Assignment #5

Due Date: Tuesday, March 15, 2016

Objective: Write a bash shell script to build class grade report.

Sample of the grade report file

Class Grade Report
Spring 2016
****

Name	Quiz	Homework	Midterm	FinalExam	Score	Grade
Jones	90	100	74	75	84	B
Bob	80	95	82	93	92	A-
John	70	99	87	98	96	A
Xiang	90	80	83	70	76	C
Frank	80	85	86	83	88	B+

Notes:

1. The average grade for each student is computed as the following

   ```
   grade = gradeQ*0.1+ gradeH*0.4  + gradeM*0.2 + gradeF*0.3
   ```

2. The average grade and course final grades for each student are computed by using **awk**.

The Detail

A Name the shell script as: your last name (lowercase!!!!) by the suffix .sh, ex: **lin.sh**.

B. The script needs take **two command line arguments**:

- FIRST: the awk script to do the grade computation: **grade.awk**.
- SECOND: the name of the output report file to be saved, such as **report.txt**

1. The bash script must check if there are two arguments provided, if not, print out an USAGE info and exit.
2. Check if the desired awk script exists, if not, warn the user, and exit
3. Check if the grade report file exists. If yes, the new to-be-collected data must be appended to the existing report.

C. Programing detail

- The bash script will display the grade report to screen if it exists, then ask if you want to enter a student record, a "yes" response will prompt you to enter student's name, then it will loop the grade type (**Q M H F**) and ask you to select the type and enter the corresponding grade (you can use **select or for loop** `for this`). The script needs to validate the entered score (0<=score<=100 and contains 0-9 digits only.

  When all the grades (Q, M, H, F) for this student are entered, the student average grade should be displayed to the screen (computed by the awk script). Meantime, the student information and the computed grade will be recorded to the output file, such as grade.txt

- A "no" answer will stop recording student grade information, display the current records in the report.txt to the screen, and exit the bash script

- The awk script shall read the newly-entered student's record (all the types of grades) and return the average grade and grade letter to the bash script. (**Note:** you can do the following to get the grade from an awk program: **`grade=`echo $line |awk –f grade.awk`**, where the $line is a list of scores separated by white space, such "Q 100 H 90 M 95 F 80" or just the scores if your awk script knows the order. The grade returned should be something like "`96 B`". Then, you can use the variable expansion of substrings, such as % and # to get the average score and letter grade. Or you can use the "cut" utility or other UNIX program to do such or use awk, such as:

```
score=`echo $grade | awk '{print $1}'`,
letter=`echo $grade | awk '{print $2}' `
```

D. The bash script should allow user to modify existing student's record in case the data file exists

After user entered student name, the script will check if such name exists in the report. If yes, it should display the grade during the grade input loop; ask user if it needs to be modified. At the end of input for this student, the existing record will be replaced by the newly input one.

What to turn in?

1. Create a directory hw5 under your cs390 repository, and work under it.
2. A tarball (hw5.tar.gz) on hw5 as the top directory which includes at least the following three files:
   - The bash script **`yourlastname.sh (lower-case PLEASE)`**
   - The awk script program **`grade.awk`**
   - The grade report file. **`report.txt`**

*Encrypt the tarball with the **LAST SIX (6)** digits of your A number; name the file as **hw5.tar.gz.rc2**. Add this file to your repository, cs390. Remember to update your cs390 repository on github with git push before 11:59 PM, March 15, 2016*