Kansas Instruments

Compiler Expression Parser

User’s Manual

Version 1.0

Revision History

Date	Version	Description	Author
12/12/24	1.0	User Manual for the Compiler Expression Parser	Nevan Snider
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Test Case

1. Purpose

The Compiler Expression Parser works similar to how normal calculators work, where the user is able to input a mathematical expression and receive the answer to the equations.

2. Introduction

The program has the ability to run a variety of mathematical operations, such as:

- Addition
- Subtraction
- Multiplication
- Division
- Modulo
- Exponentiation

As well as the ability to use parentheses to manually prioritize order of operations.

To run the software, run the makefile by opening a console and typing “make”. This will then create a binary file named “cli” when ran will launch the program.

3. Getting started

Upon running the software, the user is greeted with an empty text box where they are free to enter any mathematical expression

The following operations can be achieved with their respective operators:

- Addition: +
- Subtraction: -
- Multiplication: *
- Division: /
- Modulo: %
- Exponentiation: **

4. Advanced features

The program automatically keeps a history of the users previously entered expressions. The user is able to go back in the history by one at a time by typing “BACK”.

The user is able to end the program at any time by typing “END”.

5. Troubleshooting

If you are getting an error indicating that your input is invalid, make sure your expression doesn’t contain any handing operators (i.e., 5+ where the + doesn’t have a number following it) and that it only contains strictly valid characters (all numbers and the listed supported operators).

6. Examples

- Addition: 5+5
- Subtraction: 5-5
- Multiplication: 5*5
- Division: 5/5
- Modulo 5%5
- Multiple Operations with Parentheses: (5+3)*12-(32+3)

7. Glossary of terms

Operators: A symbol used to denote a specific mathematical action (i.e., + for addition).

Expression: A line of characters used to calculate a specific value (i.e., 3*10).

8. FAQ

➢ **Q**: How can I exit the program?

✓ **A**: Type: END

➢ **Q**: How can I go back in the history?

✓ **A**: Type: BACK

➢ **Q**: Why does my expression lead to an unintended answer?

✓ **A**: Double check that your order of operations are correct by using parentheses when necessary.