Green University of Bangladesh
Department of Computer Science and Engineering (CSE)
Faculty of Sciences and Engineering
Semester: (Summer, Year:2021), B.Sc. in CSE (Day)

Course Title: Object Oriented Programming Lab

Course Code: CSE-202 Section: DD

Lab Project Name: Course Registration System.

Student Details

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Submission Date : 17/09/2021
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Lab Project Status

Marks: …… **Signature: .....**

Comments: ..... **Date: .....**

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Chapter 1

Introduction

1.1 Introduction

The project is based on a system where students can register for courses for the upcoming semester. The System is programmed using java, and the user interface is created using java's SWING class. The System handles data by reading and writing files and manipulating strings taken from the user. The user can easily interact with the interface by writing on text fields, pressing buttons and selecting options. The user interface also allows the user to edit and display various types of data and warns the user if any wrong information is given as input. In the System, the user has to provide his name, student ID, and password to move on to the registration form. The form asks the user to select information such as course name, section, batch. After selecting all the input fields, the user can press a button to add courses accordingly.

The user is given the additional options to see registration list and change the password for the respective account. The user can also re-register by logging in again.

1.2 Design Goals/Objective

The goal of the project was to create a program with simple easy to understand user interface.

There were many objectives besides that which includes:

- Creating a course management system software using Java.
- Creating accounts for each student and changing the data of each individual accounts, identical to an actual database.
- Making the interface as interactive as possible.
- Using only basic programming knowledge like file read/write, strings and other functions.
- Identification of users by verification of login credentials.

Chapter 2

Design/Development/Implementation of the Project

2.1 User Interface Design

The interface is made using Java's swing class and AWT (Abstract Window Toolkit) class. The user interface mainly consists of four windows that are:

- Login
- Registration form
- Registration list
- Change Password

The interface has other pop windows displaying information based on user inputs as well.

The user interface design is kept simple and basic for user understandability.

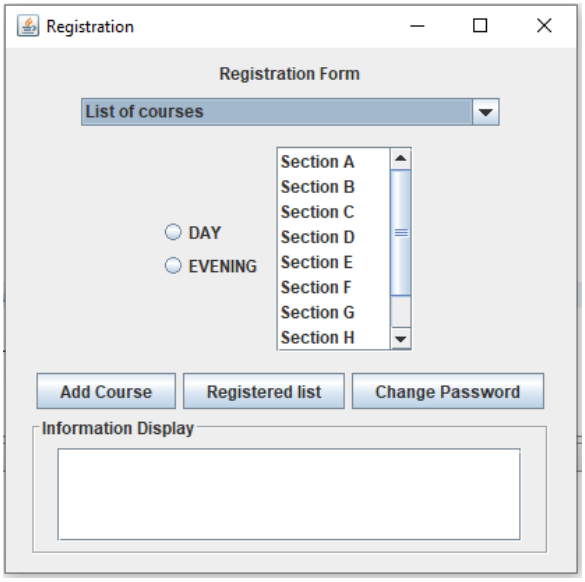
2.1.1 List of Elements

The list of elements used in the interface are:

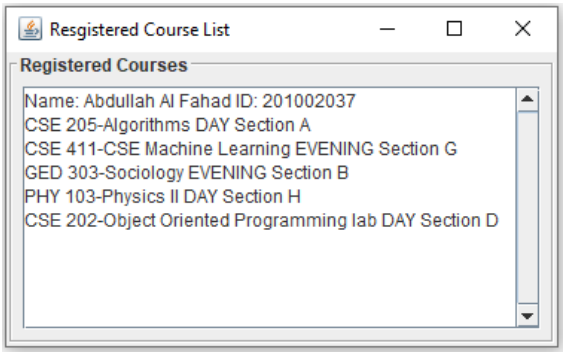
- Image Icon
- Label
- Text box
- Text area
- Radio Button
- Combo box
- List.
- Button
- Scroll-pane

2.1.2 Visual Representation

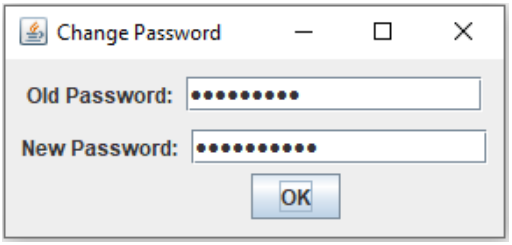
Login Screen



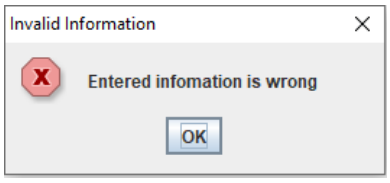
Registration Form



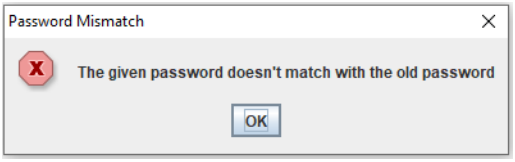
Registered Course List



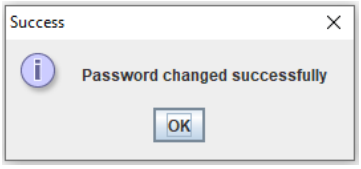
Change Password



Invalid Information



Password Mismatch



Success

2.2 Design Procedure

1. A Jframe object is created at first for the login screen with a title of “Registration Programme” and with flow layout. Then the width is set to 322 and height is set to 250.

2. Three labels are added Name, ID, Password with three text fields and a login button to the frame.

3. An ImageIcon is also added.

4. Then 5 Jpanels are created to have textfield, labels, button and image icon as single entities.

5. After that the 5 panels are added to another panel with boxlayout so that all the elements of the interface stay in place even when resizing the window.

6. The Registration form frame is also created using boylayout in a similar way with radio buttons, Jlist, Combox, textarea and buttons as its elements.

7. Password frame is a more basic design implementation of the first frame.

8. Pop-up messages are created using the help of JoptionPane.

2.3 Logic & Algorithm

- When the program is run the file that contains the user information is read from. Then the taken user inputs is compared to the file’s information. If any of the line matches with the user’s inputs, a file is created in the name of user’s Student ID and a new window is set to visible, if not it shows a pop-up error to the user saying the given information is wrong.

- In the new window there are three buttons for three operations. Pressing 1st button checks if there is null keyword in our selected input by splitting our input string by whitespaces. If all buttons are selected the inputs gets concated as strings and is appended to the file created in the first window. If not, it shows an error message saying to the user to select all the fields.

- Pressing the 2nd button reads the file created in first windows and stores the read data in a string. After that, the string is shown in a text area.

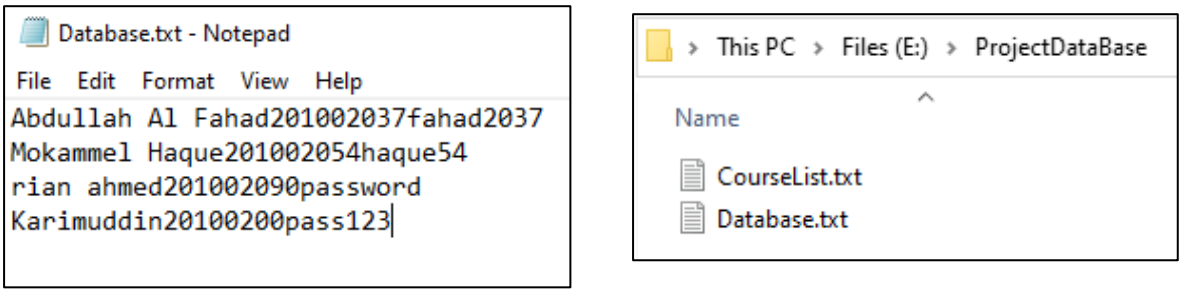
- 3rd button creates a window and then takes the old password and new password as strings from the user. Then concates inputs with the name and Id. After that the string with inputted old password is compared with our Database containing information of the users. Each line in the file is compared with the string with a loop. If there’s a match then the database file is read and stored in single string and later the line containing the old password is replaced with string containing user’s name id and concated with inputted new password, after that the whole string containing all data is written in the file. Giving wrong old password as input shows a pop-up error to the user saying password doesn’t match and if the user gives correct old password in the old password field, it shows a success message.

Chapter 3

Performance Evaluation

3.1 Database

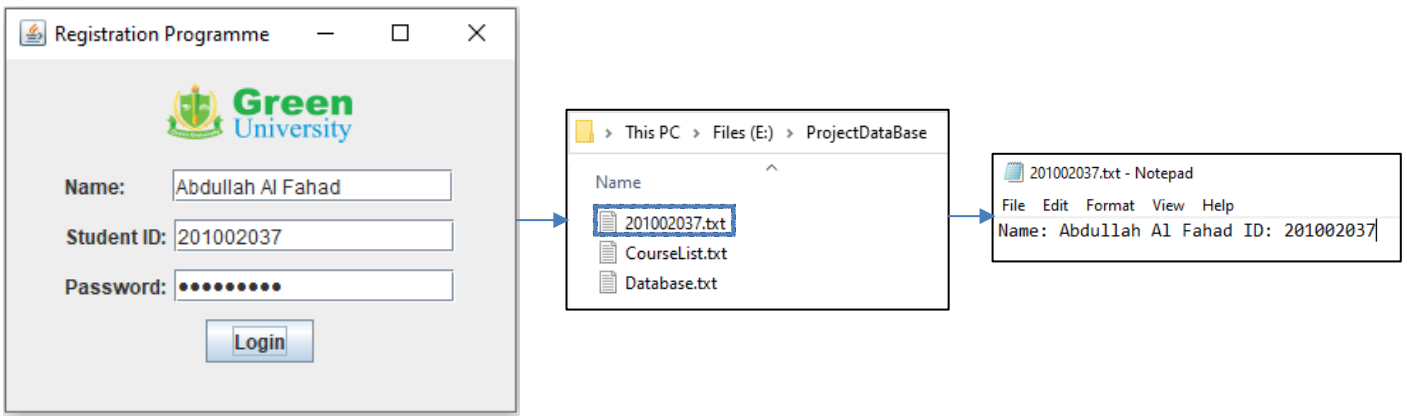
Here is the text file acting as a database for the system



Database as a text file

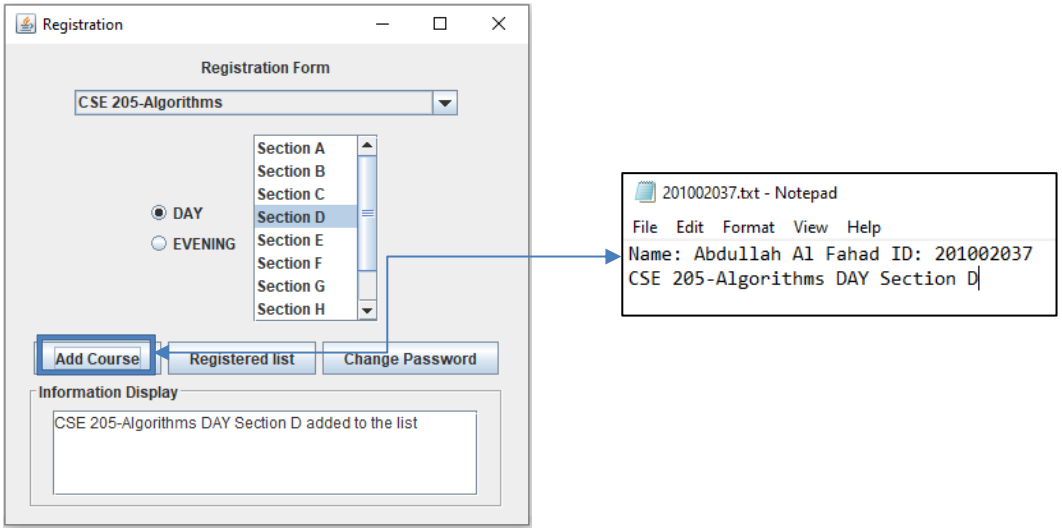
3.1.1 Creating files & Writing data

Creating files for individual accounts to hold data and information after matching the user inputs with database



Creating a file within the UI after each login

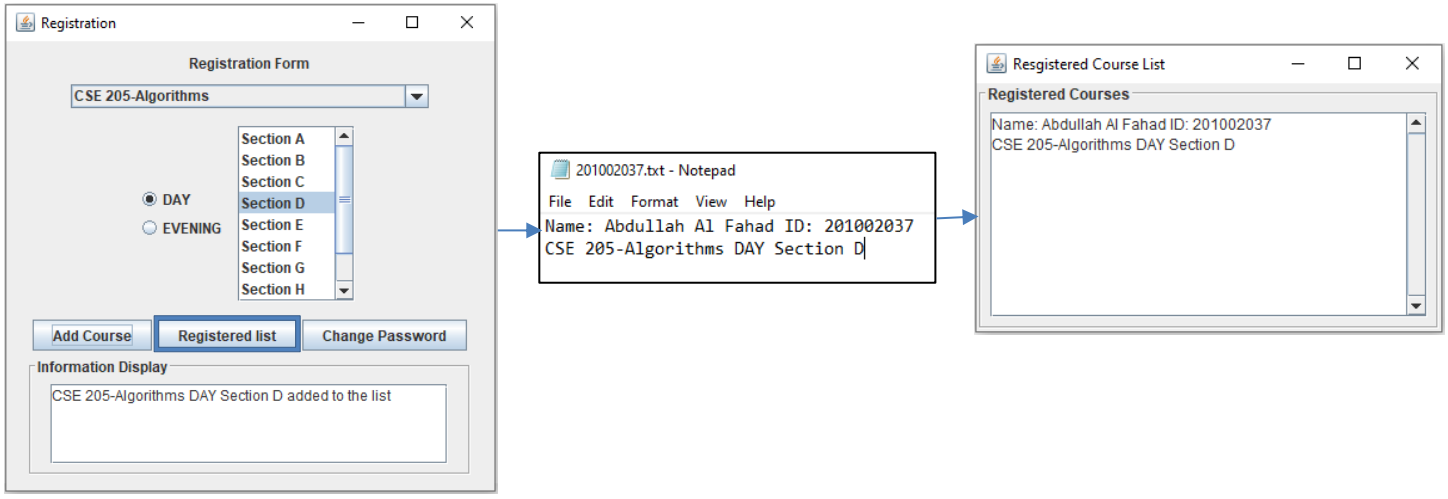
After adding a course, the regarding information gets written on user's text file.



Adding a course by selecting all the options and clicking the "Add Course" button

3.1.2 Reading data

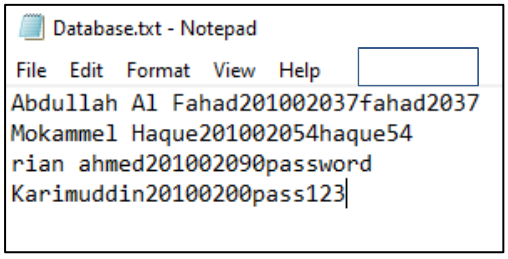
The user can see the data using the user interface.



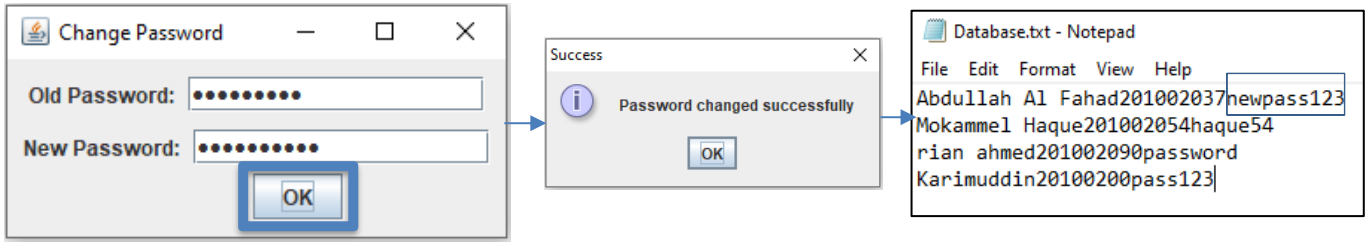
Reading the data from text file then showing it in the user interface using text area

3.1.3 Replacing data

The user can change password of the user's account by making changes in the database text file through the user interface.



Database before changing password of a user



Database after changing password of a user

3.2 Results and Discussions

3.2.1 Results

The results are as expected without any major faults. The programme is giving desired outputs according given inputs.

3.2.2 Analysis and Outcome

The outcome is accordance with the programming of the programme. All used methods and techniques like string concatenation, file read/write, swing is working in conjunction to bring forth the anticipated outcome.

Chapter 4

Conclusion

4.1 Introduction

The project gives an overall idea of how to create programmes with graphical interface.
It also delves into the idea of how to create complex programmes with only the basic ideas of programming.

4.1 Practical Implications

Many universities and institutions as such can use this project if they're looking for basic easy to use cheap course registration system for their respective institute.

4.2 Scope of Future Work

The project clears goals of the project with excellency. It laid off the foundation for future work. Many features & options can be added in the future such as credit counter, course instructor selection etc.

References

[1] Java The Complete Reference, 9th Edition,Herbert Schildt

[2] https://www.javatpoint.com/java-jcombobox

[3] https://www.educba.com/joptionpane-in-java

[4] https://www.tutorialspoint.com/how-to-add-scrollbar-to-jlist-in-java