Lab 02 Final Grade

Bradley Grose

# Problem

In this lab we are making a final grade calculator that is able to read a file and calculate out the final grade for a student. It takes the file and breaks up the grades in the text file based on the headers and weight them into their categories. It will be able to calculate out a average for each sub sections: labs, lab reports, homework, exams, and final. It will figure out what two exams are the best scores, using if statements. It will give the raw grade for the class, the adjusted weighted grade, and the rounded letter grade for the class.

# Solution

First, I made the class assignmentType which just had the constants for the name of the type of assignment. Then in the class Student, I created the instance variable for the sum and the count for each of the sub sections. I have a default constructor setting them all to 0, so i could use += later on for adding the score. I have getters written to get the value and calculate the averages based on the sum and the count. Then I have an addGrade that takes in a section and aGrade, using if statements will add the grade and add to counter if needed. Then I have a function that gets the grade numeric that will use the weighting of the sections to multiple by and add to a return. Then I have 3 if/else if statements to determine the 2 best exam scores to use in the grade, checking the 3 possible combinations for the highest score to benefit the student.. Then getGradeRounded() uses the math.ceil function to round the grade to create the adjusted score for the student. The letter grade function takes the rounded grade and uses if else statements to set a return value to the grade. Then there is a read file function that uses a scanner to break up the sections based on the headers given in the text file and then add the grades n each section using the addGrade function. Finally, in this class I have a toString function that calls the get functions and writes out the text for the values of the grade. Then in the grader class, I have the main method that has a while loop until quit is typed that asks for the file names and calls the read value and to string to calculate out the values for the grade. I also included IO exceptions as I am dealing with file input in this lab with throws to these exceptions.

# Implementation Problems Encountered

No problems were encountered in this code.

# Lab Report Questions

1. You must always make sure to close the writer at the end.

2. File format is the way a file is written out that is designed for a scanner to be able to read and interpret the data within it, such as a csv file or txt file

3. No it is not possible; you would have to make a new scanner from the start