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# **SQUISHY CATS**

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**LogiCalc**  
**Test Case**  
**Version 1.0**

LogiCalc	Version: 1.0
Test Case	Date: 04/25/2024
D3	

## Revision History

Date	Version	Description	Author
04/25/2024	0.1	Document initialization	Olivia

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## Test Case

### 1. Purpose

This Test Case Specification document for the LogiCalc Boolean Expression Calculator defines the test cases for items that should be tested.

### 2. TC01

Test Case 1	
Test Case ID	TC01
Description	Verify that the calculator correctly evaluates a Boolean expression.
Test Data	(T \$ T) & F
Expected Output	False
Actual Output	False
Pass/Fail	Pass

### 3. TC02

Test Case 2	
Test Case ID	TC02
Description	Verify that the calculator correctly handles and displays errors.
Test Data	(W & T)
Expected Output	Error – “Invalid character found”
Actual Output	“Invalid character found”
Pass/Fail	Pass

### 4. TC03

Test Case 3	
Test Case ID	TC03
Description	Verify that the calculator correctly handles and displays errors.
Test Data	(T   F
Expected Output	Error – “Encountered mismatched parenthesis”
Actual Output	“Encountered mismatched parenthesis”
Pass/Fail	Pass

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## 5. TC04

Test Case 4	
Test Case ID	TC04
Description	Verify that the calculator correctly evaluates a Boolean expression.
Test Data	! (T & T)
Expected Output	False
Actual Output	False
Pass/Fail	Pass

## 6. TC05

Test Case 5	
Test Case ID	TC05
Description	Verify that the calculator correctly evaluates a Boolean expression.
Test Data	! F   ! T
Expected Output	True
Actual Output	True
Pass/Fail	Pass

## 7. TC06

Test Case 6	
Test Case ID	TC06
Description	Verify that complex expressions are evaluated correctly.
Test Data	((T @ F) \$ F) \$ (F & F)   T
Expected Output	False
Actual Output	False
Pass/Fail	Pass

## 8. TC07

Test Case 7	
Test Case ID	TC07
Description	Verify that extra parenthesis on the right side throw an error.
Test Data	((T)))
Expected Output	Invalid token sequence
Actual Output	Invalid token sequence

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Pass/Fail	Pass
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## 9. TC08

Test Case 8	
Test Case ID	TC08
Description	Verify that a literal value evaluates to the correct output.
Test Data	T
Expected Output	True
Actual Output	True
Pass/Fail	Pass

## 10. TC09

Test Case 9	
Test Case ID	TC09
Description	Verify that incomplete expressions are invalid.
Test Data	&   T
Expected Output	Invalid expression found
Actual Output	"Invalid expression found"
Pass/Fail	Pass

## 11. TC10

Test Case 10	
Test Case ID	TC10
Description	Verify that the program gracefully exits
Test Data	quit
Expected Output	Exiting...
Actual Output	"Exiting..."
Pass/Fail	Pass

## 12. TC11

Test Case 11	
Test Case ID	TC11
Description	Verify that the Program can handle multiple NOT on the same value
Test Data	! (! (! T))

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Expected Output	True
Actual Output	True
Pass/Fail	Pass

### 13.TC12

Test Case 12	
Test Case ID	TC12
Description	Verify that a literal value evaluates the correct output.
Test Data	(T \$ T) \$ T
Expected Output	True
Actual Output	True
Pass/Fail	Pass

### 14.TC13

Test Case 13	
Test Case ID	TC13
Description	Verify that incomplete expressions are invalid.
Test Data	T F
Expected Output	Invalid token sequence
Actual Output	“Invalid token sequence”
Pass/Fail	Pass

### 15.TC14

Test Case 14	
Test Case ID	TC14
Description	Verify that process goes from left to right when parenthesis are not present
Test Data	T   T   F
Expected Output	True
Actual Output	True
Pass/Fail	Pass

### 16.TC15

Test Case 15	
Test Case ID	TC15

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Description	Verify that incomplete expressions are invalid
Test Data	(F \$ T) T
Expected Output	Invalid token sequence
Actual Output	"Invalid token sequence"
Pass/Fail	Pass

## 17.TC16

Test Case 16	
Test Case ID	TC16
Description	Verify that the program can handle parenthesis and evaluate Boolean expression
Test Data	T \$ (F   T)
Expected Output	False
Actual Output	False
Pass/Fail	Pass

## 18.TC17

Test Case 17	
Test Case ID	TC17
Description	Verify that the program can handle parenthesis and evaluate Boolean expression
Test Data	! (T & (F \$ ! T))
Expected Output	True
Actual Output	True
Pass/Fail	Pass

## 19.TC18

Test Case 18	
Test Case ID	TC18
Description	Verify that unknown operands are handled
Test Data	! 1
Expected Output	Invalid character found
Actual Output	"Invalid character found"
Pass/Fail	Pass

## 20.TC19

Test Case 19	
Test Case ID	TC19
Description	Verify that the program can handle multiple operators



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Test Data	(! T)   (F & (T \$ F))
Expected Output	False
Actual Output	False
Pass/Fail	Pass

## 21.TC20

Test Case 20	
Test Case ID	TC20
Description	Verify that the program can handle complex expressions
Test Data	! ((T @ F) & (F @ T))
Expected Output	False
Actual Output	False
Pass/Fail	Pass

## 22.TC21

Test Case 21	
Test Case ID	TC21
Description	Verify that the program can handle invalid expressions
Test Data	@ T
Expected Output	Invalid expression found
Actual Output	"Invalid expression found"
Pass/Fail	Pass

## 23.TC22

Test Case 22	
Test Case ID	TC22
Description	Verify that the program can handle invalid expressions
Test Data	F &
Expected Output	Invalid expression found
Actual Output	"Invalid expression found"
Pass/Fail	Pass

## 24.TC23

Test Case 23	
Test Case ID	TC23
Description	Verify that the program can handle complex expressions
Test Data	(T   (F & T)) & ((T \$ F)   ! T)

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Expected Output	True
Actual Output	True
Pass/Fail	Pass

## 25. TC24

Test Case 24	
Test Case ID	TC24
Description	Verify that the program can correctly evaluate Boolean expressions
Test Data	(T   F) @ (F \$ T)
Expected Output	True
Actual Output	True
Pass/Fail	Pass

## 26. TC25

Test Case 25	
Test Case ID	TC25
Description	Verify that the program handles mismatched parenthesis
Test Data	F   T ))
Expected Output	Invalid token sequence
Actual Output	Invalid token sequence
Pass/Fail	Pass

## 27. TC26

Test Case 26	
Test Case ID	TC26
Description	Verify that the program can handle invalid operator sequence
Test Data	T @@ F
Expected Output	Invalid expression found
Actual Output	Invalid expression found
Pass/Fail	Pass

## 28. TC27

Test Case 27	
Test Case ID	TC27
Description	Verify that the program can evaluate expressions with operators and multiple NOTs
Test Data	!(!(T   F) \$ !(T & (!F   T)))
Expected Output	True

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Actual Output	True
Pass/Fail	Pass

### 29. TC28

Test Case 28	
Test Case ID	TC28
Description	Verify that the program can handle invalid operator sequence
Test Data	T !   ! F
Expected Output	Invalid token sequence
Actual Output	“Invalid token sequence”
Pass/Fail	Pass

### 30. TC29

Test Case 29	
Test Case ID	TC29
Description	Verify that the program can handle excess parenthesis
Test Data	((T & ((F   T))))
Expected Output	True
Actual Output	True
Pass/Fail	Pass

### 31. TC30

Test Case 30	
Test Case ID	TC30
Description	Verify that the program can handle complex expressions
Test Data	(T @ (F \$ T)) & ((T   F) @ (T \$ F))
Expected Output	False
Actual Output	False
Pass/Fail	Pass

### 32. TC31

Test Case 31	
Test Case ID	TC31
Description	Verify that the program can evaluate Boolean expressions
Test Data	(T   F) \$ F
Expected Output	True
Actual Output	True

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Pass/Fail	Pass
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### 33. TC32

Test Case 32	
Test Case ID	TC32
Description	Verify that the program can evaluate a Boolean expression
Test Data	! (T & T)
Expected Output	False
Actual Output	False
Pass/Fail	Pass

### 34. TC33

Test Case 33	
Test Case ID	TC33
Description	Verify that the program can evaluate a Boolean expression
Test Data	(F @ T)   (T @ F)
Expected Output	True
Actual Output	True
Pass/Fail	Pass

### 35. TC34

Test Case 34	
Test Case ID	TC34
Description	Verify that the program can evaluate a Boolean expression
Test Data	(T \$ T) & F
Expected Output	False
Actual Output	False
Pass/Fail	Pass

### 36. TC35

Test Case 35	
Test Case ID	TC35
Description	Verify that the program can evaluate a Boolean expression
Test Data	! F   ! T
Expected Output	True
Actual Output	True
Pass/Fail	Pass

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### 37.TC36

Test Case 36	
Test Case ID	TC36
Description	Verify that the program can handle complex Boolean expressions
Test Data	(((((T   F) & F)   (T & (T   F))) @ (T @ T)) \$ (! (T   F)))
Expected Output	True
Actual Output	True
Pass/Fail	Pass

### 38.TC37

Test Case 37	
Test Case ID	TC37
Description	Verify that the program can handle complex Boolean expressions
Test Data	((F \$ ((T   F) & (F @ (T   F))))   (T \$ (T & F)))
Expected Output	True
Actual Output	True
Pass/Fail	Pass

### 39.TC38

Test Case 38	
Test Case ID	TC38
Description	Verify that the program can handle complex Boolean expressions
Test Data	(((! (T \$ F)) & (T @ T))   ((F   T) & (T \$ T)))
Expected Output	False
Actual Output	False
Pass/Fail	Pass

### 40.TC39

Test Case 39	
Test Case ID	TC39
Description	Verify that the program can handle complex Boolean expressions
Test Data	((((T @ T) \$ (F @ T))   ((! T) & (T   (! T))))
Expected Output	True
Actual Output	True
Pass/Fail	Pass

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#### 41.TC40

Test Case 40	
Test Case ID	TC40
Description	Verify that the program can handle complex Boolean expressions
Test Data	((F @ T) \$ (T   (F & F))) & (T & (T @ (! T)))
Expected Output	False
Actual Output	False
Pass/Fail	Pass

#### 42.TC41

Test Case 41	
Test Case ID	TC41
Description	Verify that the program handles missing operand
Test Data	! & T
Expected Output	Invalid expression found
Actual Output	"Invalid expression found"
Pass/Fail	Pass

#### 43.TC42

Test Case 42	
Test Case ID	TC42
Description	Verify that the program handles unrecognized operator symbol
Test Data	T ? T
Expected Output	Invalid character found
Actual Output	"Invalid character found"
Pass/Fail	Pass

#### 44.TC43

Test Case 43	
Test Case ID	TC43
Description	Verify that the program handles mismatched parenthesis
Test Data	(T  ) F
Expected Output	Invalid expression found
Actual Output	"Invalid expression found"
Pass/Fail	Pass

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#### 45.TC44

Test Case 44	
Test Case ID	TC44
Description	Verify that the program handles empty expression
Test Data	
Expected Output	Invalid expression found
Actual Output	"Invalid expression found"
Pass/Fail	Pass

#### 46.TC45

Test Case 45	
Test Case ID	TC45
Description	Verify that the program handles inconsistent characters
Test Data	True   F
Expected Output	Invalid character found
Actual Output	"Invalid character found"
Pass/Fail	Pass

#### 47.TC46

Test Case 46	
Test Case ID	TC46
Description	Verify that the program handles mismatched parenthesis
Test Data	T (  F)
Expected Output	Invalid token sequence
Actual Output	"Invalid token sequence"
Pass/Fail	Pass

#### 48.TC47

Test Case 47	
Test Case ID	TC47
Description	Verify that the program can handle nested parenthesis
Test Data	(T & (F @ (T \$ (F   T))))
Expected Output	True
Actual Output	True
Pass/Fail	Pass

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#### 49.TC48

Test Case 48	
Test Case ID	TC48
Description	Verify that the program can evaluate Boolean expressions
Test Data	(T & F)   (T \$ F)
Expected Output	True
Actual Output	True
Pass/Fail	Pass

#### 50.TC49

Test Case 49	
Test Case ID	TC49
Description	Verify that the program can evaluate Boolean expressions
Test Data	((((T))))   (((F))))
Expected Output	True
Actual Output	True
Pass/Fail	Pass

#### 51.TC50

Test Case 50	
Test Case ID	TC50
Description	Verify that the program can evaluate Boolean expressions
Test Data	(! (T \$ (F   T)) @ (T   (F \$ (T @ F)))) & T
Expected Output	False
Actual Output	False
Pass/Fail	Pass