Programming Assignment #1

Grader

CS 2308.003, Fall 2011
Instructor: Jill Seaman

Due: in class **Thursday, 9/8/2011** (upload by **9:00pm Wednesday 9/7/2011**)

Problem:

Write a C++ program that will grade a series of exams and then print a grade report for students in a course.

Input: An instructor has a class of students each of whom takes a multiple-choice exam with 12 questions, each of which has 4 choices for the answer (a, b, c, or d). For each student in the class, there is one line in the input file. The line contains the answers that student gave for the exam. The input file named "grade_data.txt" will have the following format:

line 1: the key for the exam (e.g.)

bccbbadbcadd

lines 2-n: a set of answers.

You know you are done when you get to a line with no data.

Note: You will not know in advance how many exams you have to grade (but you may assume it is less than 1000). You should store no more than one student's answers in memory at any one point in time.

Processing: The program should read the input file and grade each exam and print out the score for that exam. It should also keep track of how many students earned each score (0-12) and print a report after the grading, including the average (mean) score.

Output: Here is an example of how the output should appear. You will write the report to an output file named "grade_report.txt"

student 1 - 8
student 2 - 10
student 3 - 1
etc.

Final Report
---
12 - 1
11 - 5
10 - 4
9 - 2
8 - 3
.
.
1 - 3
0 - 0

mean score - 6.25

NOTES:

- This program does not need to be done in a Unix environment. You may use whatever C++ programming environment (Visual C++, Dev-C++, etc.) you prefer.

- The program must be modular, with significant work done by functions. Each function should perform a single, well-defined task. Do not write trivial functions such as a function to output a single value.
  - You may want to have a function that grades the exam and returns the score when passed the key and and one set of answers.
  - You should probably have functions that take an array and number of students as paramaters and finds the mean.
  - You will probably want more than just these two functions.

- Note that you have 13 possible scores 0-12.

- I recommend using the getline method (see p. 127 in the book) for the input.

- You may want to use strcmp or strlen to test the input string.

- Add appropriate comments to document your code.

Logistics:

Include the following header at the top of the source code file (add your name, date and assignment number)

```
// File Name:
//
// Author:
// Date:
// Assignment Number:
// CS 2308.004 Fall 2011
// Instructor: Jill Seaman
//
// <Brief description of the contents and purpose>
```

Name your file **assign1_xxxxxxxxx.cpp** where xxxxxxxxx is your 9 character TX state ID number, the one that is on your ID card. It should look something like this: A04123456. If yours is just six digits, then add "A00" to the front.

There are two steps to the turn-in process:

1. Submit an electronic copy using the following upload link **by 9:00pm, Wed 9/7/2011**: http://www.cs.txstate.edu/~js236/homework (I will also put a link directly to this page on the course website). Click on CS2308.003, and log in with your Net ID and follow the directions to upload your file.

2. Submit a printout of the file at the **beginning of class on Thurs 9/8/2011**. Please print your name on the front page (stapled together if you have more than one page of output).