Cryptic Coders

Boolean Logic Simulator

Test Case

Version <1.0>

Revision History

Date	Version	Description	Author
24/04/2024	1.0	Added table of test cases with input, description, and expected output	Aiden Burke and Mark Maloney
24/30/2024	1.1	Finished Table of test cases, actual output &* Pass/Fail	Ty Farrington & Brett Suhr

Table of Contents

Test Case

1. Purpose

The purpose of the Test Case section for the Boolean Logic Simulator is to test the correctness of the Simulator. The purpose of each individual test is to test the functionality of the code. This will include testing valid and invalid inputs to test actual output versus the expected output.

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 Cases

Test Case #	Expression	Description	Expected Output	Actual Output	Pass/Fail
1	(T & T)	Testing AND operator	True	True	Pass
2	(T & F)	Testing AND operator	False	False	Pass
3	(T | F)	Testing OR operator	True	True	Pass
4	!T	Testing NOT operator	False	False	Pass
5	!F	Testing NOT operator	True	True	Pass
6	(T & F) @ T	Testing AND and NAND operators	True	True	Pass
7	T $ F	Testing XOR operator	True	True	Pass
8	T $ T	Testing XOR operator	False	False	
9	(T | F) & F	Testing OR and AND operators	False	False	Pass
10	(T @ F) | (F @ T)	Testing NAND and OR operators	True	True	Pass
11	! (T & T)	Testing NOT and AND operator	False	False	Pass
12	((T & F) | T) $ (F @ T)	Testing AND, OR, XOR and NAND operators	True	True	Pass
13	! (F @ T)	Testing NOT operator with a NAND expression	False	False	Pass
14	(T $ T) & F	Testing XOR and AND operator and parentheses	False	False	Pass
15	! F | ! T	Testing OR operator with both operands negated	True	True	Pass
16	((((T | F) & F) | (T & (T | F))) @ (T @ T)) $ (! (T | F))	Testing all 5 operators	True	True	Pass

17	(F $ ((T | F) & (F @ (T | F)))) | (T $ (T & F))	Testing XOR, AND, OR and NAND operators	False	False	Pass
18	((! (T $ F)) & (T @ T)) | ((F | T) & (T $ T))	Testing all 5 operators	False	False	Pass
19	(((T @ T) $ (F @ T)) | ((!T) & (T | (!T))))	Testing all 5 operators	True	True	Pass
20	((F @ T) $ (T | (F & F))) & (T & (T @ (!T)))	Testing all 5 operators	False	False	Pass
21	T ? T	Testing invalid operators	Error	Error	Pass
22	(T &	Testing expression with one operand for an operator (AND) that requires 2 operands	Error	Error	Pass
23	T && & F	Testing invalid operands	Error	Error	Pass
24	X | Y	Testing invalid operands	Error	Error	Pass
25	a & b	Testing invalid operands	Error	Error	Pass
26	(T	Testing invalid operands	Error	Error	Pass
27	! (T & T)	Testing NOT and AND operators	False	False	Pass
28	(F @ T)	Testing NAND Operator	True	True	Pass
29	! & T	Testing invalid operands	Error	Error	Pass
30	(T |)	Testing Invalid operands	Error	Error	Pass
31	T = !(T & T)	Testing invalid operands	Error	Error	Pass
32		Empty Expression	Error	Error	Pass
33	True |F	Testing invalid formatting	Error	Error	Pass
34	True!	Testing invalid NOT formatting	Error	Error	Pass
35	(T | F) $ F	Combines OR operation with NOR operation	True	True	Pass

3. Environmental needs

3.1.1 Hardware

N/A

3.1.2 Software

The program can run on all platforms as long as Node.js is installed (Windows, Linux, macOS).

3.1.3 *Other*

N/A

4. Special procedural requirements

N/A

5. Intercase dependencies

N/A