COP4342 - Fall 2018
Assignment 10
Gradebook

Objectives: Learn how to open files, perform file I/O using filehandles, close files, use the die function, apply the split operator, apply the push operator, write a sort subroutine, and more advanced use of hashes, the string repetition operator, and formatted I/O.

Instructions: Your assignment is write to a Perl program called *gradebook.pl* that reads in student and grade information from three different files, calculates an average, and writes a report out to a file. There are three input files called *students.txt*, *items.txt*, and *scores.txt*. The *students.txt* file contains student names and ids separated by a colon. Below is an example *students.txt* file.

```
Washington, George:12345
Adams, John:54321
Jefferson, Thomas:46813
Madison, James:99999
Monroe, James:55555
```

The *items.txt* file contains the different items that will be graded and the weight out of 100 for the final average. You should check that the total weight for all of the items is 100. Below is an example *items.txt* file.

```
exam1 25
exam2 35
asg1  10
asg2  15
asg3  15
```

The *scores.txt* file contains the scores that the students made on each of the items. Each line consists of a student id, the item, and the score. An example of a *scores.txt* file is given on the next page.

The output should be printed in the *report.txt*. The first line should be the headings. The second line should contain hyphens across the width of each field in the table. The width of the *Name* field is established by the longest name in the *students.txt* file. You can assume that the width of the *StuID* field and each of the *item* fields is 5 columns. The width of the *average* field is 7 columns. The remaining lines contain information for each student sorted in alphabetical order by their name. The average score is calculated using the weights for each item and the scores entered for each student. The report that was generated by my *gradebook.pl* solution given the input files shown earlier is shown on the next page. You should write your *gradebook.pl* solution so that your output matches mine exactly.

Submission: You should create a tar file formatted as 'Lastname_Firstname_Assignment10.tar' containing your *gradebook.pl* Perl program and submit the file through Canvas's 'Assignments' section **before** the beginning of class on 11/20/18. Sample command to put files in a tar file: tar -cvf yourfile.tar inputfile1 inputfile2. Sample command to extract the files from the tar file: tar -xvf yourfile.tar.

example *scores.txt* file

```
12345 asg1 90
54321 asg1 80
46813 asg1 70
99999 asg1 95
55555 asg1 85
12345 exam1 75
54321 exam1 85
46813 exam1 80
99999 exam1 90
55555 exam1 65
54321 asg2 85
12345 asg2 70
46813 asg2 90
55555 asg2 80
46813 asg3 90
99999 asg3 75
12345 asg3 80
55555 asg3 95
54321 asg3 60
55555 exam2 65
12345 exam2 45
46813 exam2 90
54321 exam2 65
99999 exam2 70
```

report.txt file produced from the sample input

Name	StuID	exam1	exam2	asg1	asg2	asg3	average
Adams, John	54321	85	65	80	85	60	73.75
Jefferson, Thomas	46813	80	90	70	90	90	85.50
Madison, James	99999	90	70	95		75	67.75
Monroe, James	55555	65	65	85	80	95	73.75
Washington, George	12345	75	45	90	70	80	66.00
average		79	67	84	65	80	73.35