CSCI 1301 – Programming Principles I
Georgia Southern University
Department of Computer Science
Fall 2024

Assignment 2
Point Value: 20 points
Due: Friday September 6, 2024, start of lab

NOTE: Gradescope will give input test cases for any problems that require it. Use the Scanner's nextDouble(), nextInt(), etc. methods discussed in class to prompt the user for input and Gradescope will act as the user when your program requests it. In other words, just code user input like normal—as if a human were going to test your program.

Description
Write a Java program that calculates a weighted-average using the weights from this course (see syllabus for individual category weights).

A weighted average of data $x = [x_1, x_2, \cdots, x_{n-1}, x_n]$ with weights $w = [w_1, w_2, \cdots, w_{n-1}, w_n]$ is computed according to the formula $wa = (x_1 \cdot w_1 + x_2 \cdot w_2 + \cdots + x_{n-1} \cdot w_{n-1} + x_n \cdot w_n)$. In this version of the formula, all percentage weights should be converted to real number values (15% = 0.15).

The program should prompt the user to enter a percentage grade for each category. Ask the user for percentage grades, in order, for: Revel Exercises, Lab Exercises, Programming Assignments, Exam 1, Exam 2, Exam 3, and Final Exam. The program should calculate and display a final percentage grade (fractional value) based on that value. Additionally, the program should keep a count of the number of grades entered and increment that count directly after receiving user input.

For instance, a Revel grade of 82.7, Programming Assignment grade of 91.5, Lab grade of 95.1, Exam 1 grade of 75.5, Exam 2 grade of 87.0, Exam 3 grade of 88.5, and Final Exam grade of 92.25 would give an 87.6425 final grade for the course.

NOTES: Calculate each weight separately. Do **not** combine grades/weights that are the same (for instance, exams 1, 2, and 3) or it is possible to get a different result from the Gradescope answer. Do not hard code the number of grades in the output. Do not hard code any of the numeric values in the output; use your calculated/stored values.

Expected Output using test case above (not including user prompts):
```
There were 7 grades entered.
The final grade for this course is 87.6425.
```

Sample Run using test case above (only the expected output is tested in Gradescope)

```
Enter Revel grade: 82.7
Enter Programming Assignments grade: 91.5
Enter Lab grade: 95.1
Enter Exam 1 grade: 75.5
Enter Exam 2 grade: 87.0
Enter Exam 3 grade: 88.5
Enter Final Exam grade: 92.25
There were 7 grades entered.
The final grade for this course is 87.6425.
```

Code

Use the provided template for this assignment. Make any necessary modifications to classes and class headers to complete this assignment.

```
public class PAssign02 {
	public static void main(String[] args)  {
		// add your code here

	}
}
```

Deliverables

Name your program PAssign02.java. Programming Assignment 2 is to be individual work. Submit the program by the specified due date. Submit each file to its corresponding assignment on Gradescope.

See and follow the Programming Assignment Format document for submission requirements.

Use a utility similar to https://www.diffchecker.com/ and the Expected Output to compare your program's output with the requested output as well as the unit tests provided within Gradescope. Programming is in the details, so double check punctuation, spacing, and case if your output does not match. When copying and pasting, be aware that Microsoft Word sometimes replaces normal quotes with Smart Quotes, which may need to be edited.

Last modified: August 25, 2024