The Company Company

EECS 348 - Calculator Application

User's Manual

Version <2.0>

Revision History

Date	Version	Description	Author
<05/12/24>	<1.0>	<The first draft of the Arithmetic Evaluator>	< Sionne, Zeidan, Jett, K >
<11/12/2024>	<2.0>	< Added more to the examples and inserted GitHub links>	<Sionne, Jett, Meg, Ash, K>

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Test Case

1. Purpose

The purpose of this User Manual is to help the user understand how to handle and run the program. It will contain information on how to properly format inputs, setting up and compiling the program, troubleshooting errors, and a glossary of information.

2. Introduction

The software created is an arithmetic calculator written in C++ code. The program is meant to handle mathematics such as addition, subtraction, multiplication, division, exponents, modulo, and take in parentheses. This program features built-in mathematical precedence such as PEMDAS.

3. Getting started

Installation:

1. Make sure that the device in use is equipped with a Compiler that can run C++ code.
2. Download the Arithmetic Expression Evaluator code from the SRC file.

Usage:

1. After running the code, type a valid arithmetic expression and click enter.
2. Make sure that the expression entered is using supported operators.

Operators:

1. \+ Addition e.g. 3 +5 or 3+5
2. \- Subtraction e.g. 5 - 2 or 5-2
3. * Multiplication e.g. 10*2 or 10 * 2
4. / Division e.g. 3/1 or 3 / 1
5. % Modulo e.g. 4%3 or 4 % 3
6. ^ Exponentiation e.g. 2^3 or 2 ^ 3

4. Advanced Features

- PEMDAS
  - Mathematic Evaluation that follows the precedence, parentheses, exponents, multiplication, division, addition, and subtraction.
- Unary
  - Unary operations is mathematics is when you give a sign such as – or + in front of parentheses to show a numeric value's sign.
    - Example: -(4) = -4

5. Troubleshooting

When it comes to the program there are a few cases of inputs that will cause the program to fail.
Examples of incorrect inputs:

- Divide by 0
  - Dividing by Zero will give you the error message, "Error: Divide by Zero."
- Variables
  - The program doesn't support creating variables so no inputs should have any alphabetical numbers. Will give the error, "Error: Invalid expression."
- Modulo by 0
  - Doing Modulo by 0 will give you the error message, "Error: Modulo by Zero."
- Missing Parenthesis

- When writing a in a function if you use parenthesis make sure to have all parenthesis completed (2+2) for example. If not the program will fail with the error message, "Error: Mismatched parentheses

6. Examples

Addition: +

- 2 + 2
- = 4

Subtraction: -

- 1 – 2
- = - 1

Multiplication: *

- 2 * 2
- = 4

Division: /

- 4 / 2
- = 2

Exponents: ^

- 5 ^ 2
- = 25

Parentheses: ()

- (2 + 2) / 4
- = 1

Modulo: %

- 5 % 2
- = 1

7. Glossary of terms

PEMDAS – PEMDAS is a term that stands for parenthesis, exponents, multiplication, division, addition, and subtraction

8. FAQ

A few questions that may be asked about the calculator program can be found here.

- What if the code isn't running/ not properly compiling.
  - Make sure that you have correctly downloaded, or copy ensure you have correctly downloaded or copied and pasted the code from the GitHub file. Even if you accidentally remove a small line of code, it could easily completely break the file.
- What if certain inputs are resulting in an error.
  - Check your inputs with the given input troubleshooting and test cases to see if your input is incorrect or formatted incorrectly.
- Where can I find more information about Arithmetic Expiration Evaluator?
  - For more information about the software check out the GitHub repository for documentation.