
<Team 19>

<Arithmetic Expression Evaluator>

Test Case

Version <1.0>

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<document identifier>	

Revision History

Date	Version	Description	Author
<12/12/24>	<1.0>	<Created and completed test case document>	<Kyle Fleming>

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Test Case

1. Purpose

The purpose of this document is to define a test case for verifying the parsing and evaluation of arithmetic expression based on the project requirements

NOTE: for sections 2, 3, 4, and 5: It is OK to use a table like the one proposed in class, also suggested on the project part 5 description.

2. Test case identifier

Test Case ID: TC01-Expression_Evaluation

3. Test item

This test case will evaluate the functionality of the arithmetic expression evaluator based on the following features as outlined in the Requirement Specification and Design Specification documents:

1. Parsing arithmetic expressions
2. Numeric constant evaluation
3. Operator precedence and parenthesis handling
4. support for operators: +, -, *, /, %, **

4. Input specifications

Input ID	Description	Example
IN01	Valid expression	1 + 2
IN02	Expression with operator precedence	3 + 4 * 2
IN03	Expression with parentheses	(1 + 2) * (3 + 4)
IN04	Expression with mismatched parentheses	1 + (2 + 3
IN05	Expression with invalid syntax	1 + - 2
IN05	Expression with divide by zero	1 / 0

5. Output specifications

Input ID	Expected Output
IN01	3
IN02	11

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IN03	21
IN04	Mismatched parentheses error message
IN05	Invalid syntax error message
IN05	Divide by zero error message

6. Environmental needs

6.1.1 Hardware *(nothing particular for the arithmetic expression project)*

Specify the characteristics and configurations of the hardware required to execute this test

6.1.2 Software *(nothing particular for the arithmetic expression project)*

Specify the system and application software required to execute this test case. This may include system software such as operating systems, compilers, simulators, and test tools. In addition, the test item may interact with application software.

6.1.3 Other

N/A

7. Special procedural requirements

Describe any special constraints on the test procedures that execute this test case. These constraints may involve special set up, operator intervention, output determination procedures, and special wrap up.

8. Intercase dependencies

List the identifiers of test cases that must be executed prior to this test case. Summarize the nature of the dependencies.