Software Testing Assignment-3

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Case Study

Introduction

Calculator which perform functions of Addition, Multiplication, Division, Subtraction and also take the average of three numbers. There are five functions **Add(), sub(), mul(), div(), Average().**

Brief Descriptions

Every function has two parameter of integer type except Average function has three parameters of integer type. There is ranges are define for every variable for the function, and these ranges are define as:

Add () Function:
Variable number: 1 – 50
Variable number2: 51 – 100

Sub() Function:
Variable number: 51 – 100
Variable number2: 1 – 50

mul() Function:
Variable number: 1 – 100
Variable number2: 101 – 200

div() Function:
Variable number: 30 – 50
Variable number2: 1 – 29

Average() Function:
Variable number1: 1 – 100
Variable number2: 101– 200
Variable number3: 201- 300

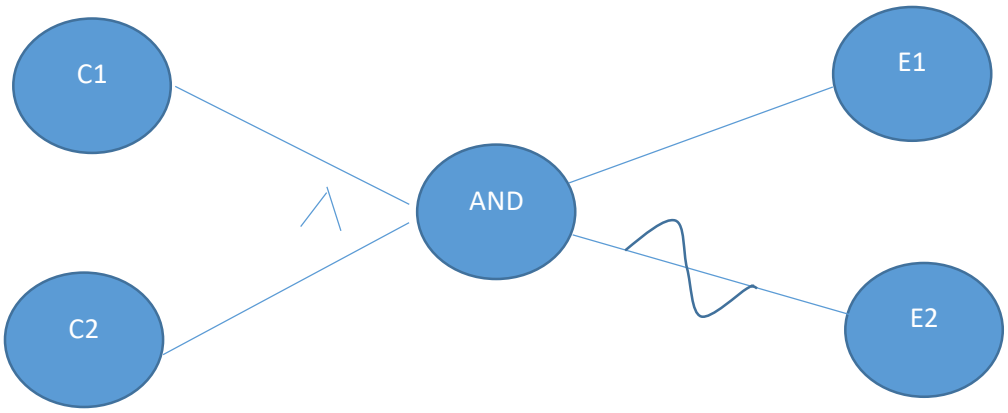
In the main function, user first give a choice of what function they want to execute in the foam of number and it is then match the number with the cases in switch method when the number is match with the cases then it ask the user to enter the values and also show the ranges of the number, then it send those values to the function, after this function return the value and then it compare the value if the value is greater than zero it print the number and if it return the zero its means number is out of line.

Black Box Testing

Function 1: int add (int number, int number2)

Causes	Effect
C1: number >=1 && number <=50	E1: Calculate the numbers
C2: number2 >=51 && number2<=100	E2: Number is out of range

Case Effect Graph:



Decision Table:

Action	T1	T2	T3	T4
C1	0	0	1	1
C2	0	1	0	1
T1	0	0	0	1
T2	1	1	1	0

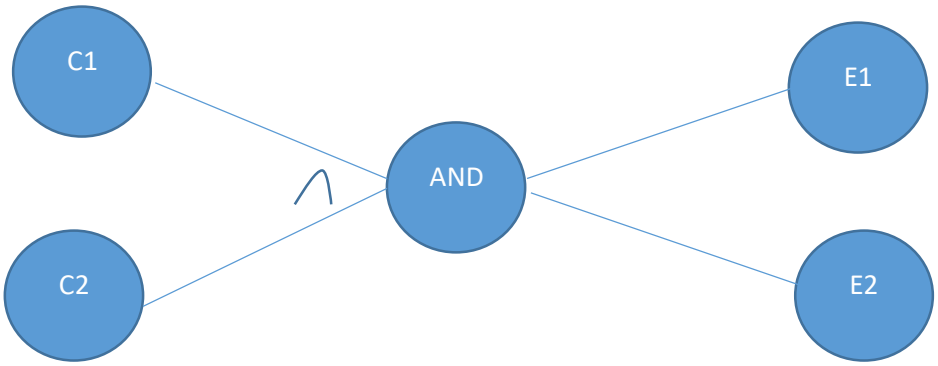
Test Cases:

Test Cases	Input		Expected Result
	Number	Number2	
T1	-1	50	Number is out of range
T2	-1	60	Number is out of range
T3	30	45	Number is out of range
T4	40	80	Addition is calculated

Function 2: int sub (int number, int number2)

Causes	Effect
C1: number >=51 && number <=100	E1: Subtract the numbers
C2: number2 <=1 && number2>=50	E2: Number is out of range

Case Effect Graph:



Action	T1	T2	T3	T4
C1	0	0	1	1
C2	0	1	0	1
T1	0	0	0	1
T2	1	1	1	0

Decision Table:

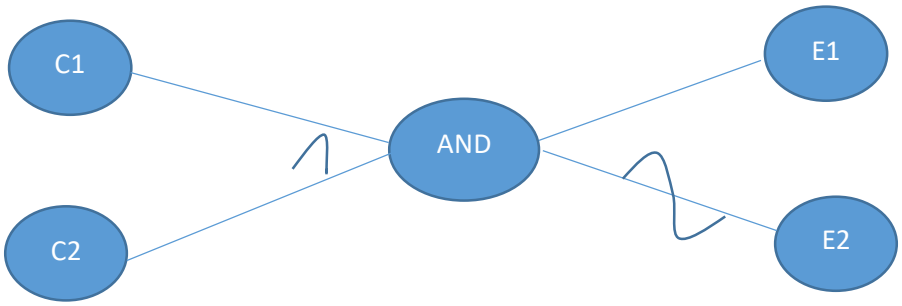
Test Cases:

Test Cases	Input		Expected Result
	Number	Number2	
T1	50	-1	Number is out of range
T2	110	45	Number is out of range
T3	30	55	Number is out of range
T4	40	20	Subtract the numbers

Function 3: int mul (int number, int number2)

Causes	Effect
C1: number >=1 && number <=100	E1:Multiplication of numbers
C2: number2 >=101 && number2<=200	E2: Number is out of range

Cause Effect Graph:



Decision Table:

Action	T1	T2	T3	T4
C1	0	0	1	1
C2	0	1	0	1
T1	0	0	0	1
T2	1	1	1	0

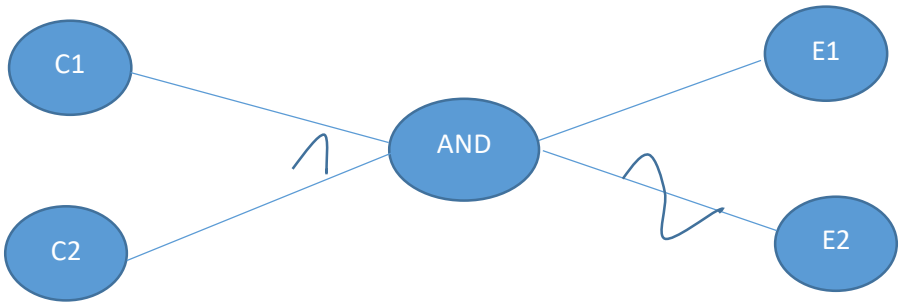
Test Cases:

Test Cases	Input		Expected Result
	Number	Number2	
T1	0	100	Number is out of range
T2	-1	150	Number is out of range
T3	55	207	Number is out of range
T4	80	140	Multiply the numbers

Function 4: int mul (int number, int number2)

Causes	Effect
C1: number >=30 && number <=50	E1: Division of numbers
C2: number2 >=1 && number2<=29	E2: Number is out of range

Cause Effect Graph:



Decision Table:

Action	T1	T2	T3	T4
C1	0	0	1	1
C2	0	1	0	1
T1	0	0	0	1
T2	1	1	1	0

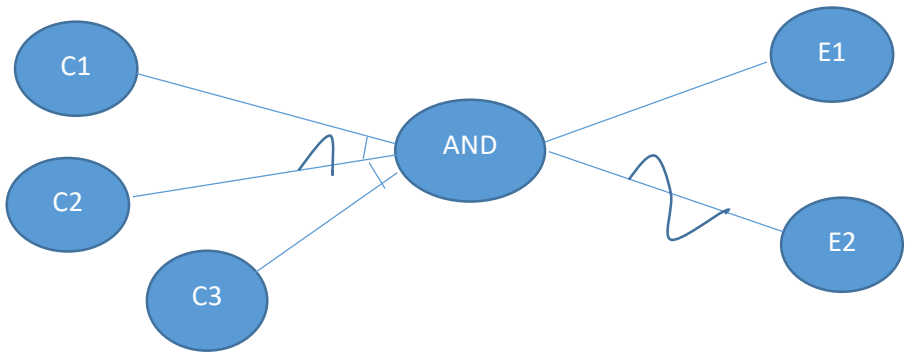
Test Cases:

Test Cases	Input		Expected Result
	Number	Number2	
T1	29	0	Number is out of range
T2	55	15	Number is out of range
T3	40	33	Number is out of range
T4	35	20	Multiply the numbers

Function 4: int Aversge (int number1, int number2, int number3)

Causes	Effect
C1: number1 >=1 && number2 <=100	E1: Division of numbers
C2: number2 >=101 && number2<=200	E2: Number is out of range
C3: number3 >=201 && number3<=300	

Cause Effect Graph:



Decision Table:

Action	T1	T2	T3	T4	T5	T6	T7	T8
C1	0	1	0	0	1	0	1	1
C2	0	0	1	0	1	1	0	1
C3	0	0	0	1	0	1	1	1
T1	0	0	0	0	0	0	0	1
T2	1	1	1	1	1	1	1	0

Test Cases:

Test Cases	Input			Expected Result
	Number1	Number2	Number3	
T1	0	20	-1	Number is out of range
T2	50	60	315	Number is out of range
T3	-2	150	15	Number is out of range
T4	110	10	250	Number is out of range
T5	80	180	320	Number is out of range

T6	-1	130	230	Number is out of range
T7	55	35	255	Number is out of range
T8	90	190	290	Calculate the average