
Whatever Co.

Whatever Calculator

Test Case

Version 1.0

Whatever Calculator	Version: 1.0
Test Case	Date: 05/12/24
TCV1	

Revision History

Date	Version	Description	Author
05/12/24	1.0	Defined test cases and expected output	All Team Members

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Test Case

1. Purpose

This Test Case Specification document for the Whatever Calculator defines a series of test cases for the various components of the system that should be tested. The document outlines the specific items and features to be exercised, including their input specifications, expected outputs, and test items.

The sections of the test case specification are ordered in the specified sequence. Additional sections may be included at the end as necessary. If any content within a section is referenced from another document, a reference to that material will be provided in place of the corresponding content. Any referenced material will be attached to the test case specification or made accessible to users of the case specification.

2. Test Case Table

Test Case ID	Description	Test data	Output specification	Actual output	Pass/Fail
TC001	Basic Addition	$3 + 4$	7	7	Pass
TC002	Subtraction with Parentheses	$8 - (5 - 2)$	5	5	Pass
TC003	Multiplication and Division	$10 * 2 / 5$	4	4	Pass
TC004	Exponentiation	$2 ** 3$	8	8	Pass
TC005	Mixed Operators	$4 * (3 + 2) \% 7 - 1$	5	5	Pass
TC006	Complex Add w/ Extraneous Parentheses	$(((2 + 3))) + (((1 + 2)))$	8	8	Pass
TC007	Mixed Operators with Extraneous Parentheses	$(((5 * 2) - ((3 / 1) + ((4 \% 3))))$	6	6	Pass
TC008	Nested Parentheses with Exponents	$(((2 ** (1 + 1)) + ((3 - 1) ** 2)) / ((4 / 2) \% 3))$	4	4	Pass
TC009	Combination of Extraneous and Necessary Parentheses	$(((((5 - 3))) * (((2 + 1))) + ((2 * 3))))$	12	12	Pass

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TC010	Extraneous Parentheses with Division	$((9 + 6)) / ((3 * 1) / (((2 + 2))) - 1)$	-60	-60	Pass
TC011	Combining Unary Operators with Arithmetic Operations	$+(-2) * (-3) - ((-4) / (+5))$	6.8	6.8	Pass
TC012	Unary Negation and Addition in Parentheses	$- (+1) + (+2)$	1	1	Pass
TC013	Negation and Addition with Negated Parentheses	$-(-(-3)) + (-4) + (+5)$	-2	-2	Pass
TC014	Unary Negation and Exponentiation	$+2 ** (-3)$	0.125	0.125	Pass
TC015	Combining Unary Operators with Parentheses	$- (+2) * (+3) - (-4) / (-5)$	-6.8	-6.8	Pass
TC016	Unmatched Parentheses	$2 * (4 + 3 - 1$	Error: Invalid arithmetic expression	Error: Invalid arithmetic expression	Pass
TC017	Operators Without Operands	$* 5 + 2$	Error: Invalid arithmetic expression	Error: Invalid arithmetic expression	Pass
TC018	Incorrect Operator Usage	$4 / 0$	Error: Division by 0	Divide by 0 error	Pass
TC019	Missing Operator	$5 (2 + 3)$	Error: Invalid arithmetic expression	Error: Invalid arithmetic expression	Pass
TC020	Invalid Characters	$7 \& 3$	Error: Invalid arithmetic expression	Error: Invalid arithmetic expression	Pass

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TC021	Mismatched Parentheses	$((3 + 4) - 2 + (1))$	Error: Invalid arithmetic expression	Error: Invalid arithmetic expression	Pass
TC022	Test unary	$4 + -5$	-1	-1	Pass
TC023	Combination of Exponentiation and Modulo	$5 ** 2 \% 3$	1	1	Pass
TC024	Floating-Point Constants	$3.5 + (2.1 * 4.2) - (6.6 / 3.3)$	10.32	10.32	Pass
TC025	Extremely Long Expression	$1 + 2 + 3 + \dots + 100$	5050	5050	Pass
TC026	Too many operators	$3 + + 4$	Error: Invalid arithmetic expression	Error: Invalid arithmetic expression	Pass
TC027	No Input	""	Error: Cannot pop from empty stack	Error: Cannot pop from empty stack!	Pass
TC028	Basic subtraction	$5 - 6$	-1	-1	Pass
TC029	Basic multiplication	$2 * 4$	8	8	Pass
TC030	Basic division	$8 / 4$	2	2	Pass
TC031	Basic power	$3 ** 2$	9	9	Pass
TC032	Basic modulus	$10 \% 9$	1	1	Pass
TC033	Zero divided by a number	$0 / 5$	0	0	Pass
TC034	Modulo by zero	$5 \% 0$	Modulus by zero error	Modulus by zero error	Pass
TC035	Zero modulo	$0 \% 5$	0	0	Pass
TC036	Modulo for floats	$5.5 \% 2.2$	1.1	1.1	Pass
TC037	Unary for 0	-0	0	0	Pass
TC038	TC010 with no spaces within the parentheses	$((9 + 6)) / ((3 * 1)) / (((2 + 2))) - 1)$	-60	-60	Pass

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TC039	Exponentiation with basic division	$(2^{**}2) / (2)$	2	2	Pass
TC040	Including variables	$(x + 5) - 2$	Error: Invalid arithmetic expression	Error: Invalid arithmetic expression	Pass
TC041	Multiple expressions that cannot be evaluated	10 14	Error: Cannot Reduce Expression To A Single Value!	Error: Cannot Reduce Expression To A Single Value!	Pass
TC042	Unary with expression in parenthesis	$-(4+3)$	-7	-7	Pass
TC043	Multiple unaries in a row	---1	-1	-1	Pass