# **Assignment 2: Unit Testing - Triangle problem report**

1. **Why I use these test case?**

* I chose 4 test cases to test for Triangle problem as below problem:

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| **Test Case** | **Condition Being Tested\*\*** | **Input Data Values\*** | | | **Expected Result** |
|  |  | **Side 1** | **Side 2** | **Side 3** |  |
| 1 | Three valid equal sides | 3 | 3 | 3 | return equilateral |
| 2 | Two equal valid sides | 5 | 5 | 3 | return isosceles |
| 3 | All side are not equal | 4 | 5 | 6 | return irregular |
| 4 | check if the sum of any two sides is greater than the third side | 2 | 3 | 7 | Invalid triangle: The sum of any two sides must be greater than the third side |

1. **Conclusion:**

* **Test Case 1**: Three valid equal sides
* Purpose: Verifies that the program correctly identifies an equilateral triangle when all three sides are equal.
* Input: Three identical values (3, 3, 3).
* Expected Result: The program should return "equilateral".
* **Test Case 2**: Two equal valid sides
* Purpose: Tests if the program can accurately recognize an isosceles triangle when two sides are equal.
* Input: Two identical values and one different value (5, 5, 3).
* Expected Result: The program should return "isosceles".
* **Test Case 3**: All sides are not equal
* Purpose: Checks if the program can correctly identify an irregular triangle when all three sides are different.
* Input: Three distinct values (4, 5, 6).
* Expected Result: The program should return "irregular".
* **Test Case 4**: Check if the sum of any two sides is greater than the third side
* Purpose: Verifies that the program handles invalid triangle inputs where the sum of two sides is not greater than the third side.
* Input: A combination of values where the sum of any two sides is less than or equal to the third side (2, 3, 7).
* Expected Result: The program should return an error message or indication that the input values do not form a valid triangle.