

Exam Average Program

Instructions (often called a “Problem”)

Write a program that prompts the user to enter five test scores and then prints the average test score. (Assume that the test scores are decimal numbers.)

Discussion/considerations

Recall that an algorithm is the method for solving a problem. Think of it as the set of steps that you need to take to come up with a solution. Some considerations that you should think about:

What is an appropriate title and description for this program?

Exam Average

What data needs to be collected from the user?

A list of numbers, prefer float.

What calculations need to be done? (And in what order? Does it matter?)

Add all inputs together then divide by the amount of inputs

What is a mathematical example I can work through (and later used to test) these calculations to ensure they are correct?

$(1+2+3)/3$

What variables and constants would be needed for this program, as well as appropriate names for them?

No constants necessary.

Description - Name

Variable for temporary storage and evaluation by a while loop to see if its a number or not - temporaryUserInput

A vector that will be appended to - testScores

A float that will be the sum of all numbers in testScores - testScoresSum

What kind of output do we want? How should it be formatted?

Ideally, plain text as standard output, but some form of labeling is likely to be requested.

Algorithm

Plan the algorithm in the form of comments that can be copied/pasted into your C++ code.

<insert algorithm here>

```
//While loop that tests if temporaryUserInput is valid input or not; terminate if invalid
```

```
//Cin that writes to temporaryUserInput
```

```
//if temporaryUserInput is a number, append temporaryUserInput to testScores & loop over
```

```
//otherwise, break the loop and move on to calculating averages
```

```
//for every number in the vector testScores, add that number to testScoresSum
```

```
//print the output of testScoresSum divided by the length of testScores
```

Code

Once the algorithm is complete, then create a new Project called → **ExamAverage** and paste the comments into the `main` function of your code.