



IT314 Lab 8 Report  
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# 1 Introduction to Testing

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.

```
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);
}
```

Figure 1: Sample Code

Serial No.	Tester Action	Input Data	Expected Outcome
1	Test valid equilateral triangle	5, 5, 5	True
2	Test valid equilateral triangle	10, 10, 10	True
3	Test valid equilateral triangle	8, 8, 8	True
4	Test valid equilateral triangle	-15, -15, -15	False
5	Test valid equilateral triangle	0, 0, 0	False
6	Test valid isosceles triangle	5, 5, 8	True
7	Test valid isosceles triangle	7, 10, 7	True
8	Test valid isosceles triangle	12, 8, 12	True
9	Test valid isosceles triangle	-6, -6, -9	False
10	Test valid isosceles triangle	0, 0, 1	False
11	Test valid scalene triangle	3, 4, 5	True
12	Test valid scalene triangle	7, 24, 25	True
13	Test valid scalene triangle	10, 12, 15	True
14	Test valid scalene triangle	-5, -12, -13	False
15	Test valid scalene triangle	0, 1, 1	False
16	Test invalid triangle	1, 2, 4	False
17	Test invalid triangle	0, 0, 0	False
18	Test invalid triangle	5, 10, 25	False
19	Test invalid triangle	-2, -8, -6	False
20	Test invalid triangle	12, 3, 8	False
21	Test valid isosceles triangle	10, 6, 10	True
22	Test valid isosceles triangle	8, 15, 8	True
23	Test valid isosceles triangle	5, 12, 12	True
24	Test valid isosceles triangle	14, 14, 20	True
25	Test valid isosceles triangle	-9, -9, -6	False
26	Test valid scalene triangle	7, 8, 10	True
27	Test valid scalene triangle	9, 12, 15	True
28	Test valid scalene triangle	4, 6, 9	True
29	Test valid scalene triangle	11, 14, 18	True
30	Test valid scalene triangle	-3, -5, -7	False
31	Test invalid triangle	5, 10, 25	False
32	Test invalid triangle	15, 20, 40	False
33	Test invalid triangle	0, 8, 15	False
34	Test invalid triangle	-4, -4, -9	False
35	Test invalid triangle	12, 5, 5	False
36	Test valid equilateral triangle	12, 12, 12	True
37	Test valid equilateral triangle	18, 18, 18	True
38	Test valid equilateral triangle	25, 25, 25	True
39	Test valid equilateral triangle	-30, -30, -30	False
40	Test valid equilateral triangle	40, 40, 40	True
41	Test valid scalene triangle	9, 12, 15	True
42	Test valid scalene triangle	5, 7, 10	True
43	Test valid scalene triangle	11, 13, 17	True
44	Test valid scalene triangle	4, 6, 8	True
45	Test valid scalene triangle	-15, -20, -25	False

Table 1: Test Cases for the Simple Program