

User-Defined Functions

Assignment 1: Calculate average

Complete the CalcAverage() function that has an integer vector parameter and returns the average value of the elements in the vector as a double.

Example: If the input vector is: 1 2 3 4 5 => the output is: 3.0

main.cpp

```
1 #include <iostream>
2 #include <vector>
3 using namespace std;
4
5 // CalcAverage() takes in an int vector and returns the average
6 // value of elements in the vector as a double.
7 double CalcAverage(vector<int> nums) {
8
9     /* Type your code here. */
10
11 }
12
13 int main() {
14     vector<int> nums = {1, 2, 3, 4, 5};
15     cout << CalcAverage(nums) << endl; // CalcAverage() should return 3.0.
16     return 0;
17 }
18
```

Assignment 1 Tests

Apply the following tests.

1. Unit test (2 points)

Test calcAverage([1, 2, 3, 4, 5]) returns 3.0

Show details ▾
2. Unit test (2 points)

Test calcAverage([5, 5, 5, 5, 5, 5, 5, 5, 5]) returns 5.0

Show details ▾
3. Unit test (2 points)

Test calcAverage([1, 2, ... , 99, 100]) returns 50.5

Show details ▾
4. Unit test (2 points)

Test calcAverage([10]) returns 10.0

Show details ▾
5. Unit test (2 points)

Test calcAverage([1, 2, 3, -3, -2, -1]) returns 0.0

Show details ▾

Assignment 2: Remove all non-alphabetic characters

Write a program that removes all non-alphabetic characters from the given input.

Example: If the input is: "-Hello, 1 world\$!" => the output is: "Helloworld"

Hint: isalpha() function from string library checks the presence of alphabet letters.

main.cpp

```
1 #include <iostream>
2 using namespace std;
3
4 /* Define your function here */
5
6 int main() {
7
8     /* Type your code here. Your code must call the function. */
9
10     return 0;
11 }
12
```

Assignment 2 Tests

Apply the following tests.

1. Compare output (2 points)

When input is

-Hello, 1 world\$!

Standard output exactly matches

Helloworld
2. Unit test (2 points)

RemoveNonAlpha("This !\$ @ sentence.")

Show details ▾
3. Unit test (3 points)

RemoveNonAlpha("Look! Multiple spaces.")

Show details ▾
4. Unit test (3 points)

RemoveNonAlpha("flying")

Show details ▾

Submissions

Note: Do not forget to submit all two assignments and corresponding test outputs to receive full credit.

- 1 - Name your C++ files FirstName_Lastname_CalculateAverage.cpp, FirstName_Lastname_IsAlphabet.cpp.
- 2 - Prepare your report in docx or pdf format and name it Firstname_Lastname.docx or Firstname_Lastname.pdf. Put both your assignments and corresponding tests in ONE report file.
- 3 - Add the screenshot of your code to the report. All tests should be performed and the result screenshot be included in the report.

Note: Make sure to have your report containing both explanatnations and screenshots.