Ho Chi Minh City University of Technology

Faculty of Computer Science and Engineering

-CO1011- Programming Fundamentals-

Assignment Report: Faculty Management Program

Lecturer: Dr. Trần Tuấn Anh

Name: Nguyễn Hữu Trung Nhân Student ID: 1752392

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1/ Student Contribution:

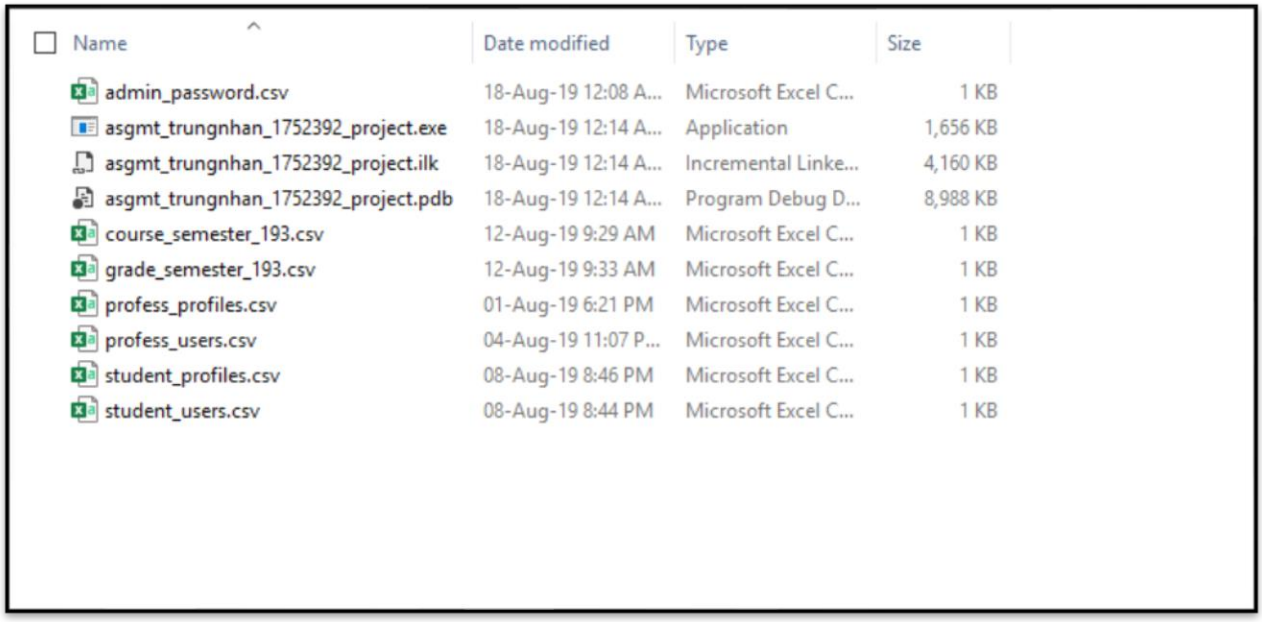
Name	Detailed	Contribution Percentage
1/ Nguyễn Hữu Trung Nhân	Building the entire Program; Write the entire Report.	100%

2/ The Location of Files:

In order to find the official database and the file .exe of this program, please follow the below instruction:

After extracting the "asgmt_program_trungnhan.zip", then follow this directory: asgmt_trungnhan_1752392_solution / Debug /

Figure 1

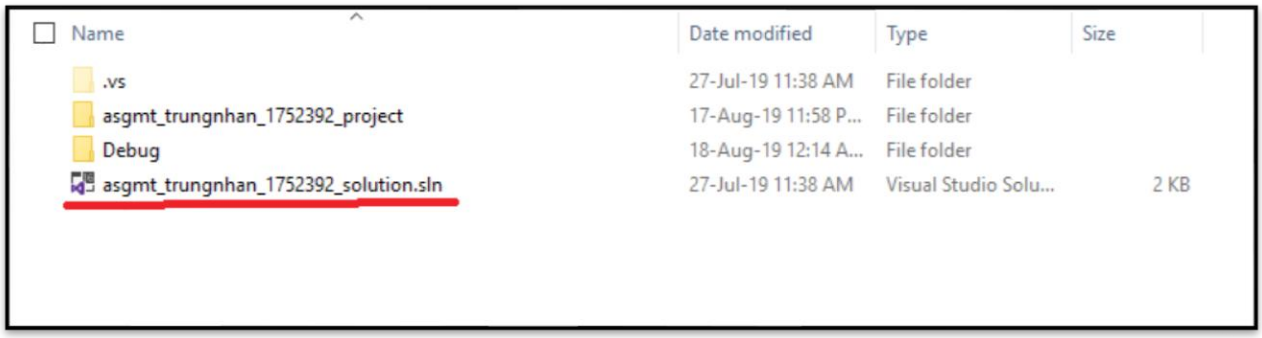


The .exe program will have the name "asgmt_trungnhan_1752392_project.exe" (Please don't change the name (or the location) of any files (or delete any files) because it may cause the program to run incorrectly). **This folder in Figure 1 will contain the Official Database as well as the .exe**

program. Any changes in the data when the program (file .exe) executing will be stored in the database (.csv files) located in this folder Figure 1.

If you want to open the entire solution, then after extracting the "asgmt_program_trungnhan.zip", please follow this directory: asgmt_trungnhan_1752392_solution /

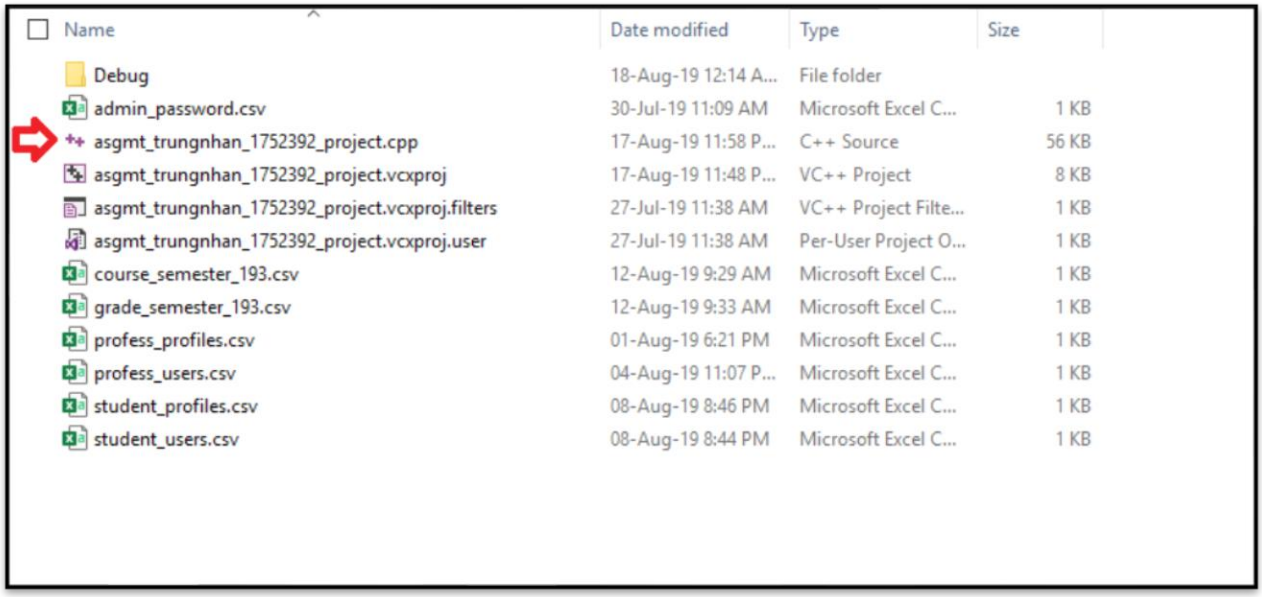
Figure 2



And if you want to see the source code (.cpp file) only, please follow this directory:

asgmt_trungnhan_1752392_solution / asgmt_trungnhan_1752392_project /

Figure 3

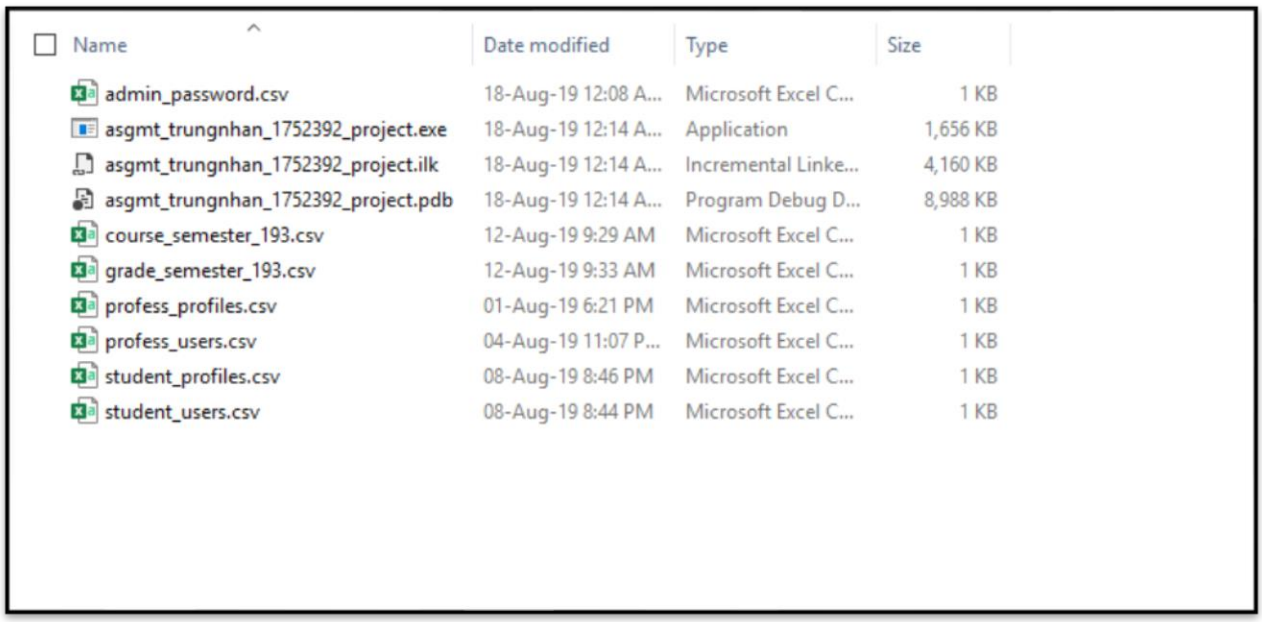


In this Figure 3 folder, there is also another database that is as same as the Official Database in Figure 1. However, the database in Figure 3 was used only when I built and implemented this entire Faculty Management Program.

3/ The Official Database Overview:

Please have a look at Figure 1 again. This Figure 1 is the picture of the folder that contains the execution file (.exe) and the Official Database (.csv files) **(Note: if you want to change anything in these .csv files, please be very careful because wrong format will make the program run improperly. Therefore, I suggest you change the data use the program file .exe or you can open these files by Notepad and strictly follow the format in the .csv file)**:

Figure 1



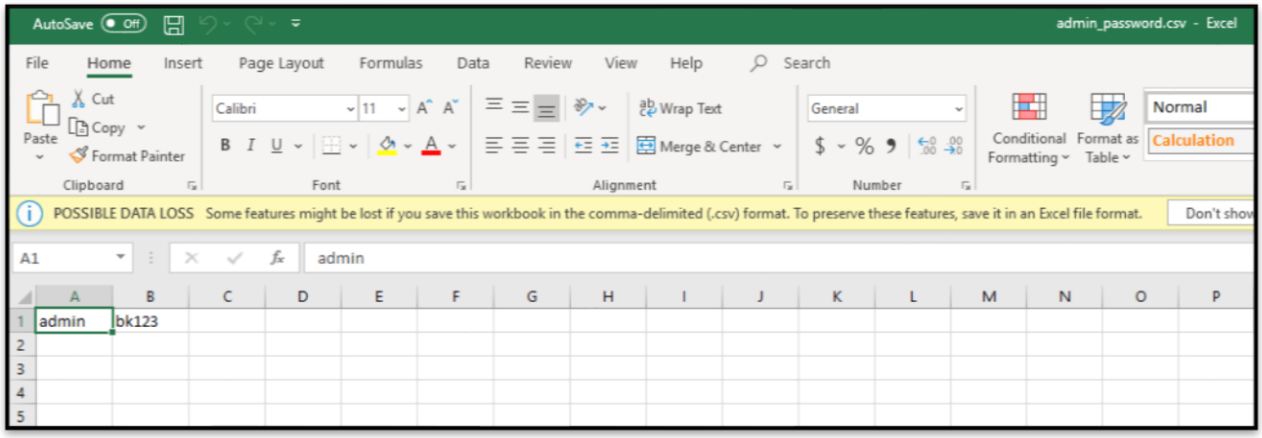
There are totally 7 files (.csv files) in the Official Database:

1. The “admin_password.csv” file
2. The “profess_users.csv” file
3. The “profess_profiles.csv” file
4. The “student_users.csv” file
5. The “student_profiles.csv” file

6. The “course_semester_193.csv” file
7. The “grade_semester_193.csv” file

3.1/ The “admin_password.csv” file:

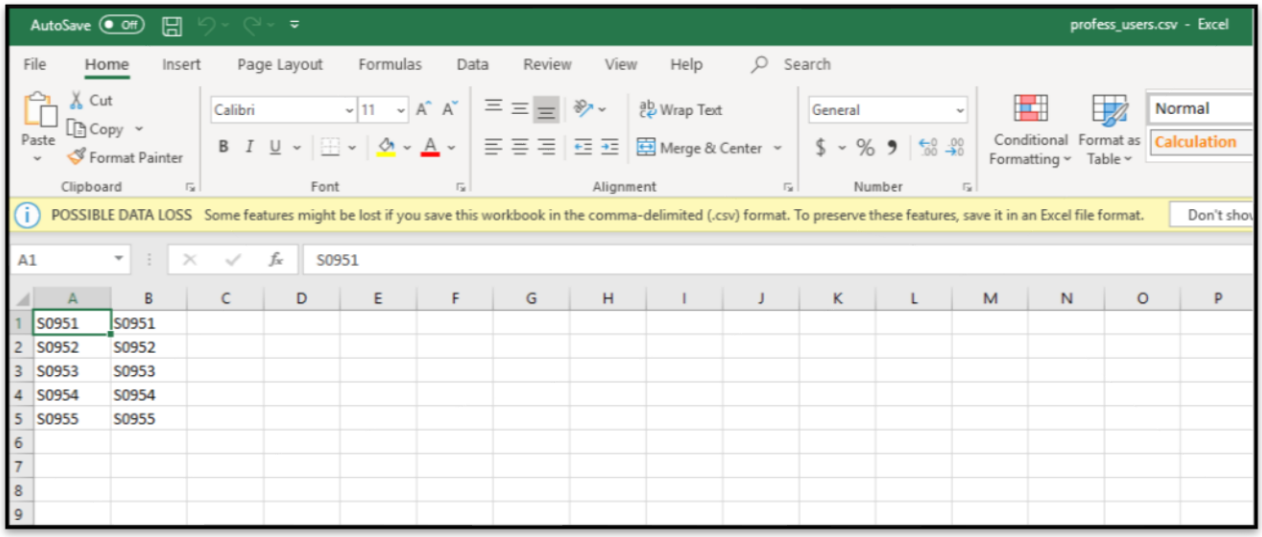
Figure 4



The “admin_password.csv” file contains the username and the password of the administrator of this program. There is only one administrator in my Faculty Management Program. The id name of the administrator “admin” will be store in column A and the password to login will be stored in column B.

3.2/ The “profess_users.csv” file:

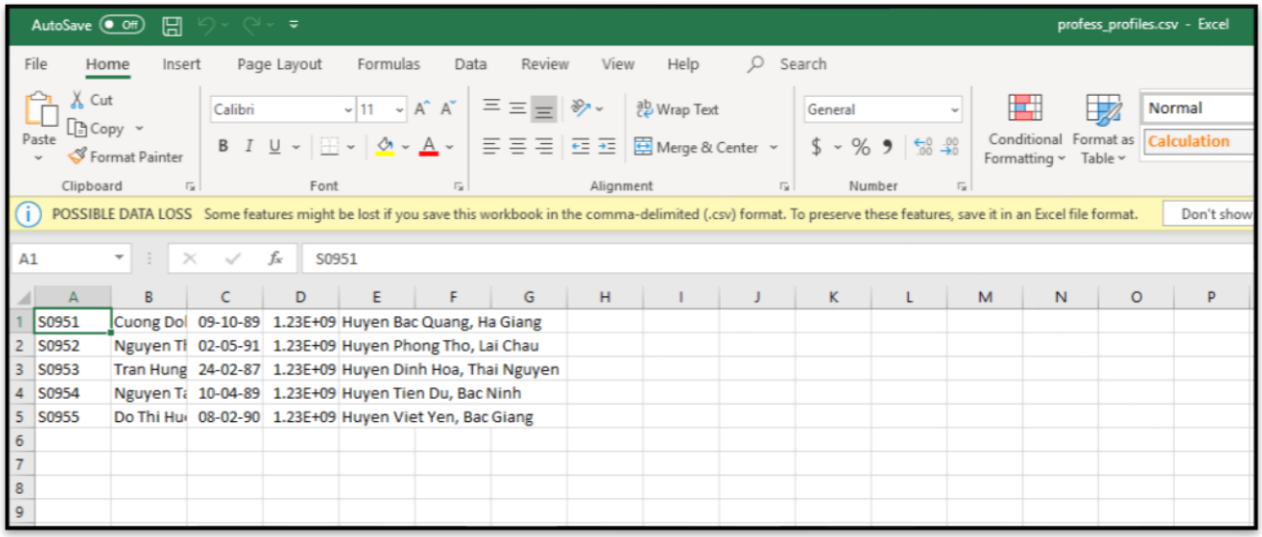
Figure 5



The "profess_users.csv" file contains the username (professor's ID) and the password of Professors. The professor's id will be stored in column A and the professor's password will be stored in column B.

3.3/ The "profess_profiles.csv" file:

Figure 6

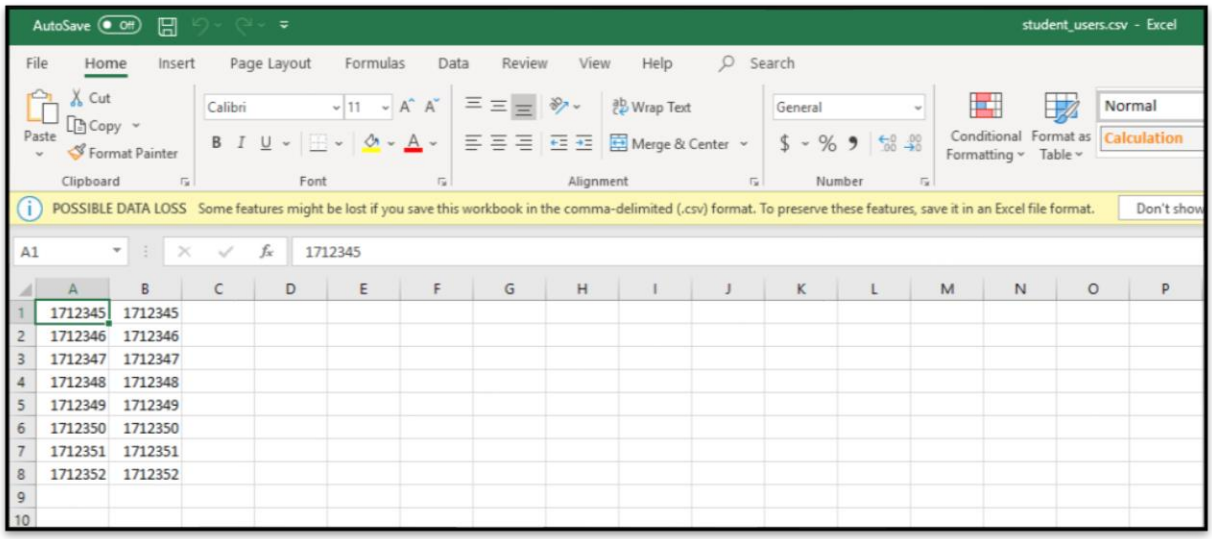


The "profess_profiles.csv" file contains the detailed information about each professor in the system. Column A stores professor's id, column B stores professor's full name, column C stores

professor’s birthday, column D stores professor’s phone number, and column E stores professor’s address.

3.4/ The “student_users.csv” file:

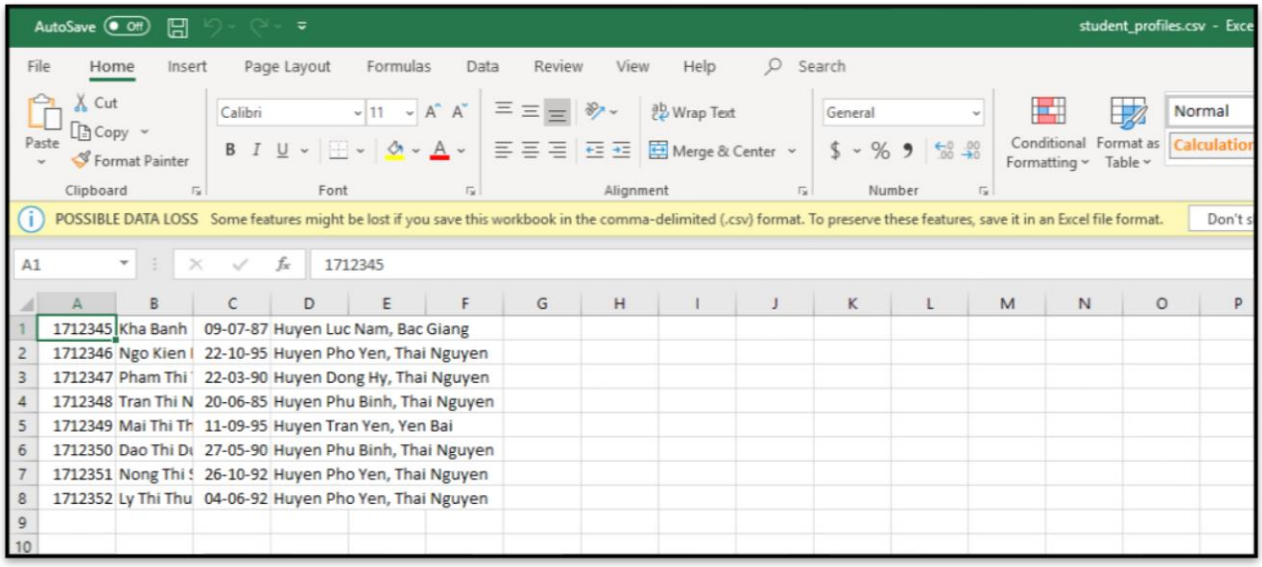
Figure 7



The “student_users.csv” file contains the username (student’s ID) and the password of students. Column A stores the student’s ID and column B stores the student’s login password.

3.5/ The “student_profiles.csv” file:

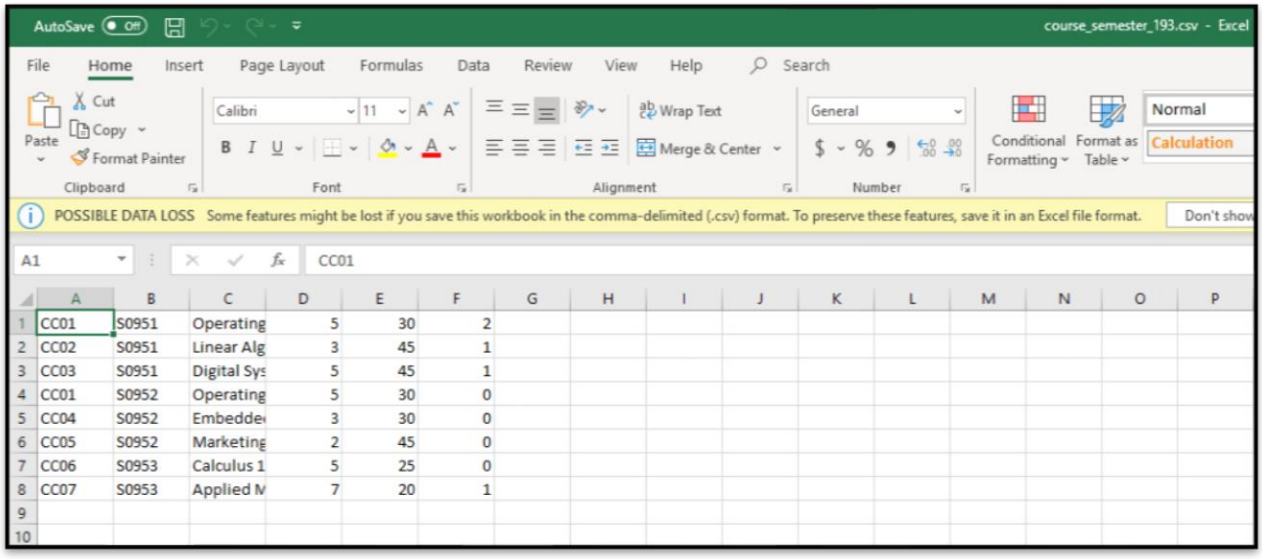
Figure 8



The "student_profiles.csv" file contains the detailed information about each student in the system. Column A stores student's id, column B stores student's full name, column C stores student's birthday, and column D stores student's address.

3.6/ The "course_semester_193.csv" file:

Figure 9

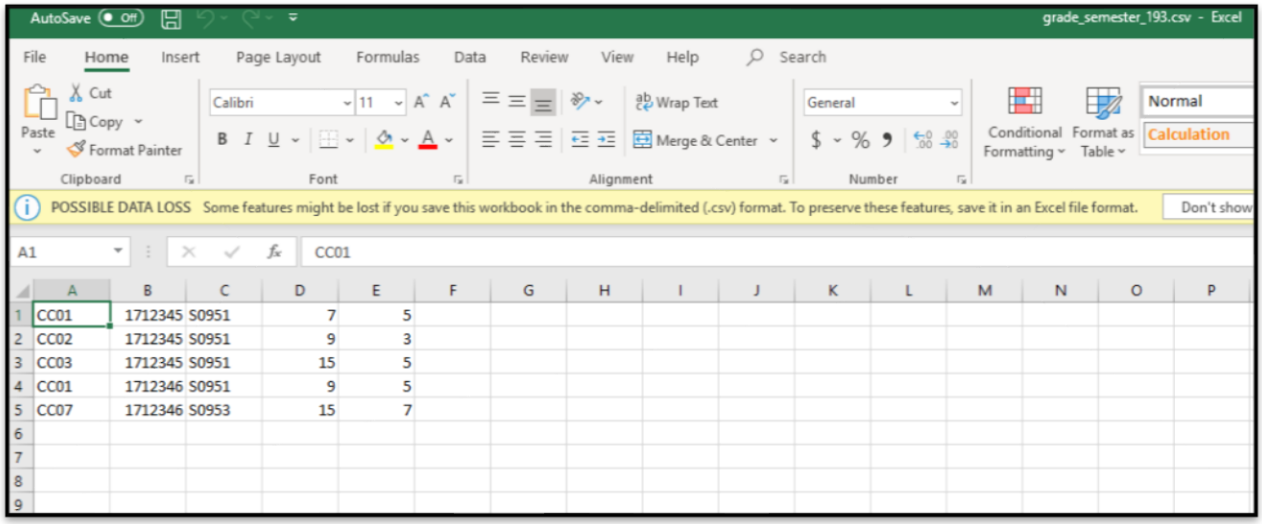


The “course_semester_193.csv” file contains the detail of courses that is opened in the semester. In my assignment, I assume that the courses are for one semester (I choose semester 193). Assuming everything happens in one semester is easier for me to manage the data. In the future, if the administrator who use the program want to open course for another semester (for example semester 191), he will have to create a new .csv file (for example “course_semester_191.csv”) and he will have to modify the source code by using the tool in the IDE app and choose “replace all” the string “course_semester_193.csv” to the new file he wants (for example “course_semester_191.csv”). For instance, in my personal way, if in the future, I want to manage the courses in another semester (maybe semester 191), I will create a new file name “course_semester_191.csv”. Then, I will open the source code in Visual Studio 2019 (because I used to use this software when programming), using the search tool to search and “replace all” the string “course_semester_193.csv” to “course_semester_191.csv”. **However, in this assignment, to make everything simple, I just manage the course in one semester only (and I choose semester 193).**

Column A stores the code of the subject, column B stores the id of the professor who teaches that subject, column C stores the name of the subject, column D stores the number of credits of that subject, column E stores the maximum number of students that can join the course, and column F stores the number of current students who have registered the course.

3.7/ The “grade_semester_193.csv” file:

Figure 10



	A	B	C	D	E
1	CC01	1712345	S0951	7	5
2	CC02	1712345	S0951	9	3
3	CC03	1712345	S0951	15	5
4	CC01	1712346	S0951	9	5
5	CC07	1712346	S0953	15	7
6					
7					
8					
9					

The "grade_semester_193" contains the information about the student's final grade in the registered courses. **In this assignment, to make everything simple, I just manage the student final score in only one semester (and I choose semester 193).** However, in the future, if I want to manage the student's scores in another semester, I will just make a little change in the source code as well as create the new .csv file to store the student's scores in that new semester. But at present, as I mentioned: "**In this assignment, to make everything simple, I just manage the student final score in only one semester (and I choose semester 193)**".

Column B stores the id of the student, column A stores the code of the subject which the student registered before, column C stores the id of the professor who teaches the course.

Column D stores the Final Score of the student in the Course. Final Scores range from 0 to 10. **Final Score equals to 15 means that the score has not been published by the professor (the professor will update the final score for the student later)**.

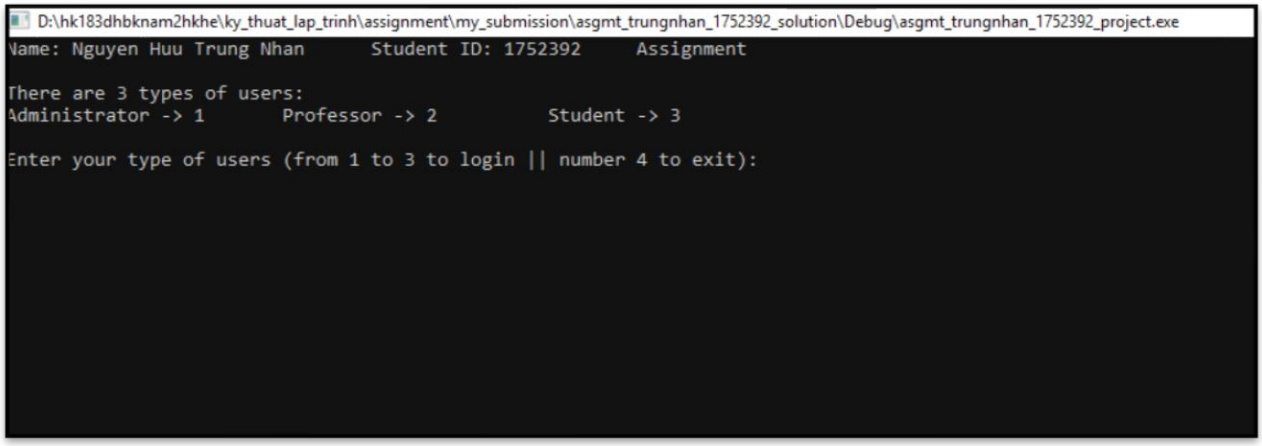
And finally, column E stores the number of credits of the registered subject.

4/ Instruction on How to run the program:

In order to the program, please open the execution file "asgmt_trungnhan_1752392_project.exe" (please read 2/ The Location of Files again to see the directory of this execution file). When you open this "asgmt_trungnhan_1752392_project.exe" file, you will see the following picture:

(Note: Please CLOSE ALL the .csv files of the Official Database before running the program)

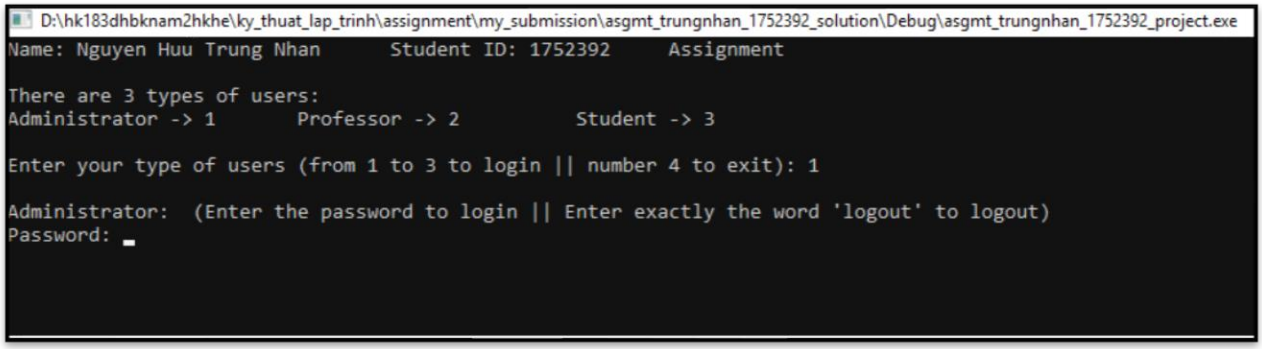
Figure 11



You will enter number 1 if you are the administrator, number 2 if you are the professor and number 3 if you are a student. If you enter number 4, you will exit the program. Besides, if you enter another number or invalid input, the program will terminate.

4.1/ Administrator Functions:

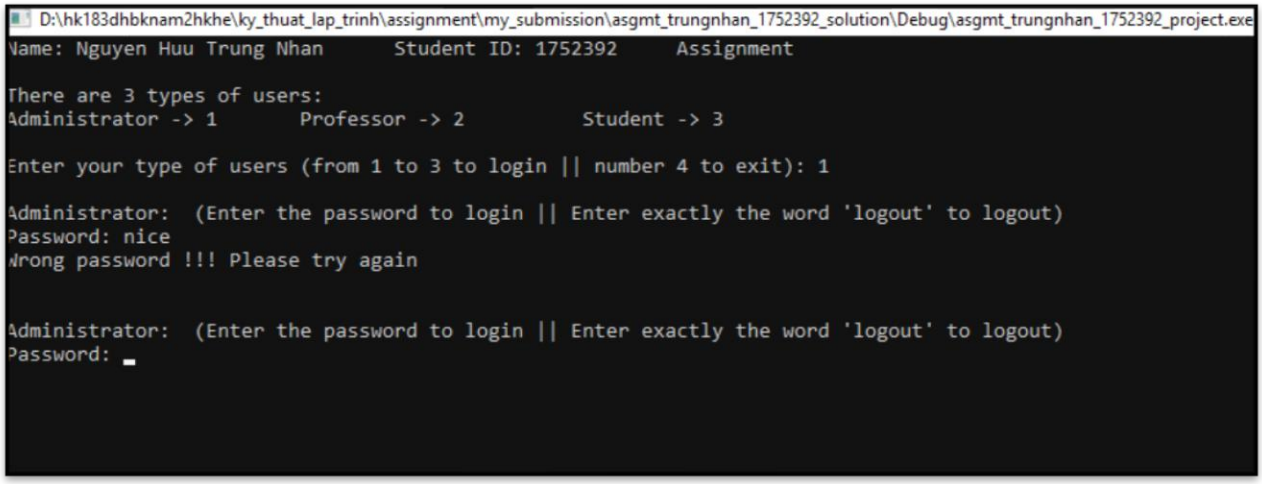
Figure 12



You enter the correct password to login (Note that this is case sensitive). The password is stored in the “admin_password.csv” file, if you forget the password, you can open this file to check again. If you want to logout, please enter exactly the word ‘logout’ to logout.

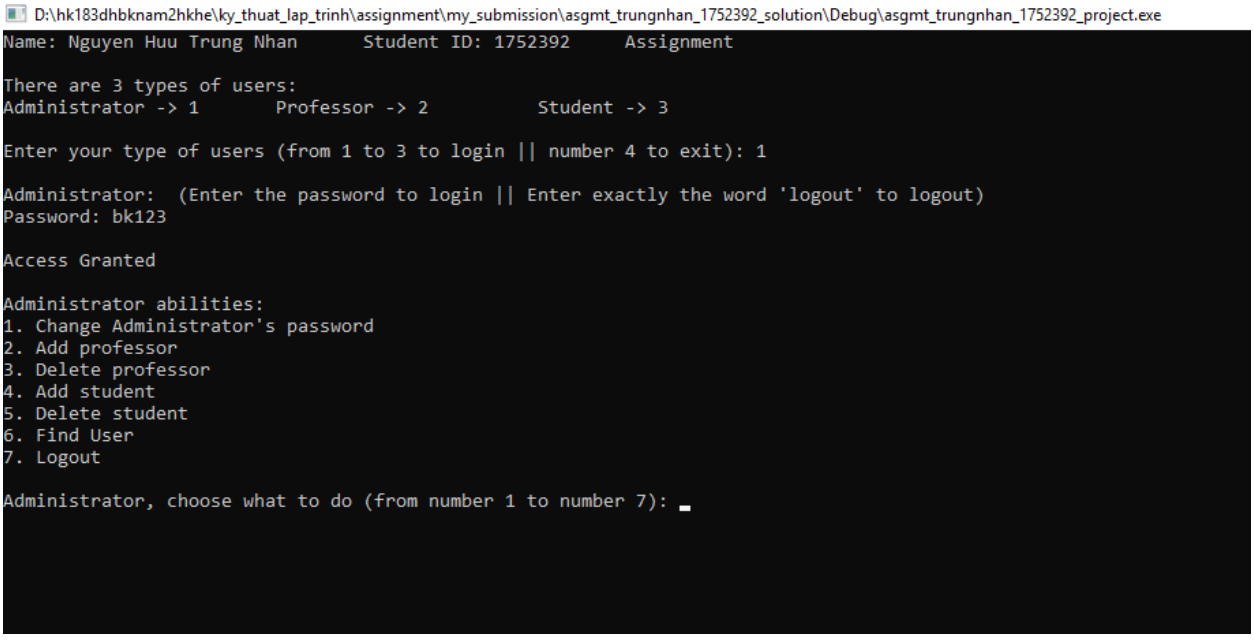
If you enter the wrong password, the Program performs as the below picture Figure 13 and then you can enter the correct password again or you can logout.

Figure 13



4.1.1/ Change password:

Figure 14

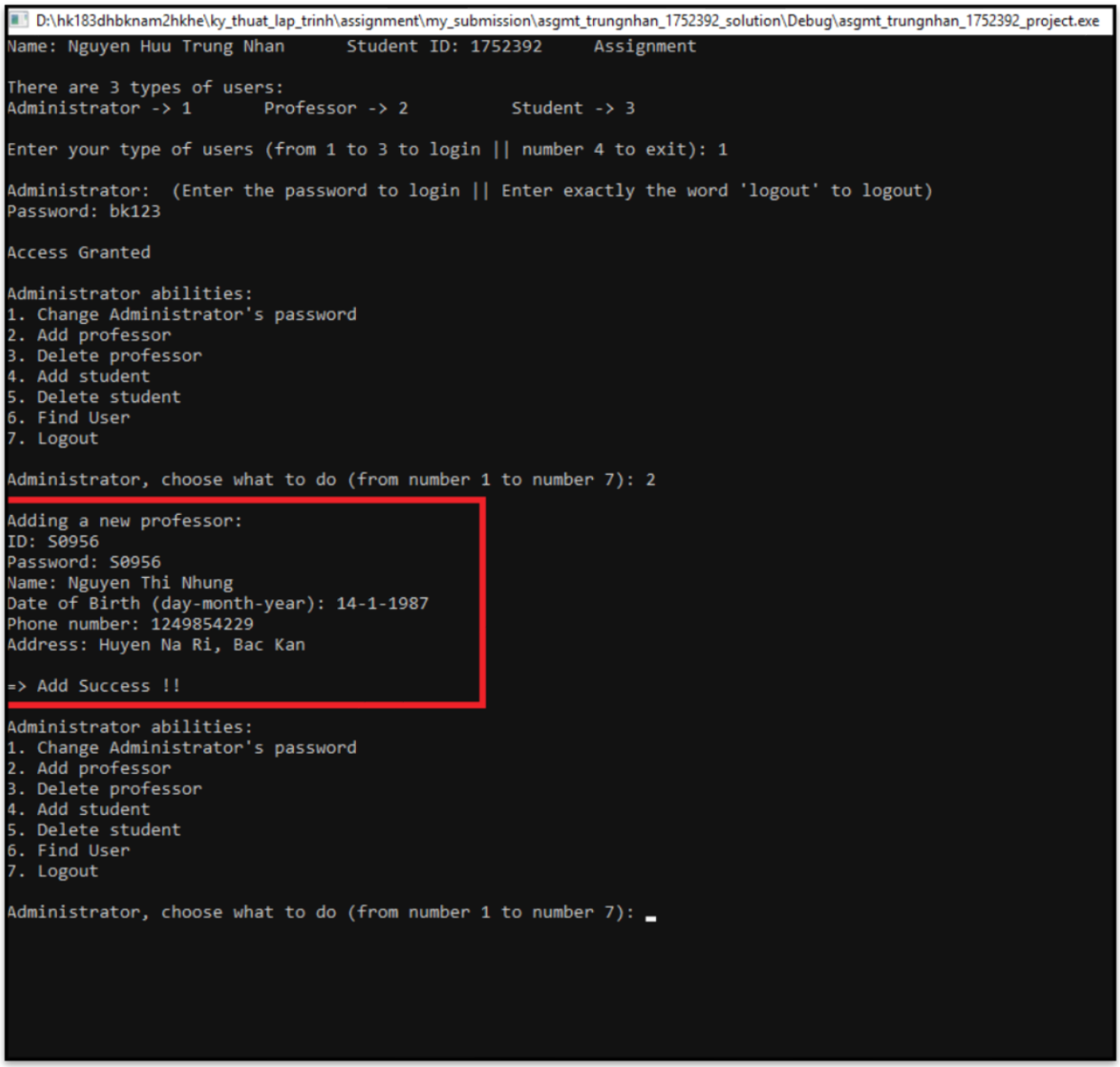


After login successfully, the console will appear as the above picture, in order to change password, enter number ‘1’, and then just follow the instruction of the console to change administrator password. The new password will then replace the old one in the “admin_password.csv” file in the Official Database. If you want to check the change, you can find “admin_password.csv” file by follow the directory mentioned in section 2/ The Location of Files and open it to see the change.

4.1.2/ Add professor:

To add new professor, when the console appears as Figure 14, you just need to enter number ‘2’. And then just follow the instruction of the console to add new professor. Here is an example:

Figure 15

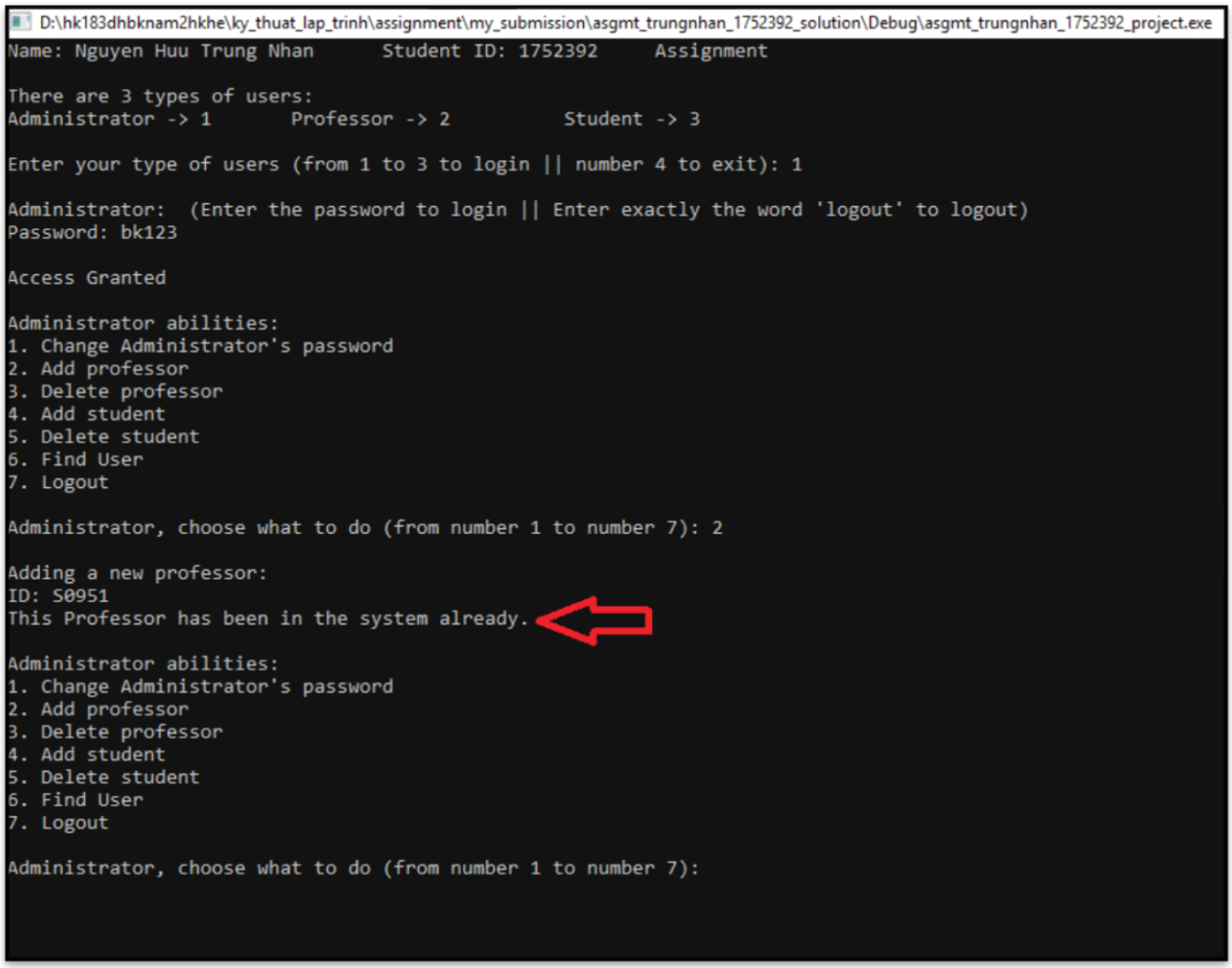


The new inputted ID and Password will be stored in “profess_users.csv” file. And the information about Name, Date of Birth, Phone number, Address will be stored in “profess_profiles.csv” file.

If you want to check for the change in those two files, please follow the directory mentioned in section 2/ The Location of Files.

If the administrator enters the new Professor ID that has been existed in the system already, the console will appear as below:

Figure 16



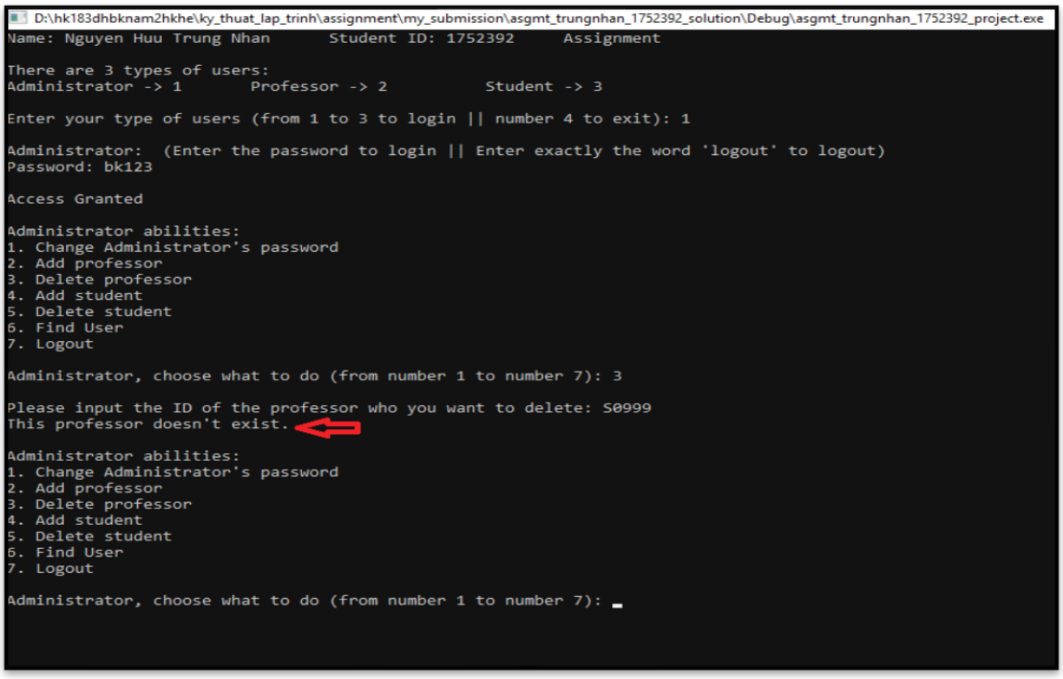
4.1.3/ Delete professor:

To delete a professor in the system, when the console appears as Figure 14, you enter number '3'. Then, just follow the instruction of the console to delete a professor in the system. When the Professor is deleted successfully from the system, the information about the username and password which are used to login into the system stored in the "profess_users.csv" file will be deleted, and also, the profile about the professor (name, phone number, address,…) which is stored

in the “profess_profiles.csv” file will be deleted. However, the file “grade_semester_193.csv” which stores the student’s grade will not be affected, because in my opinion, in case the student studies with the professor A (for example), when we delete professor A, the information about the student’s score will not be affected. Besides, if professor A (for example) has opened some courses (the information of these courses is stored in “course_semester_193.csv” file), when the administrator deletes professor A, these courses will not be deleted (“course_semester_193.csv” file will not be affected). Because, in my own opinion, I think in real life when professor A has opened a course named Z (for example), and students register this Z course. When the students are studying the Z course with professor A, suddenly the university don’t allow professor A to teach at the university anymore and they delete professor A from the system, so in this case, I think the course can not be deleted with professor A. Personally, I think the university will recruit a new professor B (for example), give him the ID of the deleted professor A, assign professor B to the system by “Add professor” function to let him continue to teach the courses that the deleted professor A has opened. This is my personal reason why the file “course_semester_193.csv” is not affected when deleting a professor.

If you enter a professor’s ID that does not exist in the system, the console will appear as below:

Figure 17



4.1.4/ Add student:

To add new student, when the console appears as Figure 14, you enter number ‘4’. Then, just follow the console’s instruction to add new student to the system. If you enter the existed student ID, the Program will inform you that the ID has existed already.

4.1.5/ Delete student:

To delete a student in the system, when the console appears as Figure 14, you enter number ‘5’. Then, just follow the console’s instruction to delete a student from the system. If you enter the student ID that doesn’t exist, the Program will inform you that ID doesn’t exist.

When a student in the system is deleted successfully, the information about ID and Password of that student in “student_users.csv” file will be deleted. The information about the student profile (name, address…) in “student_profiles.csv” file will be deleted as well. Moreover, all the courses which were registered by that student and the final scores of that deleted student stored in “grade_semester_193.csv” file will be deleted all. And in “course_semester_193.csv” file (Please have a look at section 3.6/ again), in column F, the number of current students in the courses which were registered by the deleted student will be decreased 1 unit (you can check “course_semester_193.csv” file, column F, please remember the course which is registered by the student you deleted, and check if it changes).

4.1.6/ Find user:

To find the information of any user in the system, when the console appears as Figure 14, you enter number ‘6’. Then, just follow the console’s instruction. The console will give you the profile information of the user you search. If the entered ID doesn’t exist, the console will inform you.

4.2/ Professor Functions:

Please follow the instruction of the console to enter the Professor Mode. And then, you enter the correct ID and Password to login. If you don’t want to login anymore, you can type exactly the word ‘logout’ in the “input ID part” or in the “input password part” to logout.

4.2.1/ Change password: Please follow the instruction of the console to Change the Professor password. The new password will then replace the old one in “profess_users.csv” file.

4.2.2/ Open course:

Please follow the instruction of the console to Open a new Course and enter the necessary information (credits, maximum number of students…). If the professor tries to open the course that is already existed, the console will inform that professor.

Each professor can open maximum 5 courses in semester 193. If professor A (for example) has open 5 courses already, when he enters this "Open Course" function, the console will inform him that he can not open anymore courses in semester 193.

The data about the courses is stored in "course_semester_193.csv" file of the Official Database.

4.2.3/ Modify student's scores:

Please follow the instruction of the console to modify student's scores. The student scores will be stored in "grade_semester_193.csv" file of the Official Database.

4.2.4/ Summarize student's scores in a course:

Please follow the instruction of the console to summarize student's scores in a course. This function will print to the console the final scores of all students who attended the course.

4.3/ Student Functions:

Please follow the instruction of the console to enter the Student Mode. And then, you enter the correct ID and Password to login. If you don't want to login anymore, you can type exactly the word 'logout' in the "input ID part" or in the "input password part" to logout.

4.3.1/ Change password: Please follow the instruction of the console to Change the Student password. The new password will then replace the old one in "student_users.csv" file.

4.3.2/ Register course:

Please follow the instruction of the console to register the course. If you enter subject code that is not opened in the semester, the Program will inform you. If you register a course which has been registered already in the semester by you, the Program will inform you.

If the total credits of the student A (for example) more than 20 credits, the program will inform student A that he can not register any more course.

Another case is that, for example student A has registered 15 credits. However, he wants to register a new course that has 6 credits, the Program will inform student A that he can not register this 6-credit course. However, student A still can register a 5-credit course or a 4-credit course or 3-credit, or 2 (or 1)- credit course.

And when the student registers a new course successfully, the data will be stored in "grade_semester_193.csv" file and the current number of students in the course (which is stored in column F in "course_semester_193.csv" file) will increase by 1 unit.

If the student registers a course but that course is full, the program will inform the student.

4.3.3/ Remove course:

Please follow the instruction of the console to remove the course if you are a student user.

If removing course is success, the data about the course stored in "grade_semester_193.csv" file will be deleted. However, if the final score of that course has been updated by the professor. Then the student cannot remove the course. And in this case, the Program will inform the student user so he can understand the situation.

If the student tries to remove the course that he didn't register. The Program will inform the student that he has not registered for that course.

4.3.4/ View GPA:

Please follow the instruction of the console to view the GPA. The Program will print the Final Scores of all the courses of the student to the console.

4.3.5/ View registered courses:

Please follow the instruction of the console to view the registered courses. The Program will print the registered courses of the student to the console.

4.3.6/ View courses in the semester:

Please follow the instruction of the console to view the courses in the semester. The Program will print the information of all courses in the semester to the console.

4.3.7/ Find Course:

Please follow the instruction of the console to find course. The Program will print to the console every information about the courses that the student is looking for if the subject exists. Otherwise, the Program will inform the student so he can understand the situation.

---------The End---------