EECS 348 Group 10

Web Calculator for University of Kansas Students

Test Plan

Version 1.0

Revision History

Date	Version	Description	Author
11/29/2023	1.0	Initial version	Jacob Kice

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Test Plan

1. Purpose

This Test Plan specification document for the Web Calculator project provides the list of test cases for the calculator module. Each test case consists of an Identifier, a Description, the Input, the Expected Output, the Actual Outputs, and the Results. The purpose of the test cases is to test the functionality of the calculator module. This includes testing valid and invalid inputs. Valid inputs consist of inputs such as the basic operators, the PEMDAS order of operations, parentheses-enforced order of operations, empty parentheses, and empty input. Invalid inputs include missing operators, missing operands, mismatched parentheses, invalid characters, and division by zero. Supplemental testing of the website interface consists of testing the functionality of each input button on the calculator, and testing the operability of each url link included in the website.

2. Test case identifiers

The test case identifiers are found in the Identifier column in the supplemental Test Cases spreadsheet. The identifiers are based on the general type of test that the test case belongs to, as shown below.

A – Addition

S – Subtraction

M – Multiplication

D – Division

Z – Zero

G – General

3. Test items

The purpose of each test case is outlined in the Description column in the supplemental Test Cases spreadsheet and describes the general functionality or input condition that is being tested by each test case.

4. Input specifications

The input specifications are listed in the Input column of the Test Cases spreadsheet. For this test plan for the calculator module the input for each test case consists of the string that is to be passed into the calculator module for evaluation.

5. Output specifications

There are two types of output specifications, which are listed in the Expected Output and Actual Output columns of the Test Cases spreadsheet. The Expected Output shows the intended, proper, output of each test case; the mathematical result of the input equation of the input is valid, or the relevant error message if the input is invalid. The Actual Output shows the output, either numerical result or error message, produced by execution of the test case. A final column in the Test Cases spreadsheet, Result, compares the Actual Output to the Expected Output and reports whether or not the Actual Output matches the Expected Output. Further, both the Actual Output and Result columns are present twice, once for tests conducted on the calculator as a standalone entity, and once for tests conducted through the website on the integrated calculator module.

6. Environmental needs.

Executing this test plan requires a device with a web browser and an internet connection.