Huang and Co.

Boolean Expression Evaluator

Test Case

Version 1.0

Revision History

Date	Version	Description	Author
27/04/24	1.0	Completed tasks and reviewed	Andrew Huang, Elizabeth Miller, Hunter Long, Katherine Swann, Keaton Xu

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Test Case

1.   Purpose

This Test Case Specification document for the Boolean expression evaluator (B.E.E.) lists a table of black box test cases to test its functionality. The functional areas of the evaluator that the test cases cover, as well as the results of the test cases, are recorded to determine what areas of the evaluator need to be changed.

Test Case ID	Test Case Description	Test Input	Expected Results	Actual Results	Pass/Fail Status
TC-01	Basic unit of evaluation (AND gate)	T & F	False	False	Pass ▾
TC-02	Parentheses handling around single variable	(T)	True	True	Pass ▾
TC-03	Basic unit of evaluation (NOT gate)	!T	False	Error	Fail ▾
TC-04	NOT evaluation of single variable within parentheses	!(T)	False	Error	Fail ▾
TC-05	Using other variables	**X = T** **Y = F** X | Y	True	False	Fail ▾
TC-06	Doubled parentheses	((T & F))	False	False	Pass ▾
TC-07	Two expressions	(T & F) | (F | T)	True	True	Pass ▾
TC-08	Uninitialized variable	H	Invalid Expression	False	Fail ▾
TC-09	Double NOT gates in front of expression	!!T	True	True	Pass ▾
TC-10	Missing open parentheses	T & F)	Invalid Expression	Invalid Expression	Pass ▾
TC-11	Invalid operator (logical)	T>F	Invalid Expression	Invalid Expression	Pass ▾

TC-12	Nested Parentheses expression	((T@F)) | (F$F)	True	True	Pass ▾
TC-13	Basic unit of evaluation (OR gate)	T|F	True	True	Pass ▾
TC-14	Basic unit of evaluation (NAND gate)	T@F	True	True	Pass ▾
TC-15	Basic unit of evaluation (XOR gate)	T$F	True	True	Pass ▾
TC-16	Incomplete expression	T |	Invalid Expression	Invalid Expression	Pass ▾
TC-17	Empty input	Invalid Expression	Invalid Expression	False	Fail ▾
TC-18	Variables only	T T F	Invalid Expression	Invalid Expression	Pass ▾
TC-19	Expression with excess spaces	T & F	False	False	Pass ▾
TC-20	Missing close parentheses	(T & F	Invalid Expression	Invalid Expression	Pass ▾
TC-21	Incorrect variable instantiating	**X = T** **X = F** X | X	Invalid Expression	True	Fail ▾
TC-22	Invalid operator (arithmetical)	T+T	Invalid Expression	Invalid Expression	Pass ▾
TC-23	Single variable expression (T)	(T|T) & T	True	True	Pass ▾
TC-24	Single variable expression (F)	(F|F) & F	False	False	Pass ▾
TC-25	Nested parentheses	((T & F) | T)	True	True	Pass ▾
TC-26	Empty parentheses	()	Invalid Expression	Invalid Expression	Pass ▾
TC-27	Variable with length greater than 1	**X1 = T** **X2 = F** X1 | X2	Invalid Expression	Weird print statements	Fail ▾

TC-28	Expression with multiple operators in a row	T ||F	Invalid Expression	Invalid Expression	Pass ▾
TC-29	Insufficient parentheses	T | F | T	Invalid Expression	Invalid Expression	Pass ▾
TC-30	Expressions containing NOTS between operator and variables	T & !F	True	True	Pass ▾

2. Test case identifier

Reference the above table.

3. Test item

Reference the above table.

4. Input specifications

Reference the above table.

5. Output specifications

Reference the above table.

6. Environmental needs

6.1.1 *Hardware*

N/A

6.1.2 *Software*

N/A

6.1.3 *Other*

N/A

7. Special procedural requirements

N/A

8. Intercase dependencies

N/A