**CPSC 146: Term project, Due by April, 25th. (100 points)**

Write a C++ documented program to perform the role of a quiz maker. The program should randomly display True/False questions, record student's answers, keep track of the timing, and calculate the final scores out of 10.

The program should work as follows:

1. Prompt the student to enter their First name and Last name (both of type **string**), and ID (**a number of 6 digits**)
2. Validate the entered ID, if the length of ID is not 6 digits, stay at step 2 and prompt the user to re-enter the correct ID. **After 3 failed attempts**, exit the program. If the student entered a valid name and ID go to step 3.
3. **Randomly pick ten questions** with their answers form the Q and A arrays.
4. **Display one question at a time**. Get the answer then move to the next question.
5. Do not accept answers other than **true** or **false (T or F should be fine too).** The answers should not be case sensitive.
6. When the user is done with the quiz, **print out a report (On screen)** with the below information in it:
   * First name and Last name
   * Score
   * Elapsed time
   * Student’s answers and the correct answer.
7. Prompt the student to enter **Q to exit** the program, or to enter **S to clear the screen** and **start a new quiz for another student**.

* **Requirements**
  + The program skeleton will include two string arrays **Q** for questions and **A** for answers, that you will use to pick the quiz questions from.
  + In each quiz, your program should display ten unique random questions (no repeated questions).
  + Users have 10 minutes to complete the quiz, after 10 minutes the program should automatically terminates the quiz and report the outputs to the screen.
  + All questions have the same weight. 10 questions for 10 points.
* **Code optimization (breaking your code to functions):**

Modify your code to include the following functions:

1. bool Validate\_ID (int ID): to validate the length of the ID, if 6 returns true otherwise returns false.
2. bool Unique\_Question (int questionNumber): to check if the question already was used before in the quiz or not, if the question was used before returns false, otherwise returns true.

* **Grading Rubric:**
  + Workable Program 35
  + Using Code Optimization (Functions) 15
  + Correct output 25
  + Using descriptive variables names 10
  + Comments/readability of program 15
* **Extra Credits:**
  + (15 points) By default the quiz maker, will display 10 questions for the student, each question weight 1 point. Give an option for student to choose the number of questions in the quiz, **options will be 10 questions or 20 questions** before starting the exam:
    - If the student chose 10 questions, then each question weight 1 point
    - If the student chose 20 questions, then each question weight 0.5 point
  + (25 points) Modify your program so instead of having the questions and answers in your code, questions can be read from a text file name it “TestBank.txt” and answers from a text file “Answers.txt”, and dynamically during runtime assign the questions to **Q** array and answers to **A** array.

Good luck!

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