IT313 _Software Engineering

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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);
}
```

TEST	Tester Action and Input Data	Outcome
INVALID	A=-1 B=-2 C=-3	TRUE
INVALID	A=0 B=0 C=0	TRUE
INVALID	A=1 B=1	TRUE

	C=2	
INVALID	A=100 B=200 C=500	TRUE
INVALID	A=3 B=4 C=50	TRUE
EQUILATERAL	A=1 B=1 C=1	TRUE
EQUILATERAL	A=20 B=20 C=20	TRUE
EQUILATERAL	A=50 B=50 C=50	TRUE
EQUILATERAL	A=2 B=2 C=2	TRUE
EQUILATERAL	A=3 B=3 C=3	TRUE
EQUILATERAL	A=INT_MAX B=INT_MAX C=INT_MAX	FALSE
ISOSCELES	A=1 B=2 C=2	TRUE

ISOSCELES	A=2 B=3 C=3	TRUE
ISOSCELES	A=40 B=40 C=50	TRUE
ISOSCELES	A=50 B=30 C=30	TRUE
ISOSCELES	A=4 B=4 C=3	TRUE
SCALENE	A=4 B=2 C=3	TRUE
SCALENE	A=2 B=3 C=4	TRUE
SCALENE	A=4 B=5 C=6	TRUE
SCALENE	A=6 B=5 C=3	TRUE
SCALENE	A=4 B=7 C=9	TRUE