Calculator Project

Test Cases

Version <1.0>

Revision History

| **Date** | **Version** | **Description** | **Author** |
| --- | --- | --- | --- |
| 12/1/23 | 1.0 | Started Test Cases | Barret Brown, Ethan Doughty, Minh Vu, Adam Berry, Bisshoy Bhattacharjee |
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Test Cases

# Test Case 1

## Test Case ID: TC01

## Test Case Description: Test basic operation

## Test Data: 5+5

## Expected Results: 10

## **Actual results: 10**

* 1. **Pass/fail status: Pass**

# Test Case 2

## Test Case ID: TC02

## Test Case Description: Test negative operation

## Test Data: -(-2\*7)

## Expected Results: 14

## Actual results: 14

* 1. **Pass/fail status: pass**

# Test Case 3

## Test Case ID: TC03

## Test Case Description: Test negative/nested operation with fractional components

## Test Data: -((-2)\*7+1/5)

## Expected Results: 13.8

## Actual results: 13.8

* 1. **Pass/fail status: pass**

# Test Case 4

## Test Case ID: TC04

## Test Case Description: Test for divide by 0 error

## Test Data: 5/0

## Expected Results: Error

## Actual results: Error: Division by zero

* 1. **Pass/fail status: Pass**

# Test Case 5

## Test Case ID: TC05

## Test Case Description: Test expanded operation with divide by 0 error after operation

## Test Data: (-(5+(10-2)\*20))/(10-12+2)

## Expected Results: Error

## Actual results: Error: Mismatched Operands

* 1. **Pass/fail status: Pass**

# Test Case 6

## Test Case ID: TC06

## Test Case Description: nested signs in parentheses

## Test Data: (-(-(-(-3))))+2

## Expected Results: 5

## Actual results: 5

* 1. **Pass/fail status: pass**

# Test Case 7

## Test Case ID: TC07

## Test Case Description: Mismatched Parentheses

## Test Data: ((3)+2

## Expected Results: Error

## Actual results: Error: Unmatched parentheses

* 1. **Pass/fail status: Pass**

# Test Case 8

## Test Case ID: TC08

## Test Case Description: Invalid Operator Sequence

## Test Data: ((2-)1+3)

## Expected Results: Error

## Actual results: Error: Mismatched Operands

* 1. **Pass/fail status: Pass**

# Test Case 9

## Test Case ID: TC09

## Test Case Description: Invalid Characters

## Test Data: 5@10

## Expected Results: Error

## Actual results: Error: Invalid Characters

* 1. **Pass/fail status: Pass**

# Test Case 10:

## Test Case ID: TC10

## Test Case Description: Invalid Characters

## Test Data: Hello

## Expected Results: Error

## Actual results: Error

* 1. **Pass/fail status: Pass**

# Test Case 11

## Test Case ID: TC11

## Test Case Description: No operators involved

## Test Data: 1

## Expected Results: 1

## Actual results: 1

* 1. **Pass/fail status: Pass**

# Test Case 12

## Test Case ID: TC12

## Test Case Description: Missing Operand

## Test Data: ((4+5\*2)+(-))

## Expected Results: Error

## Actual results: Error: Mismatched Operands

* 1. **Pass/fail status: Pass**

# Test Case 13

## Test Case ID: TC13

## Test Case Description: Combine Unary Operators with parentheses

## Test Data: -(6.8)

## Expected Results: -6.8

## Actual results: -6.8

* 1. **Pass/fail status: pass**

# Test Case 14

## Test Case ID: TC14

## Test Case Description:

## Test Data: +2^(-3)

## Expected Results: 0.125

## Actual results: .125

* 1. **Pass/fail status: pass**

# Test Case 15

## Test Case ID: TC15

## Test Case Description: Extraneous Parentheses

## Test Data: ((((5+5))))+((((((2))))))\*2

## Expected Results: 14

## Actual results: 14

* 1. **Pass/fail status: pass**

# Test Case 16

## Test Case ID: TC16

## Test Case Description: Nested Parentheses with Exponents

## Test Data: ((5\*2+2)^(-10+2\*4/2.5+6))

## Expected Results: .1370 (Rounded to 4 digits)

## Actual results: .1370

* 1. **Pass/fail status: pass**

# Test Case 17

## Test Case ID: TC17

## Test Case Description: Mixed Operators

## Test Data: (4\*(3+2)%7-1)/2

## Expected Results: 2.5

## Actual results: Error: 2.5

* 1. **Pass/fail status: pass**

# Test Case 18

## Test Case ID: TC18

## Test Case Description: No operators involved negative number

## Test Data: -3

## Expected Results: -3

## Actual results: -3

* 1. **Pass/fail status: pass**

# Test Case 19

## Test Case ID: TC19

## Test Case Description: 0 exponent

## Test Data: 5^0

## Expected Results: 1

## Actual results: 1

* 1. **Pass/fail status: Pass**

# Test Case 20

## Test Case ID: TC20

## Test Case Description: 0 to exponent of 0

## Test Data: 0^0

## Expected Results: 1

## Actual results: 1

* 1. **Pass/fail status: Pass**

# Test Case 21

## Test Case ID: TC21

## Test Case Description: Blank Input

## Test Data:

## Expected Results: Error

## Actual results: Error

* 1. **Pass/fail status: Pass**

# Test Case 22

## Test Case ID: TC22

## Test Case Description: Nested operators

## Test Data: (+(-(+(-(+(-(+(-(-(((3))-5))))))))))\*5+2

## Expected Results: 12

## Actual results: 12

* 1. **Pass/fail status: pass**

# Test Case 23

## Test Case ID: TC23

## Test Case Description: Divide by no numerator

## Test Data: /5

## Expected Results: Error

## Actual results: Error

* 1. **Pass/fail status: Pass**

# Test Case 24

## Test Case ID: TC24

## Test Case Description: Nested operators no operand

## Test Data:(-(-(-)))

## Expected Results: Error

## Actual results: Error

* 1. **Pass/fail status: Pass**

# Test Case 25

## Test Case ID: TC25

## Test Case Description: Every operator (Test Pemdas)

## Test Data: 5-5+5/5\*5^5+(5+5)

## Expected Results: 3135

## Actual results: 3135

* 1. **Pass/fail status: Pass**

# Test Case 26

## Test Case ID: TC26

## Test Case Description: Negative multiplication

## Test Data: 4\*-4

## Expected Results: -16

## Actual results: -16

* 1. **Pass/fail status: pass**

# Test Case 27

## Test Case ID: TC27

## Test Case Description: Floating point addition

## Test Data: .1+.2

## Expected Results: .3

## Actual results: 0.3

* 1. **Pass/fail status: Pass**

# Test Case 28

## Test Case ID: TC28

## Test Case Description: Floating Point divide by 0

## Test Data: 5/(2.5-2.5\*2+2.5)

## Expected Results: Error

## Actual results: Error: division by zero

* 1. **Pass/fail status: Pass**

# Test Case 29

## Test Case ID: TC29

## Test Case Description: Floating point multiplication

## Test Data: 5.5\*10.2

## Expected Results: 56.1

## Actual results: 56.1

* 1. **Pass/fail status: Pass**

# Test Case 30

## Test Case ID: TC30

## Test Case Description: Rounding of digits to 4 places

## Test Data: (10/64-2/64.2)

## Expected Results: 0.1251 not (0.125097352) as it is rounded to 4 digits

## Actual results: 0.1251

* 1. **Pass/fail status: Pass**