Lab 7

In Lab 7, you are required to write a program that input/output data from data files and manipulate strings. It contains **2** parts, which are demonstrated in below contents.

Part I (3.5 points)

This part will read data from *info.txt*, which contains 3 lines of students' information including student name, student ID and course name.

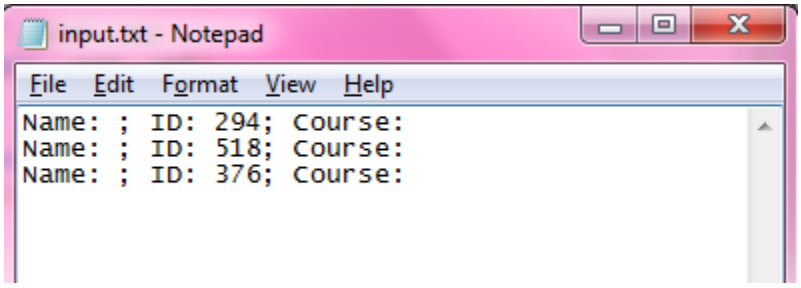


Figure_1 Data in input.txt

Follow below steps to fill in students' information and store updated information into *record.txt*.

1. Download and save *info.txt* under the same directory as the source file does;
2. Open the file in *input* mode and check the open status; if open successfully, read the line one by one until it fetches all characters;
3. Setup a counter to count number of lines/students; prompt user for the number of student (e.g., student1, student2, student3);
4. Call *replace* function to replace "Course: " with "Course name: " (notice there is a space after semicolon);
5. Create a string and store user input student's name one by one; call *insert* function to insert each student's name into the correct position;
6. Create another string and store user input course name one by one; concatenate current student information with each course name one by one;
7. Create and open *record.txt* in *output* mode, write the modified student's information into this file line by line;
8. Close all files when finishing above operations.

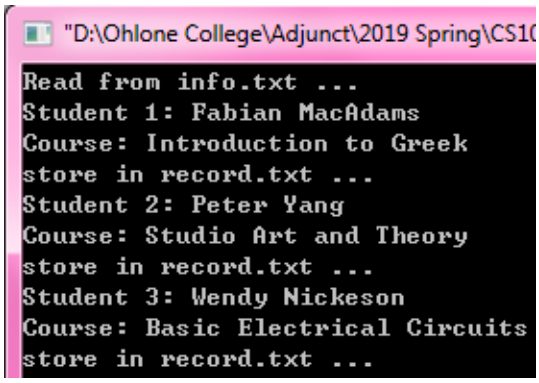


Figure_2 Sample output of Part I on console (monitor)

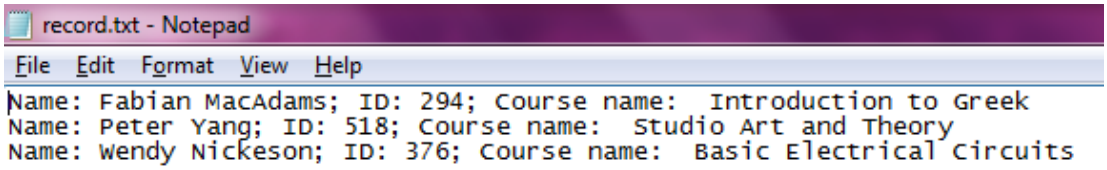


Figure_3 Sample data of record.txt

Part II (1.5points)

This part will reopen *record.txt* with *input* mode. If it opens successfully, read the line one by one in this file. Then perform below tasks:

1. Display the length of each line;
2. Evaluate if the student ID = 518 is existed in each line; prompt the user a message if it is found or not;
3. Close the file when finishing above operations.

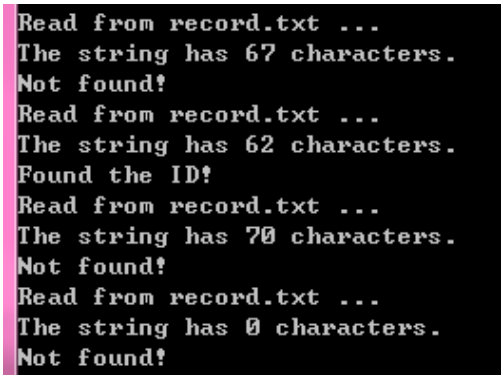
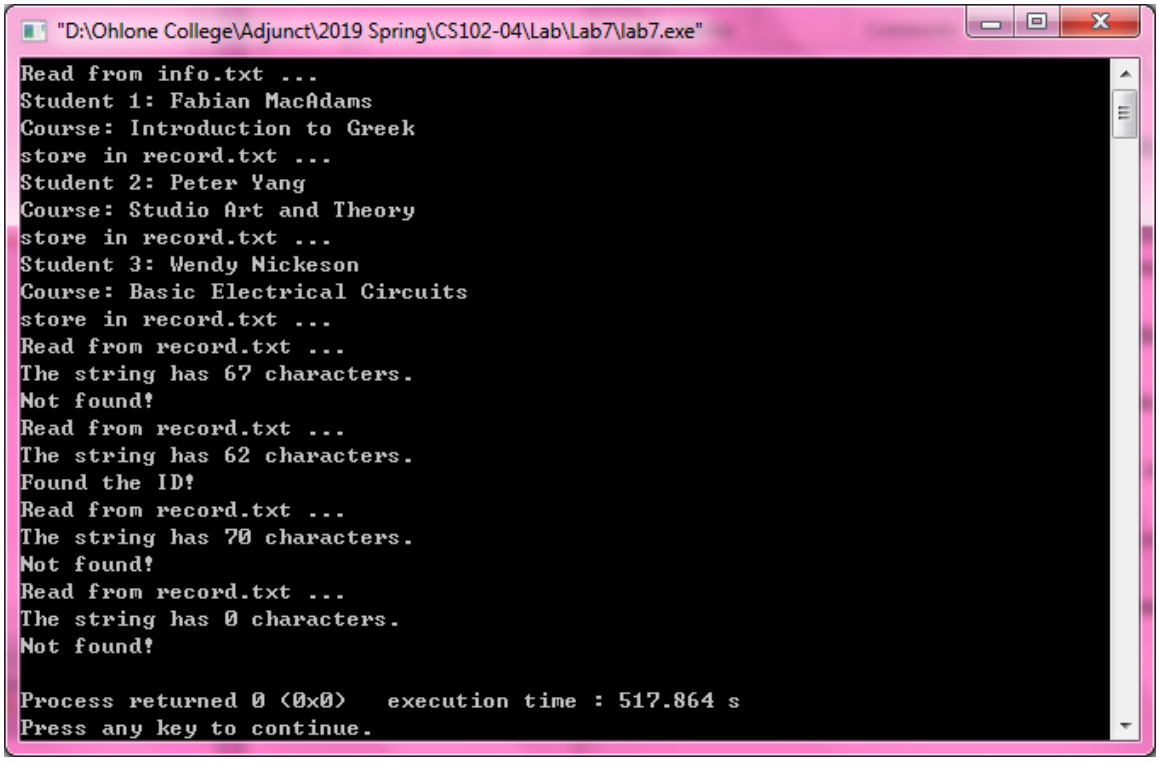


Figure_3 Sample output of record.txt

A sample output of this program is as following:



Requirement:

1. Submit 2 files on Canvas:
    a. the source file;
    b. record.txt.
2. NO programmer defined function is required in this program;
3. Your output on the console (monitor) is NOT required to be exactly same as the sample output, you can create different student and course names;
4. The format of student information in record.txt should be same as the sample data, which contains student name, student ID, and course name correspondingly and respectively;
5. Point(s) may be deducted if:
    - Missing file(s) or incomplete code, Syntax errors / logic errors;
    - No documentations or comments in the source file;
    - No calling of related functions under string class;
    - No evaluation of open files and/or no close files;
    - Incorrect output.