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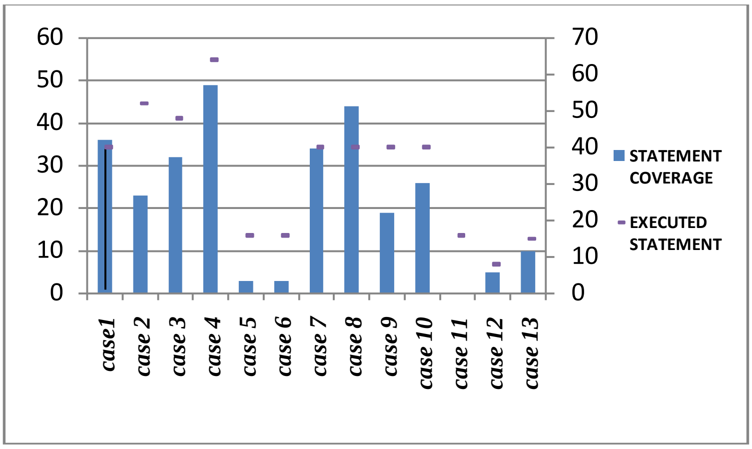
else if (triang == 3 && sides[1] + sides[2] > sides[0])
return ISOSCELES;
return ILLEGAL;
}

We design13 test cases for test the triangle program

1. A test case which represents a valid scalene triangle.
2. A test case which represents a valid equilateral triangle.
3. A test case which represents a valid isosceles triangle.
4. At least three test cases which represent valid isosceles. triangles such that you have tried all three permutations of two equal sides.
5. A test case in which one side is zero.
6. A test case in which one side is negative.
7. A test case with three positive integers such that the sum of two of them is equal to the third.
8. At least three test cases in category 7 such that you have tried all three permutations where the length of one side is equal to the sum of the lengths of the other two sides.
9. A test case with the sum of two of the numbers less than the third.
10. At least three cases in category 9 such that you have tried all three permutations.
11. A test case with all side lengths equal to zero.
12. At least one test case specifying non-integer values.
13. At least one test case specifying the wrong number of values (two or four).

The total is the mutation score of the entire test set. The "statement coverage" column shows the percentage of executed statements of the program under test.

Test case Mutation score Statement coverage
1 36% 40%
2 23% 52%
3 32% 48%
4 49% 64%
5 3% 16%
6 3% 16%
7 34% 40%
8 44% 40%
9 19% 40%
10 26% 40%
11 0% 16%
13 5% 8%



6. Conclusion:

In this paper, we examine the utilities of mutation testing to check the effectiveness of given automated test case by creating mutants in the original program.

7.References:

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Authors Profile

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