IT-314 Software Engineering

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Lab Report : 8_Testing-intro.

Lab Group: 2

Date: 17/10/2023

Lab Session - Testing - Introduction
IT313: Software Engineering (Autumn 2023-24)

Question: Write a set of test cases – specific set of data – to properly test a relatively Simple program. Create a set of test data for the program - data the program must handle correctly to be considered a successful program.

Format:

Tester Action and Input Data	Expected Outcome

Here's a description of the program:

"The program reads three integer values from an input dialog. The three values represent the lengths of the sides of a triangle. The program displays a message that states whether the triangle is scalene, isosceles, or equilateral".

Code: The function triangle takes three integer parameters that are interpreted as the lengths of the sides of a triangle. It returns whether the triangle is equilateral (three lengths equal), isosceles (two lengths equal), scalene (no lengths equal), or invalid (impossible lengths).

```
final int EQUILATERAL = 0;
final int ISOSCELES = 1;
final int SCALENE = 2;
final int INVALID = 3;
int triangle(int a, int b, int c)
{
   if (a >= b+c || b >= a+c || c >= a+b)
         return(INVALID);
   if (a == b && b == c)
         return(EQUILATERAL);
   if (a == b || a == c || b == c)
         return(ISOSCELES);
   return(SCALENE);
}
```

Tester Action and Input Data			Expected Output
a	**b**	**c**	
General Formula For Scalene: (max_int-2, max_int-1, max_int)			
2	3	4	**SCALENE**
5	4	3	
8	9	10	
12	14	15	
3586	5123	6008	
1	2	3	**INVALID** //Error Message //Assumption Float values will be taken as a Invalid Input.
5	3	2	
8	6	2	
0	0	0	
-2	3	4	
1.2	2	4	
General Formula For Isosceles: (max_int, max_int-1, max_int)			
4	3	4	**ISOSCELES**
2	2	5	
9	5	5	
4	7	7	
5002	10000	10000	
1	2	1	**INVALID** //Error Message //Assumption Float values will be taken as a Invalid Input.
2	5	2	
3	1	1	
1	-2	-2	
2.2	2.2	0	

General Formula For Equilateral: (max_int, max_int, max_int)			
1	1	1	**EQUILATERAL**
5156	5156	5156	
8	8	8	
5.6	5.6	5.6	
86	86	86	
0	0	0	**INVALID** //Error Message
-1	-1	-1	//Assumption Float values will be taken as a Invalid Input.
-2008	2008	2008	
1.1	1.1	1.1	