**Test plan** for a program for calculating the sum and average value of 5 numbers.

The purpose of testing is to check whether the program correctly processes user input, calculates the sum and average value, whether error handling is taken into account when entering incorrect data, and check the correctness and clarity of the output results and messages about erroneous input. Also checking the program's operation when entering boundary, negative, fractional and large numbers.

Testing includes functional testing (checking whether the program correctly accepts five input data, calculates the sum and average value and displays the expected results), testing boundary cases (checking how the program handles minimum and maximum values), negative testing and error handling (checking how the program behaves with non-numeric values.) Also testing usability: checking the understandability of the output data.

Test environment: The program works in the command line interface.

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| **Test Case ID** | **Test Description** | **Test Input** | **Expected Output Actual** | **Actual Output** | **Output Pass/Fail** |
| TC-01 | Valid Input Test: Positive Numbers | 1,2,3,4,5 | The sum of the numbers is: 15.0 The average of the numbers is: 3.0 |  | Pass |
| TC-02 | Valid Input Test: Negative Numbers | -1,-2,-3,-4,-5 | The sum of the numbers is: -15.0 The average of the numbers is: -3.0 |  | Pass |
| TC-03 | Valid Input Test: Positive & Negative Numbers | -1,2,-3,4,-5 | The sum of the numbers is: -3.0  The average of the numbers is: -0.6 |  | Pass |
| TC-04 | Invalid Input Test: Non-Numeric Input | “A” | Invalid input! Please enter a valid number. |  | Pass |
| TC-05 | Invalid Input Test: Empty Input | “ “ | Invalid input! Please enter a valid number. |  | Pass |
| TC-06 | Edge Case Test: Zero Included | 0,2,3,4,5 | The sum of the numbers is: 14.0  The average of the numbers is: 2.8 |  | Pass |
| TC-07 | Edge Case Test: Large Number | 100000,1000000,  9999999,888888,  777777 | The sum of the numbers is: 13666664.0  The average of the numbers is: 2733332.8 |  | Pass |
| TC-08 | Boundary Test: Identical Numbers | 5,5,5,5,5 | The sum of the numbers is: 25.0  The average of the numbers is: 5.0 |  | Pass |
| TC-09 | Boundary Test: Identical Numbers | 0,0,0,0,0 | The sum of the numbers is: 0.0  The average of the numbers is: 0.0 |  | Pass |
| TC-10 | Invalid Input Test: Zero Included ,Non-Numeric Input | 0,O ,1,2,3 | Enter number 2: O  Invalid input! Please enter a valid number. |  | Pass |
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| TC-11 | Valid Input Test: Positive fractional number | 1.5,1.2 ,4.7,2.9,3.1 | The sum of the numbers is: 13.4  The average of the numbers is: 2.68 |  | Pass |