COSC 1560 – Computer Programming II

Assignment 10
Deadline April 9, 2021

A program is required to enable students to learn how to translate from American to English. The required data types, and the two text files, Translation.txt and Testers.txt, are the same as those defined in Assignment 9. Two separate programs are required for this assignment. The first program should be executed just one time, to move the information in the Testers.txt file to a binary file named Testers.dat (*this is a very short program*). The second program is the key component of this assignment, and is described below. Note that some of the required functions are the same as those developed in Assignment 9. The key difference with this assignment is that the Person structures are not read into an array, but are updated in the file.

Program 1

Read the Testers.txt information and write it to a binary file called Testers.dat. When writing to Testers.dat, the number of Persons should be written first, followed by the whole array.

Program 2

The key components of the main function should be as follows:

Call the 'readTranslation' function
Call the 'displayTesters' function
Invoke the 'testersUpdates' function to updates three tester's scores
Call the 'displayTesters' function

Required Functions

Translation* readTranslation(const string& filename, int& num);// Same as Assignment 9

The 'translation.txt' file name is passed as an argument, and is opened in the function. The first line of the file is read and a dynamically allocated array is created. The information in the file is read, and stored in the array. The array is then returned from the function. The number of translations is passed back as the second argument.

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void testersUpdates(const Translation t[], int numT, const string& fileName);

Pass the array of translations, the number of translations, and "Testers.dat" as the three arguments. Open the Testers.dat file, for both reading and writing, and read the first integer, which is number of people, and store in a variable named 'numP'. Prompt the user to enter the current Date, so that it can be used for any updates. Generate three random numbers, in the range 1 to 'numP'. For each of these numbers, read the corresponding structure from the file and store in a local variable. The 'takeTest' function should be called for that person. Their score, and Date, will then be updated and this single structure variable should be written back to the file.

void takeTest(const Translation t[], int numT, Person& p); // Same as Assignment 9

The Translation array, the number of translations, and a specific person, are passed as arguments. The person should be asked 10, randomly selected translation questions, chosen from the Translation array. The same question could be asked more than once. The average score achieved by the person will then be stored in 'p'.

void displayTesters(const string& fileName);

The "Testers.dat" file name should be passed as the argument to this function. Open the file and read the first integer. Use this number to create a 'for' loop in which one Person structure is read and displayed in each iteration. The information should be displayed in a well-designed format. Close the file. Note that there is no requirement to store the information in an array.

THE DEPARTMENT STANDARDS FOR "STYLE GUIDELINES" SHOULD BE FOLLOWED IN ALL CODE.