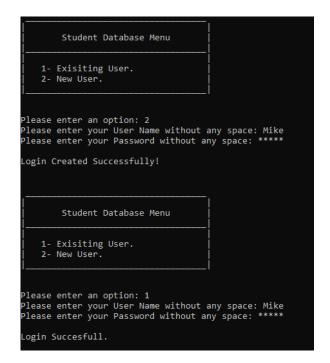
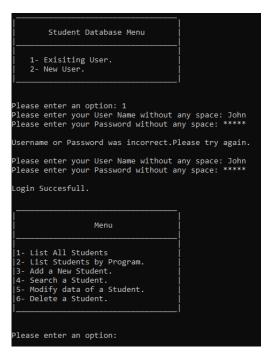
Marks: 12 Due: Week 15, December 09

Question

In this project you will be creating a student record management system using File I/O operations on objects. You will be using sequential and random file access operations.

- 1- Create a **Student** class that contains the following members: ID, Name, Program, Email, Phone Number, Attendance and CGPA.
- 2- Create getter functions for all data members. Create setter functions for Program, Email, Phone Number, Attendance and CGPA.
- 3- The data of student objects can be saved in a file by those users who have an existing account. Please use the following Menu to check if the user already has an account. If the user does not have an account, allow the user to create an account and then allow the user to login using that information. The data of all users can be saved in a file and can be used for matching username and password information. A sample output is shown below for creating an account for new user and for logging in as an existing user.





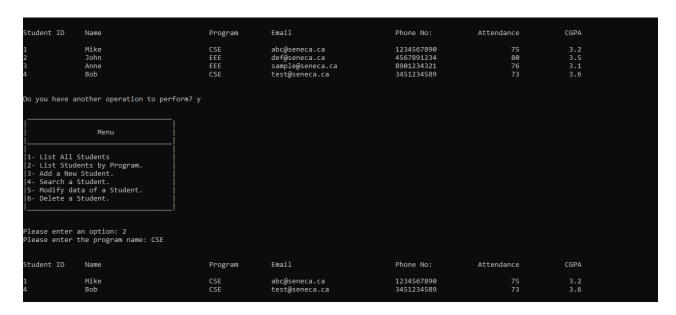
1a. Creating a new account

1b- Logging in using an existing account

- 4- Once the user has logged in with valid credentials, show the menu to the user as shown in figure 1b above. The user should be able to list all existing students, list students by program, add a new student, search a student using ID, modify data of a student (only those data members can be modified which have setter function) and delete a student.
- 5- Some sample operations are shown below:

```
1- List All Students
2- List Students by Program.
3- Add a New Student.
4- Search a Student.
5- Modify data of a Student.
6- Delete a Student.
Please enter an option: 3
Please enter Student's ID: 1
Please enter Student's Name: Mike
Please enter Student's Program: CSE
Please enter Student's Email: abc@seneca.ca
Please enter Student's Phone Number: 1234567890
Please enter Student's Attendance: 75
Please enter Student's CGPA: 3.2
Do you have another operation to perform? y
                                               Menu
  1- List All Students
2- List Students by Program.
3- Add a New Student.
4- Search a Student.
5- Modify data of a Student.
6- Delete a Student.
 Please enter an option: 1
 Student ID
                                         Name
                                                                                                                           Program
                                                                                                                                                                    Email
                                                                                                                                                                                                                                                     Phone No:
                                                                                                                                                                                                                                                                                                           Attendance
                                                                                                                                                                                                                                                                                                                                                                     CGPA
                                         Mike
                                                                                                                                                                    abc@seneca.ca
                                                                                                                                                                                                                                                     1234567890
```

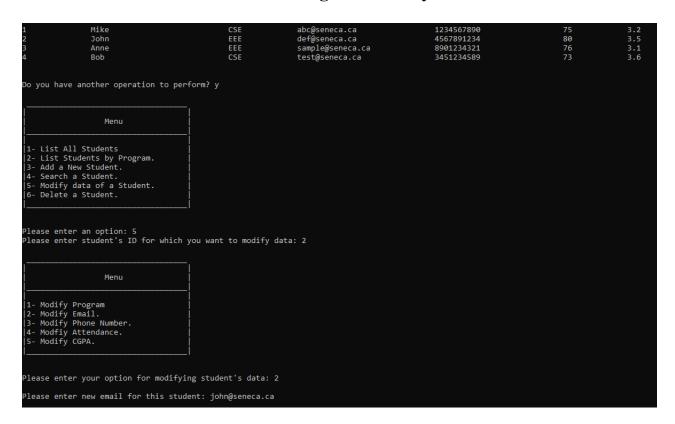
2a- Adding a New Student and Listing All students



2b- Listing students by program

| Student ID | Name | Program | Email | Phone No: | Attendance | CGPA |
|---|--|--------------------------|--|--|----------------------|--------------------------|
| 1 2 3 4 | Mike John Anne Bob | CSE EEE EEE CSE | abc@seneca.ca def@seneca.ca sample@seneca.ca test@seneca.ca | 1234567890 4567891234 8901234321 3451234589 | 75 80 76 73 | 3.2 3.5 3.1 3.6 |
| Do you have another operation to perform? y | | | | | | |
| | Menu | | | | | |
| 3- Add a New 4- Search a | lents by Program. Student. Student. Ita of a Student. | | | | | |
| Please enter Please enter | an option: 4 student's ID: 3 | | | | | |
| Student ID | Name | Program | Email | Phone No: | Attendance | CGPA |
| 3 | Anne | EEE | sample@seneca.ca | 8901234321 | 76 | 3.1 |

2c- Searching a student by id



2d- Modifying record of a student by id



2e- Deleting record of a student by id

Submission requirements:

- 1- The sample run of the program shown above is just an example of the output that could be produced by the program, however, you can modify this output to make your program more user-friendly.
- 2- Please note that it is required to include all necessary error checking.
- 3- This project must be **shown and run** in the last lab (Dec 09) and submitted on the BlackBoard before the deadline, or it will be awarded a 0.
- 4- The project should be submitted as a single PDF file. The project file should include the source code, the user's manual, and the samples of the program's outputs (i.e., screen captures).
- 5- Under no circumstances an extension will be granted for this project.

IMPORTANT: If you are not able to show the program in your last lab class, you can show your program earlier.