Individual Assignment 2

KP14603 OBJECT ORIENTED PROGRAMMING
SEMESTER II SESSION 2019/2020

PREPARED FOR:

Pn. Siti Hasnah Tanalol

PREPARED BY:

BIL	**NAMA**	**MATRIK NO.**	**NO.TELEFON**	**TANDATANGAN**
1	Goh Ling Zhuo	BI19110287	016-5500024	

Introduction:

The aim of this assignment is to test student's ability in terms of application of Object Oriented Programming (OOP) specifically JAVA with at least 5 OOP concepts Inheritance, Polymorphism, Abstraction, Encapsulation, Object & classes, Interface and Inner Class, etc. and condition of implementation of Graphic User Interface (GUI).

Since the beginning of Covid-19 pandemic, society all across the world has been experiencing drastic changes in normal lifestyle and the way society works due to the need of adaption for the "new norms" in order to avoid contact and spreading of the highly contagious diseases. Since July, Malaysia government has launched the Recovery Movement Control Order (RMCO) in order for society to adapt to the new norms while having the ongoing pandemic in control. Primary and secondary schools reopen with the implementation of a range of Standard Operating Procedures (SOP). The implemented SOP is aimed to record, track and monitor the situation of the ongoing pandemic, but the SOP despite having a good efficiency of achieving its goal has also caused a lot of inconveniences to those who is essential to implement it.

The project done for this assignment is aimed to help reduce inconveniences for specifically primary and secondary school teachers. Majority of the school does not possess the tools and technology for virtually contactless automatic students entry record system. According to observations at multiple schools in Sitiawan Perak, most of the schools uses pen and paper to record students' entry record every morning/afternoon when students enter the school compound which is very inefficient for documenting a record since all these record need to be kept and errors and mistakes are more frequent with handwritten recording, for example, spelling mistakes, terrible handwriting which can cause massive inconveniences to the staff that is responsible to save the record digitally and it's inefficient for the record to be handwritten and need to be recorded digitally mostly via Microsoft Excel for digital documentation. The project done for this assignment is named "School Check In System" which is aimed to reduced workload and increase efficiency for the school teacher that is responsible for documenting entry records.

Scope/Proposed works

1. Admin Login
    a. To restrict the usage to only the staff responsible for the operation

2. Check in student

    a. Essential student information
        - Name, student identification

    b. Condition for granted entry
        - Temperature recorded

3. Student List
    a. overviewing the list of students and their information

Screenshots of the project

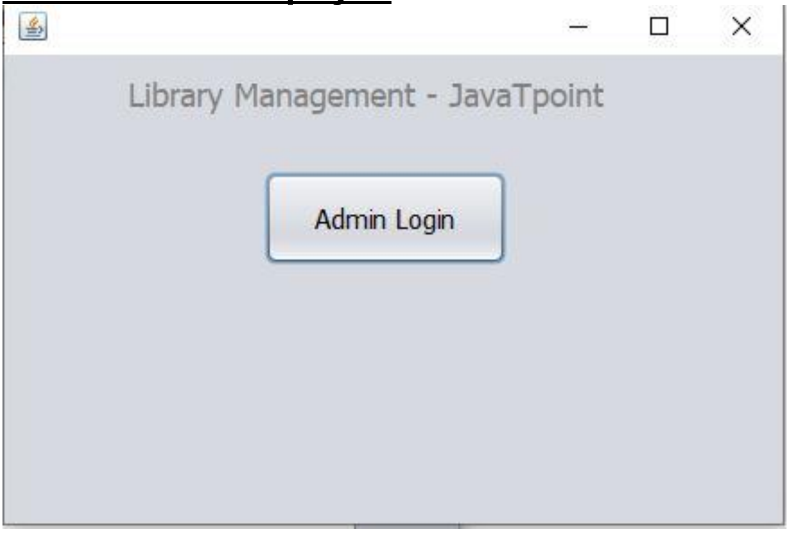
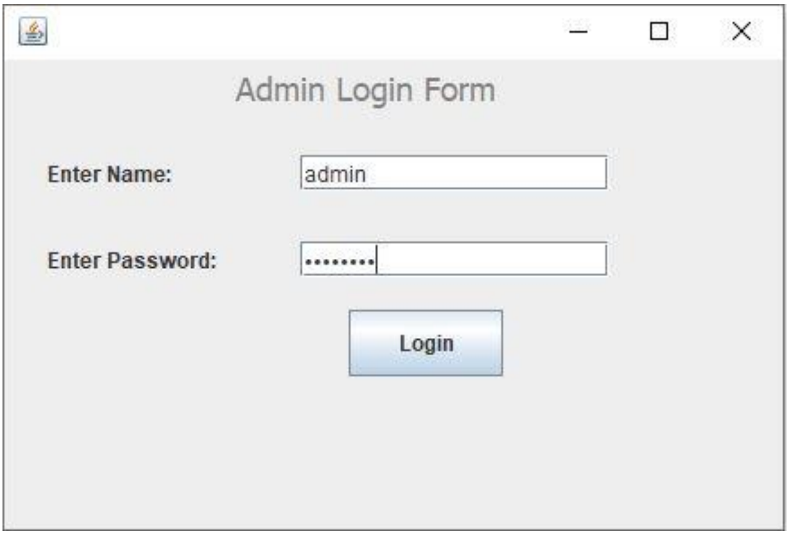


Figure 1: Admin login option


Admin Login Form

Enter Name: admin

Enter Password: ••••••••

Figure 2: Admin is requested to input specific matching information to access, by default is “admin” and “admin123” as password

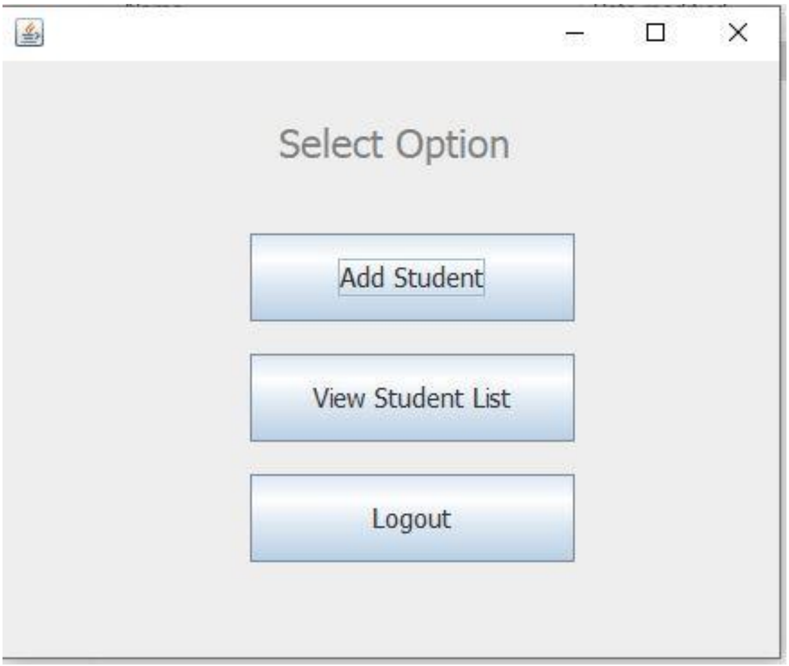
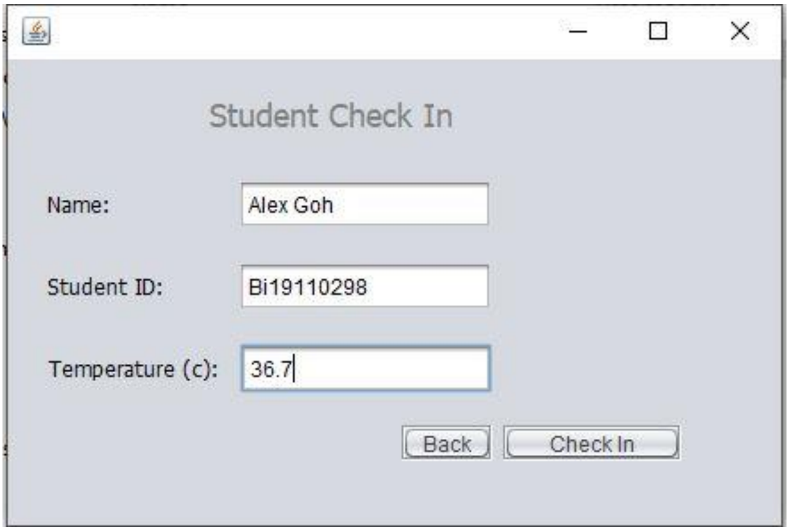


Figure 3: user is given option to select function such as check in student or view the student list of checked in students.

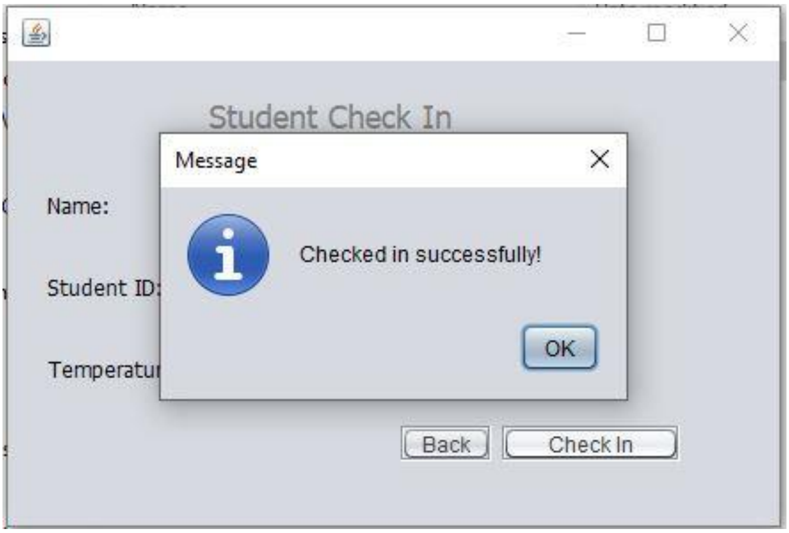

Student Check In

Name: Alex Goh

Student ID: Bi19110298

Temperature (c): 36.7

Figure 4: by selecting "Add Student" user is presented with a form for user to key in student's detail for documentation purpose.



Checked in successfully!

Figure 5: Notification of the confirmation of documentation is given after user key in all the details, A file name “StudentList.txt” is created if it is not created before and the information will be saved in the txt. File.

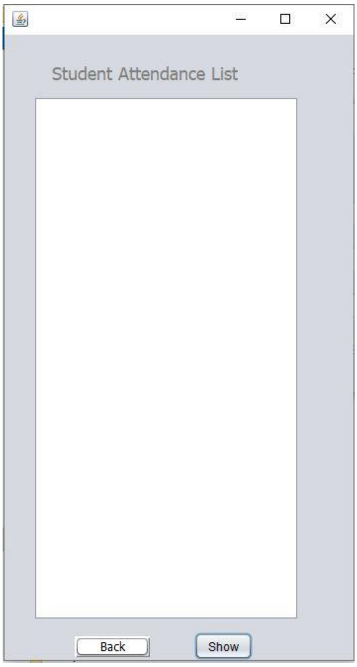
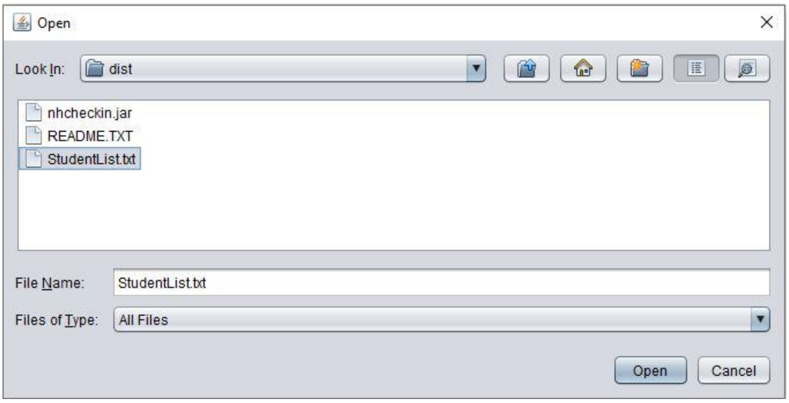


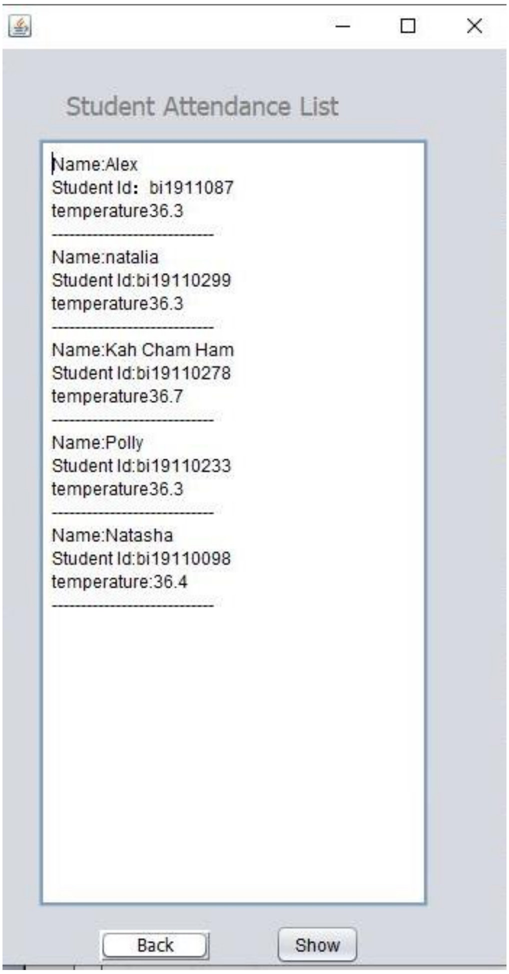
Figure 6: Users can view saved student information by selecting “View Student List” from user option interface as shown in Figure 3. Users need to click on the button “show” in order to select the “StudentList.txt” file in the source file of this project considering different computer has different directory pattern. The StudentList.txt file is by default created in the source file of the project.



File Name: StudentList.txt

Files of Type: All Files

Figure 7: locate and select StudentList.txt

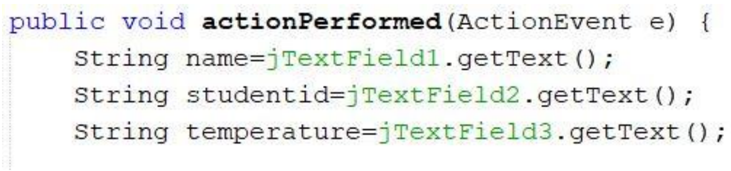


```
Name:Alex
Student Id:  bi1911087
temperature36.3
-----------------------------
Name:natalia
Student Id:bi19110299
temperature36.3
-----------------------------
Name:Kah Cham Ham
Student Id:bi19110278
temperature36.7
-----------------------------
Name:Polly
Student Id:bi19110233
temperature36.3
-----------------------------
Name:Natasha
Student Id:bi19110098
temperature:36.4
-----------------------------
```

Figure 8: Information stored is show at the JTextArea.

Implementation of Read & Write

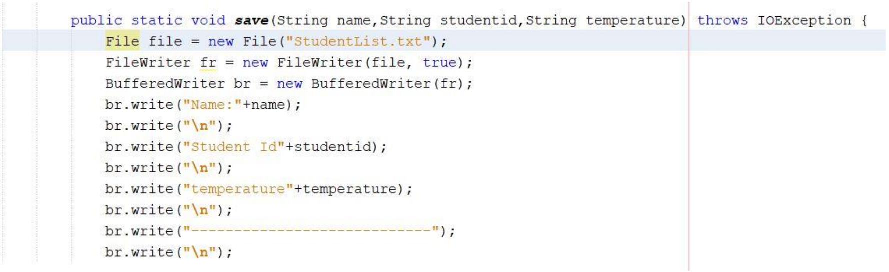
1. Read the information input by the users.



```
public void actionPerformed(ActionEvent e) {
    String name=jTextField1.getText();
    String studentid=jTextField2.getText();
    String temperature=jTextField3.getText();
```

Figure 9: declaration of the string for the input information and receiving input from user.

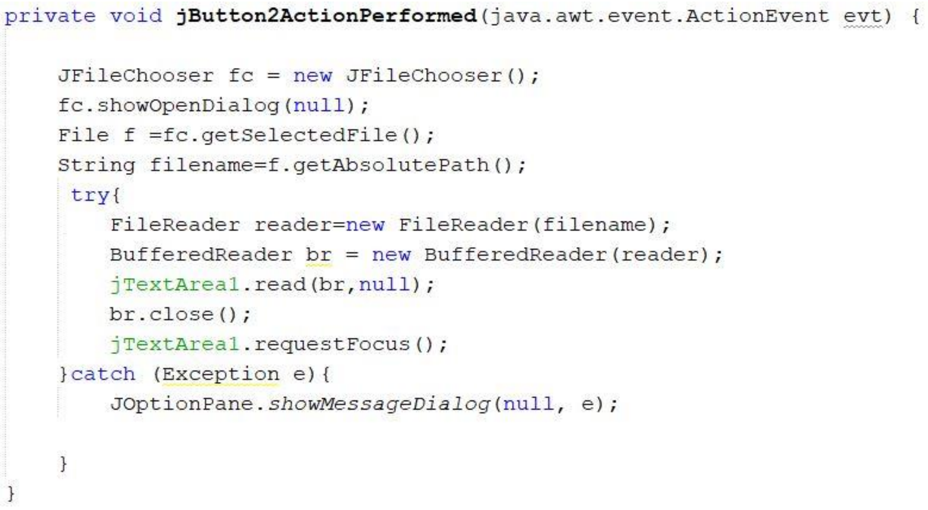
2. Writing the information input by the user into a dedicated file.



```
    public static void save(String name,String studentid,String temperature) throws IOException {
        File file = new File("StudentList.txt");
        FileWriter fr = new FileWriter(file, true);
        BufferedWriter br = new BufferedWriter(fr);
        br.write("Name:"+name);
        br.write("\n");
        br.write("Student Id"+studentid);
        br.write("\n");
        br.write("temperature"+temperature);
        br.write("\n");
        br.write("----------------------------");
        br.write("\n");
```

Figure 10: a file name "StudentList.txt" is created to store the information input by the user and BufferedWriter is used to write the information into the file.

3. Showing the information input by the user on a dedicated JTextArea.



```
private void jButton2ActionPerformed(java.awt.event.ActionEvent evt) {

    JFileChooser fc = new JFileChooser();
    fc.showOpenDialog(null);
    File f =fc.getSelectedFile();
    String filename=f.getAbsolutePath();
     try{
        FileReader reader=new FileReader(filename);
        BufferedReader br = new BufferedReader(reader);
        jTextArea1.read(br,null);
        br.close();
        jTextArea1.requestFocus();
    }catch (Exception e){
        JOptionPane.showMessageDialog(null, e);

    }
}
```

Conclusion

In a nutshell, the School Check In System provides more advantages in terms of efficiency to teachers and staffs assignment to documenting the entrance record of a primary/secondary school. They can well document the record without having to worry about error caused by bad handwriting or physical damage to the medium of documentation for instance papers. Besides the project itself can be upgraded and perhaps be fully autonomous with appropriate upgrades in terms of hardware for example temperature sensor that will take the record of student's body temperature when standing at the counter and a camera to document students info via snapping the student's id card and achieve a fully automated and contactless documentation. The progress on the project itself enhanced and improved my ability to implement GUI and application of various OOP concepts to make the project possible.