | Button | Memory Add (M+) |
| 7 | Press | Button | Memory Subtract (M-) |
| 8 | Press | Button | Delete last input (DEL) |
| 9 | Press | Button | Clear all input (C) |
| 10 | Press | Button | Digits 0-9 for number input |
| 11 | Press | Button | Arithmetic operations (+, -, \*, /) |
| 12 | Press | Button | Equals button (=) to execute calculations |
| 13 | Press | Button | Decimal point (.) for floating-point calculations |
| 14 | Press | Button | Factorial (n!) to calculate the factorial of a number |
| 15 | Press | Button | |  | | --- | |  |  |  | | --- | | Logarithm (log₁₀(x)) to calculate the base 10 logarithm of a number | |
| 16 | Press | Button | |  | | --- | |  |  |  | | --- | | Natural Logarithm (ln(x)) to calculate the natural logarithm of a number | |
| 17 | Press | Button | Trigonometric functions: sin(x), cos(x), tan(x), cot(x) |
| 18 | Press | Button | Angle unit conversion: Degrees ↔ Radians |
| 19 | Press | Button | Clear Entry (CE) to delete the current entry without affecting the calculation |
| 20 | Press | Button | Backspace (←) to delete the last character input |
| 21 | Press | Button | |  | | --- | |  |  |  | | --- | | Forward (→) to restore or add back the last deleted character | |