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CMPT405  
Assignment 1

1. Minimal black-box test suite for the classification problem. The sides of the triangle are a, b, c.

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| Test Case | Input | Expected output |
| 1 | a = 4, b = 5, c = 7 | “scalene” |
| 2 | a = 4, b = 4, c = 4 | “equilateral” |
| 3 | a = 5, b = 7, c = 7 | “isosceles” |
| 4 | a = 0, b =-1, c = 4 | “not a valid triangle” |
| 5 | a = 4, b = 5, c = 9 | “not a valid triangle” |
| 6 | a = 0, b = 0, c = 0 | “not a valid triangle” |
| 7 | a = 2, b = 3, c = 9 | “not a valid triangle” |
| 8 | a = 3.7, b = ‘’, c = | “not a valid triangle” |

1. Errors found on the manual code inspection:
   1. Error on line 30. In the catch statement, the word ‘exception’ is misspelt. The cause of this error must have been a typo by the writer of the code. The impact of this error may be a compilation error, or the exception may not be properly caught.
   2. Error on line 56. The cause of this error must have been a wrong choice of logical operator for comparison. The logical operator used in the if statement is not the appropriate and effective logical operator. The impact of this error could be that values are not compared adequately, causing wrong outputs of the code and wrong classification of the triangle.
   3. Error on line 72. The if statement includes ineffective logical operators that is being used to compare values. Just like the previous, the cause of this error is a wrong choice of logical operator. The impact of this error is a wrong comparison of the values, which may cause wrong classification of the triangle.
   4. Error on line 86. The if statement includes an ineffective logical operator that is being used to compare values. Just like the previous, the cause of this error is a wrong choice of logical operator. The impact of this error is a wrong comparison of the values, which may cause wrong classification of the triangle.
   5. Error on line 88. The if statement includes an ineffective logical operator that is being used to compare values. Just like the previous, the cause of this error is a wrong choice of logical operator. The impact of this error is a wrong comparison of the values, which may cause wrong classification of the triangle.
   6. Error on line 90. The if statement includes an ineffective logical operator that is being used to compare values. Just like the previous, the cause of this error is a wrong choice of logical operator. The impact of this error is a wrong comparison of the values, which may cause wrong classification of the triangle.
2. Compiling and testing the java solution using the minimal black-box test suite:

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| --- | --- | --- | --- | --- |
| Test Case | Input | Expected output | Actual Output | Success/Failure |
| 1 | a = 4, b = 5, c = 7 | “scalene” | scalene |  |
| 2 | a = 4, b = 4, c = 4 | “equilateral” |  |  |
| 3 | a = 5, b = 7, c = 7 | “isosceles” |  |  |
| 4 | a = 0, b =-1, c = 4 | “not a valid triangle” |  |  |
| 5 | a = 4, b = 5, c = 9 | “not a valid triangle” |  |  |
| 6 | a = 0, b = 0, c = 0 | “not a valid triangle” |  |  |
| 7 | a = 2, b = 3, c = 9 | “not a valid triangle” |  |  |
| 8 | a = 3.7, b = ‘’, c = | “not a valid triangle” |  |  |

1. No, my test suite is not guaranteed to find all the errors found in this programming solution. This is a minimal black-box test suite; hence it may be possible to miss errors if there is no test case for it.
2. Error Patches:
   1. Error