# Output

This will be the same output as the final\_grade program. Will be formatted as:

Your final grade is {final grade}

Your grade in assignments is {assignments}

Your grade in quizzes is {quizzes}

Your grade in tests is {tests}

Your grade in class exercises is {class exercises}

# Input

The input will be the same as well. I will prompt the user to enter their grades from:

* Class Exercise 1: Planning an Application
* Class Exercise 2: Numeric and String Data
* Class Exercise 3: Selection
* Class Exercise 4: Iteration
* Test 1: Theory
* Test 1: Practical
* Assignment 1: Iteration
* Quiz 1: Planning an Application
* Quiz 2: Numeric and String Data
* Quiz 3: Selection
* Quiz 4: Iteration
* Quiz 5: Arrays

Each of these grades will be stored in a list called “grades”, as well as another list depending on the type of activity it is. For example tests, quizzes, etc.

# Process

The calculations for this program will be a formula like:

(Sum of all class exercises / number of class exercises) \* 100 to turn it into a percentage = save this in a variable such as “numerator”

Sum of all activity weightings = variable such as “denominator”

Final grade = numerator / denominator \* 100

# Pseudo Code

We can save quite a bit of space and time with this program by adding functions instead. Instead of having to type the validation every time, we can write a function such as “validation” and have it check that the input is numeric, not null, and between 0 and 100.

Start by defining my function

validation:

ensure that input is not null

ensure that input is only numeric

ensure that input is between 0 and 100

Ask user for input for each activity

Validation()

If validation checks pass, append to appropriate lists.

Sum up all the values in each list for class exercises, tests, etc. For example we will use class exercises.

Divide that sum by the amount of each class exercise, we have 4.

Multiply that value by 100 and that is the percentage of your average in class exercises.

To calculate the total final grade, take the average of class exercises, tests etc, and divide by 100

We will then multiply each of those values by the weighting. For example, 12 for class exercises.

Add the sum of all (averages/100) \* weight, and that will be the numerator in our equation

The denominator in our equation will be the sum of all weights, for example 12 for class exercises, 10 for tests etc.

Our final grade will simply be (numerator/denominator) \* 100

Output to the user a message such as:

Your average grade in assignments is x%

Your average grade in tests is x%, and so on

Your final grade is x%

# Desk Check

For the purpose of the desk check I will only take grade from 2 assignments.

Will only accept grade from 0-100.

Please enter the grade of Assignment 1:

10: Accepted amount. Will do math below.

10000: “Input must be between 0 and 100”

-1: “Input must be a positive number”

25000.25: “Input must be between 0 and 100”

-900: “Input must be a positive number”

0: Accepted amount. Will do math below.

Eight: “Input must be a number”

Please enter the grade of Assignment 2:

10: Accepted amount. Will do math below.

10000: “Input must be between 0 and 100”

-1: “Input must be a positive number”

25000.25: “Input must be between 0 and 100”

-900: “Input must be a positive number”

0: Accepted amount. Will do math below.

Eight: “Input must be a number”

Assignment 1: Grade of 10%

Assignment 2: Grade of 10%

Output: Your final grade is 10%

Assignment 1: Grade of 0%

Assignment 2: Grade of 0%

Output: Your grade is 0%