

**A
Project Report
on**

“Library Check-In System”

Submitted By

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(Government-Aided Autonomous Institute)

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CERTIFICATE

This is certified that, the project report entitled

“Library Check-In System”

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is a record of student's own work carried out under my supervision and guidance during the academic year

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Walchand College of Engineering, Sangli

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ABSTRACT

This paper has been designed to build a Library Check-in System for the authentication and attendance purpose. This project helps us in managing library. It provides security by allowing only valid students to enter the room. This project stores the student information in database. This project will store the count, which tells the number of times student entering the library. It will also allow permissions to add, delete and modify student information. This project makes library more secure and stores the details of student entering the library.

ACKNOWLEDGEMENT

We wish to express our profound and deep sense of gratitude to Prof. S. G. Tamanhkar Sir, Project Guide, Department of Electronics Engineering for sparing her valuable time to extend help in every step of our project work.

Secondly, we would like to thank Joshi Sir, Department of Electronics Engineering, for providing us with the required components for the project and also explaining the significance of using each of those.

Lastly, we would like to thank our friends and family members for their help, support and motivation for making this project.

CHAPTER 1

1. Introduction

Library Check-In System is a software modification of Security and Automation System which we did in last semester. The main motive is to create a platform, wherein the student details will be stored permanently. The administration can use this at the local level to get in the details of the exact number of students entered into the premises and take further actions. Also, if any student's details need to be modified, he/she can contact the administration and do the necessary part.

1.1. Background and Motivation:

In our 5th Semester, we did a project titled "Security and Automation System", wherein, we tried to provide security to students entering into any room, based on some valid IDs, and based on the count of the students present in the room, the number of LEDs were made to glow. But our project had several drawbacks as well.

Our project didn't store any ID values in the program, because of which if any ID is having the unique set of code, they were assumed to be valid and hence created problem. Also, the IDs of each student entering into the room was assumed to be fixed, and in order to add new IDs as such, the entire Arduino code was to be modified. Our project lacked some technical expertise.

Hence, taking into consideration the above-mentioned problems, we decided to modify the above and create a new Project titled "Library Check-In System". Our main motive is to create a platform, wherein the student details will be stored permanently. The administration can use this at the local level to get in the details of the exact number of students entered into the premises and take further actions. Also, if any student's details need to be modified, he/she can contact the administration and do the necessary part.

1.2. Problem Description:

Students are allowed to enter College library/libraries just by writing their name in the register or just by scanning their ID. There is no authentication in case of writing name in register, in scanning case there is no further process like showing student the number of times they visited the library, providing administrator student details to administrator. So, we have made a project as a solution to this problem.

Our project "**Library Check-in System**" focuses on authentication and giving the frequency of student visiting the library. This project will help in storing the count and other basic information of student. It will also allow the administrator to view and make changes in the database.

1.3. Objectives:

The objectives of the project are:

- 1) To have database for storing data of students who are using library.
- 2) To allow valid/authentic entry and reject unregistered user.
- 3) Allow admin to do crude operations such as addition, modification and deletion of student from database.
- 4) Provide admin with the record of students visited library.
- 5) Allow student to check their attendance.

1.4. Methodology:

The Project is divided into two views:

1) Administration View 2) Student View

A) Administration View:

The Administration View is responsible for the following set of functionalities:

1) Add student to database:

- Enter **PRN** of student.
- If his/her record does not exist in database, then enter the required details.
- Add details provided by user in database.
- If the student's data is present in database no addition in database will be done.

2) Modify student details in database:

- Enter **PRN** of student.
- If his/her record exist in database allow modification.
- Modify required details of student.
- Save the changes in database.
- If the student's data is present in database no modification in database will be done.

3) Delete student's details from database

- Enter **PRN** of student.
- If his/her record exist in delete his record.
- Save the changes in database.
- If student's data is not present in database no deletion will be done in database.

4) Display Attendance

- Get attendance of students from database.
- Display students whose attendance is marked.
- The students whose attendance is not marked will not be displayed.

5) Mark student's attendance

- Enter PRN of student.
- If his/her record exist in database.
- Mark student's attendance.
- Save changes in database.
- If student's data is not present in database, his attendance will not be marked.

B) Student View:

The Student View is responsible for the following set of functionalities:

1) Mark student's attendance:

- Enter PRN of student.
- Enter Password.
- If password is correct, mark student's attendance.
- Save changes in database.
- If password is incorrect, attendance will not be marked.
- If student's data is not present in database, his/her attendance will not be marked.

2) View Attendance:

- Enter PRN of student.
- Enter Password.
- If password is correct, show his/her attendance.
- If password is incorrect, attendance will not be displayed.
- If student's data is not present in database, his/her attendance will not be displayed.

CHAPTER 2

2. Technology and Literature Survey

In the current scenario we see that security/authentication of a person is very important. Allowing any person to enter an important place without any authentication is a matter of risk and it is need to think about this. Also, it is important that some information/details of the person should be stored, so that it can help us further if need arises. Hence, taking this into consideration our team has decide to develop this project "Library Check-in System". This project is made taking into consideration that we are applying this in college library (this project has various other applications). This system will authenticate the students and store their details in the database. Some permissions which include making changes in database are given to administrator only.

2.1. Basic Operation:

The first frame we see is the Home Page. After clicking on "Start" button on home page, the main frame will open. Here we have three buttons/options Student Desk, Administration Desk, Exit Option. The Student Desk, Administration Desk operation is given below:

A) Administration Desk:

First frame which will open asks to enter the administrator ID, if valid the next frame Administration Desk will open, else it will not do any further operations. The Administration Desk has 6 buttons/options which will open the frames explained below:

- **Add Student:** First the PRN should be entered, if PRN is present in database, addition of student is not allowed, else if the PRN is not present in database, the details of student should be entered and then the student record is added in database.
- **Modify Student:** First enter the PRN of the student, if found in database, the student details can be modified, else the student details cannot be modified.
- **Delete Student:** Enter the PRN of student which is to be deleted, if present in the database, student record is deleted from the database, else if PRN is not present there can be no deletion operation.
- **Mark Attendance:** Administrator can mark the attendance of student. Enter the PRN of student, if present in database attendance of respective student will be marked else the attendance is not marked.
- **Display Attendance:** After clicking this button the administrator can see list of present students and can also print this list.
- **Exit option** Exit option on each frame will lead you to the previous frame except for the Home Page. When exit button on the 'Home page' is clicked or the Home page is closed then the status of all the students will be marked as absent in the database. No changes will be made in other columns/attributes.

B) Student Desk:

After clicking the Student Desk button on the Main page, the Student Desk frame will open. The Student Desk frame has 4 buttons/options which will open the frames explained below:

- **Mark Attendance:** Here, the student needs to enter his/her PRN and Password. If both are valid, the student attendance will be marked. Else, if the PRN is invalid, then the Password Field will be Disabled. If the PRN is valid but the Password Field will be disabled. If the PRN is valid but the Password is incorrect, then the student attendance will be marked.
- **View Attendance:** If the student enters correct PRN, then the status (PRESENT/ABSENT) count will be displayed to the student, else the status, count will not be displayed. A student can see only his/her own status count.
- **Update Password:** Students can update their password. First, they need to enter their PRN and Old Password, to change the password. If PRN is Invalid or the Old Password is invalid, then the students cannot change the password.
- **Exit Option:** Exit option on each frame will lead you to the previous frame except for the Home Page. When exit button on the 'Home page' is clicked or the Home page is closed then the status of all the students will be marked as absent in the database. No changes will be made in other columns/attributes.

2.2. Flow Chart and View Diagram

The Flow Chart and View Diagram of the project is divided into two parts:

- Administrator
- Student

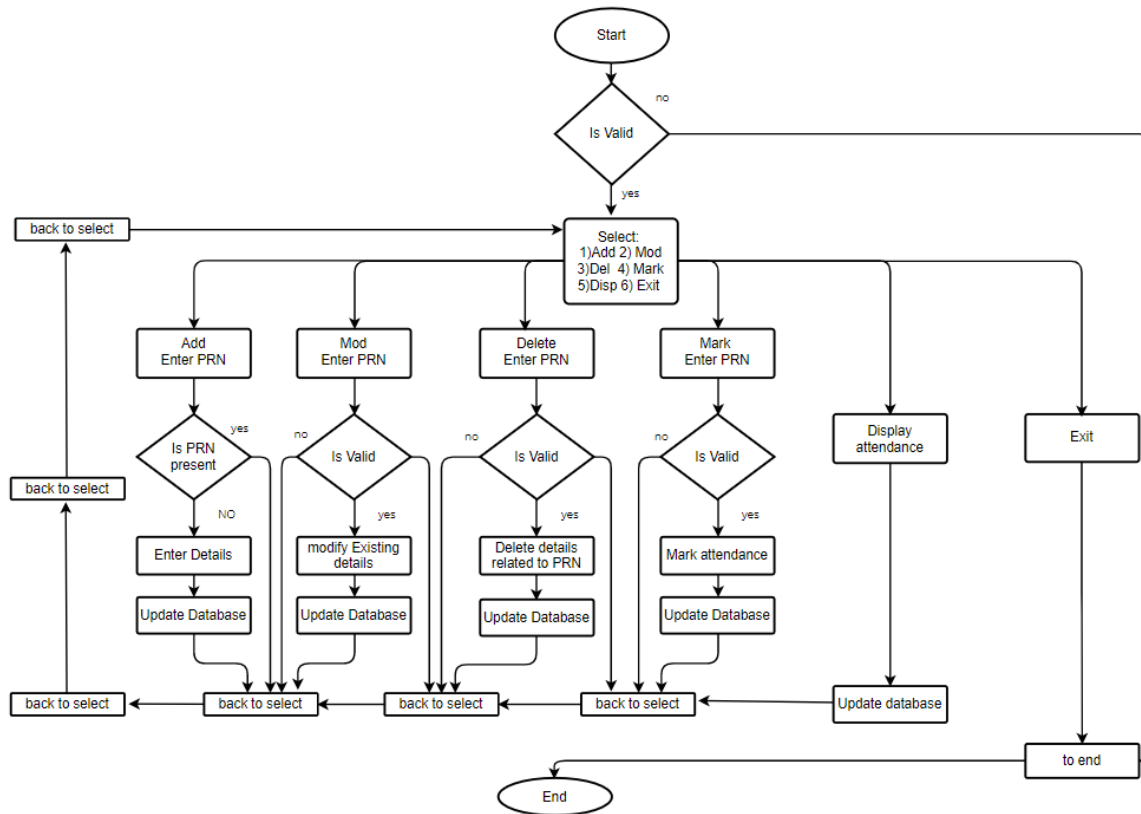
Administrator View is the one which is available for Admins only, and contains following set of further views as such:

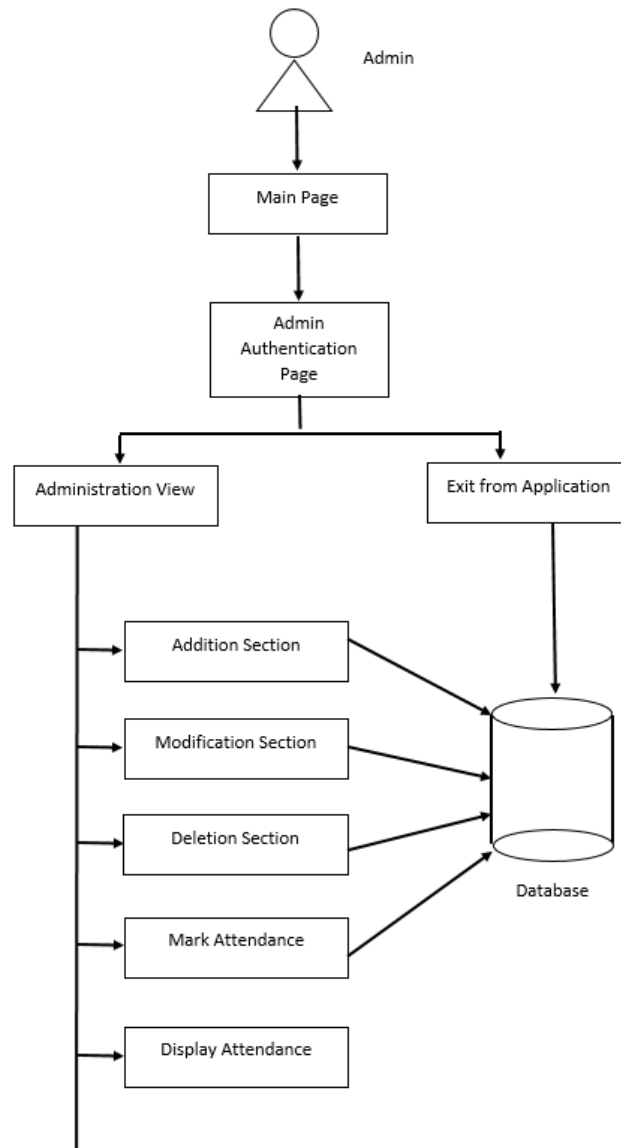
- **Addition Section**
- **Modification Section**
- **Deletion Section**
- **Mark Attendance**
- **Display Attendance**

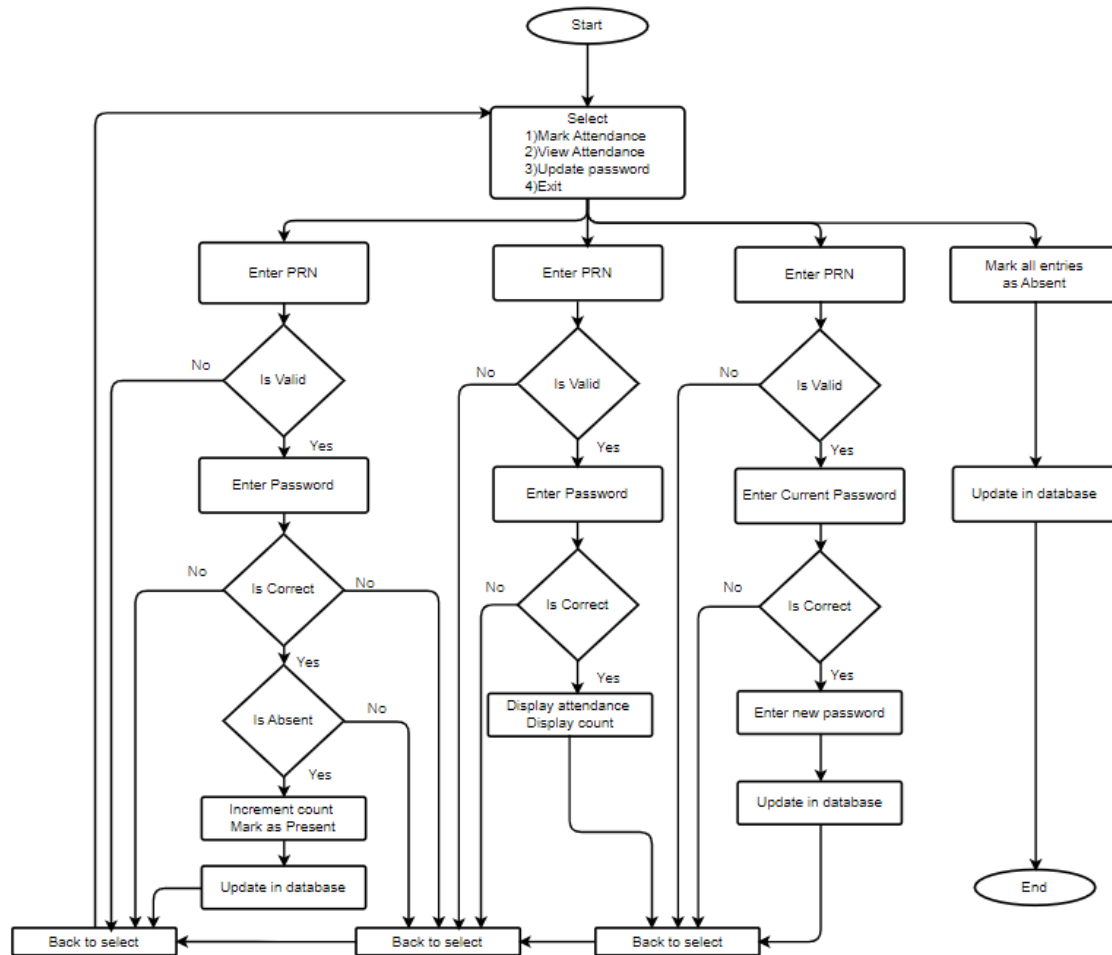
Student View is the one which is available for Students only, and contains following set of further views as such:

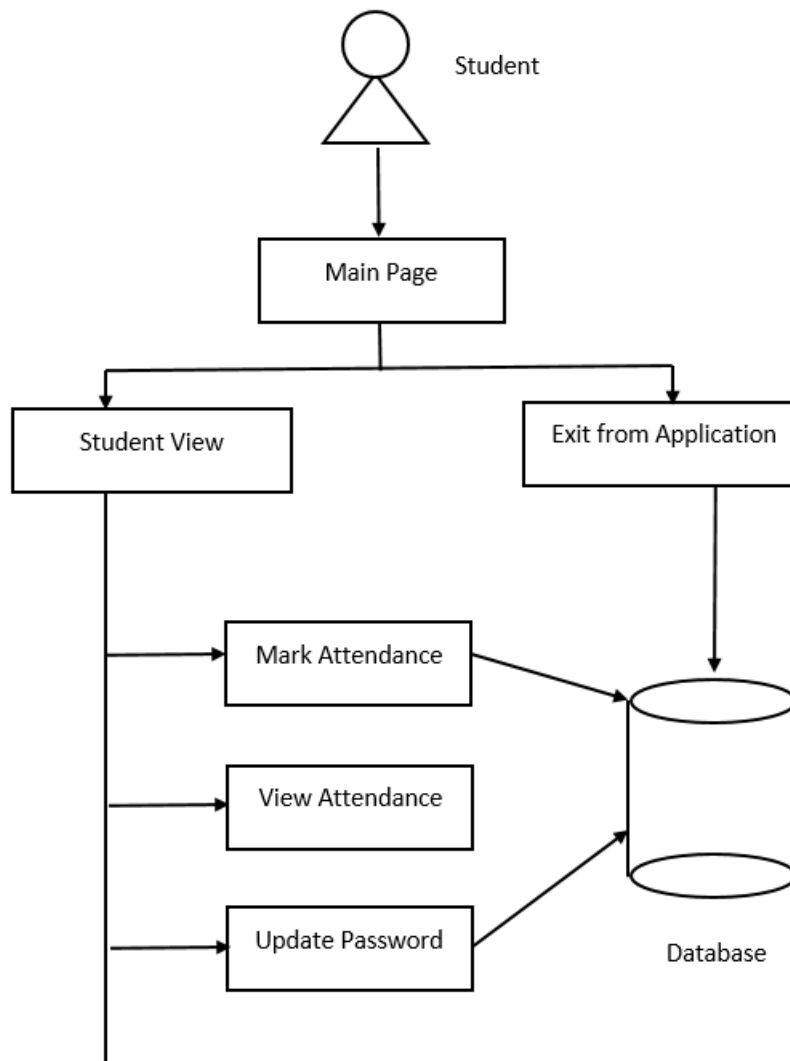
- **Mark Attendance**
- **View Attendance**
- **Update Password**

As per the requirements being specified in each page, all the contents of the respective records will keep on updating in the database as and when required.

Administrator Flow Diagram:*Figure 2.1: Flow chart of Administrator*

Administrator View Diagram:*Figure 2.3: Admin View*

Student Flow Diagram:*Figure 2.4: Flow chart Student*

Student View Diagram:*Figure 2.6: Student view*

2.4. Software Required

For creating and storing database we have used XAMPP Server. Code is written in JAVA (version 1.8.0_333)

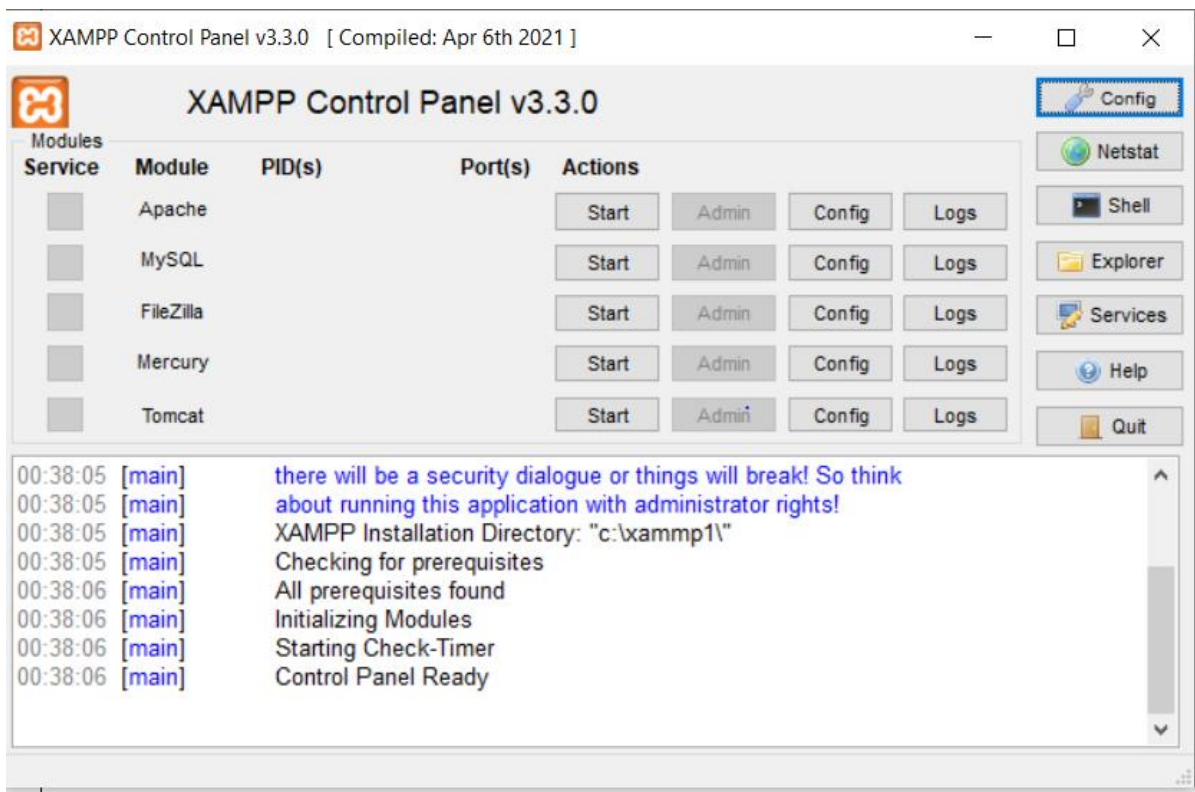


Figure 2.7: Xampp Server

CHAPTER 3

3. Working of the Project:

3.1 Frame List:

Our project consists of several frames, which are interrelated to each other during the overall flow of the project. Following is the list of Frames which we have designed while creation of this project:

- Home_Page
- Main_Page
- Student_Desk
- Student_SAttendance
- Student_View
- Student_UpdatePass
- Administration_IsValid
- Administration_Desk
- Administration_SAdd
- Administration_SMod
- Administration_SDel
- Administration_SAttendance
- Administration_SView

Sr.No.	Frames for Administration	Frames for Student
1)	Administration_IsValid	Student_Desk
2)	Administration_Desk	Student_SAttendance
3)	Administration_SAdd	Student_View
4)	Administration_SMod	Student_UpdatePass
5)	Administration_SDel	
6)	Administration_SAttendance	
7)	Administration_SView	

Table 1: Frames bifurcation into Administration and Student Views

3.2. Frame Flow Diagram

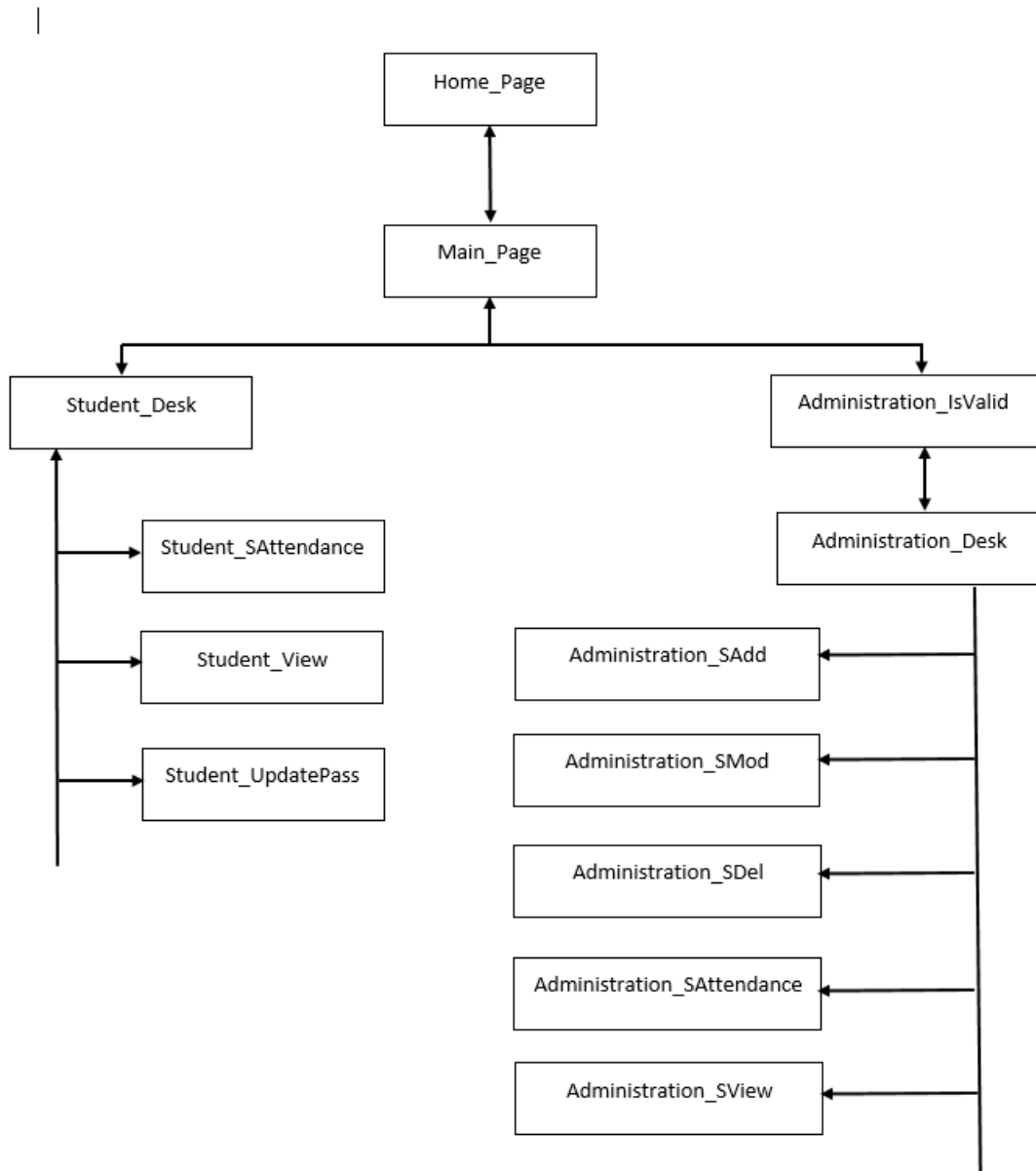


Figure 3.1: Frames Flow Diagram

3.3. Database Schema

Sr No.	Database Attributes	Datatype
1.	PRN	Varchar (20)
2.	Password	Varchar (20)
3.	Name	Varchar (40)
4.	Year	Varchar (10)
5.	Branch	Varchar (30)
6.	Count	Int (5)
7.	Status	Varchar (20)

Table 2: Database schema

Database Name: mini_project_4

Table Name: student_database

The following is the information about the various fields being used in the creation of the above table along with their datatypes and functionalities as such:

A) PRN:

Represents the **PRN** of any student. This field is a **Primary Key**, means every record will have a unique set of PRNs. Admin needs to manually add the records and make sure to add all unique set of **PRN** Numbers.

B) Password:

Represents the Password of any student. By default, when the record of any student is added, then by default the Password is set as **PRN**. Students can manually change it in the Student Section Page.

C) Name:

Represents the name of the student. This field can be redundant, since names of more than 1 students can be same.

D) Year:

Represents the Year of any student. Assuming that only 1st, 2nd, 3rd and 4th to be the valid years of any students.

E) Branch:

Represents the Branch of the student. It can be CS, IT, Electronics, Mechanical, Electrical or Civil. Other branches will not be accepted as such.

F) Count:

Represents the exact count for the number of times students have entered into the library. This count will be incremented only when the valid student marks his/her attendance in the library.

G) Status:

Represents the status, it can be **PRESENT/ABSENT**. By default, when the student record is added in the database, then it will be **ABSENT**. When Student marks his attendance manually, or when Admin marks the attendance, then this field will be updated to **PRESENT**. When the program is terminated, then automatically, this field will be updated to **ABSENT** for all the records present in the database.

























				PRN	Password	Name	Year	Branch	Count	Status
<input type="checkbox"/>				2020BTECS00001	2020BTECS00001	Rohan Kamble	1st	Computer Science	0	ABSENT
<input type="checkbox"/>				2020BTECV00001	2020BTECV00001	Mahesh Mehta	2nd	Civil	0	ABSENT
<input type="checkbox"/>				2020BTEEL00001	2020BTEEL00001	Manisha Verma	2nd	Electrical	0	ABSENT
<input type="checkbox"/>				2020BTEEN00008	2020BTEEN00008	Sanmay Kulkarni	3rd	Electronics	0	ABSENT
<input type="checkbox"/>				2020BTEEN00018	2020BTEEN00018	Muhfeez Ugare	3rd	Electronics	0	ABSENT
<input type="checkbox"/>				2020BTEEN00059	2020BTEEN00059	Ranjit Dhaigude	3rd	Electronics	0	ABSENT
<input type="checkbox"/>				2020BTEIT00076	2020BTEIT00076	Gaurav Patil	3rd	Electronics	0	ABSENT
<input type="checkbox"/>				2020BTEME00001	2020BTEME00001	Ram Patel	4th	Mechanical	0	ABSENT

Table 3: Project Database

The above Table is the Project Database. Initially, we have added some records into the table manually so as to make the program flow a bit easier. During the project as well, the admin has the authority to add new records as such, which will get reflected in the database.

3.4. Working of Frames:

A) Home_Page:

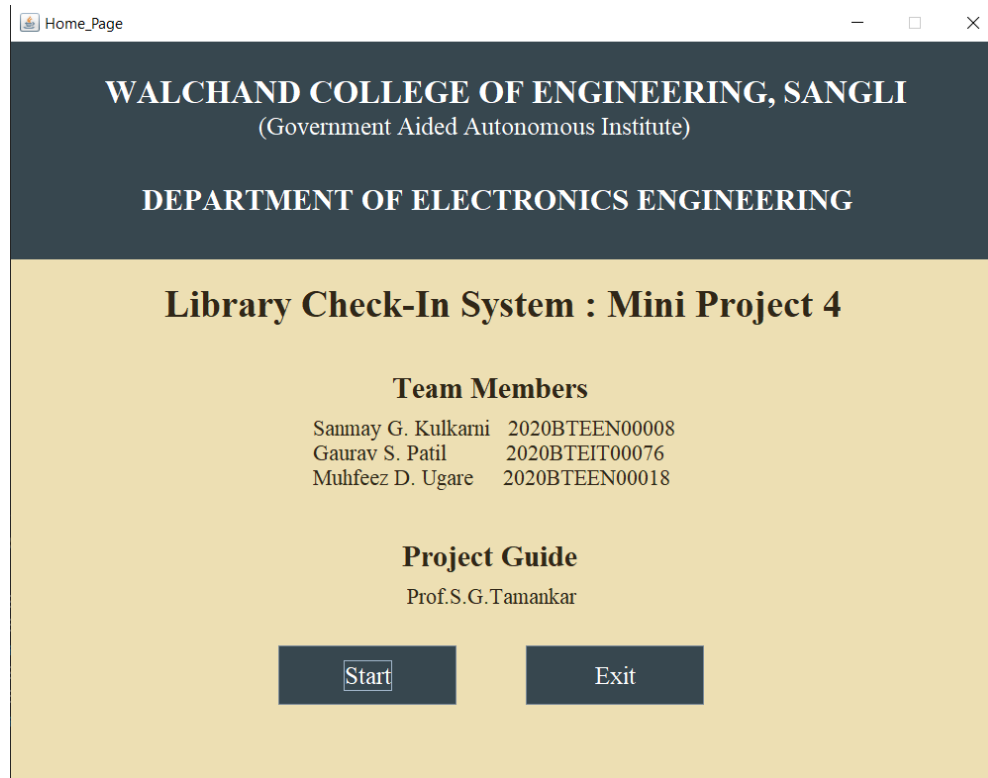


Figure 3.2: Home_Page

- This is the Front Page of the Project.
- Herein, details of the project, its project members, contributing members and the project guide information is visible.
- When we click on **Start Button**, then we will be directed further to next subsequent pages.
- When we click on **Exit Button**, then the program will get terminated and the respective updates will be done in the database.

B) Main_Page

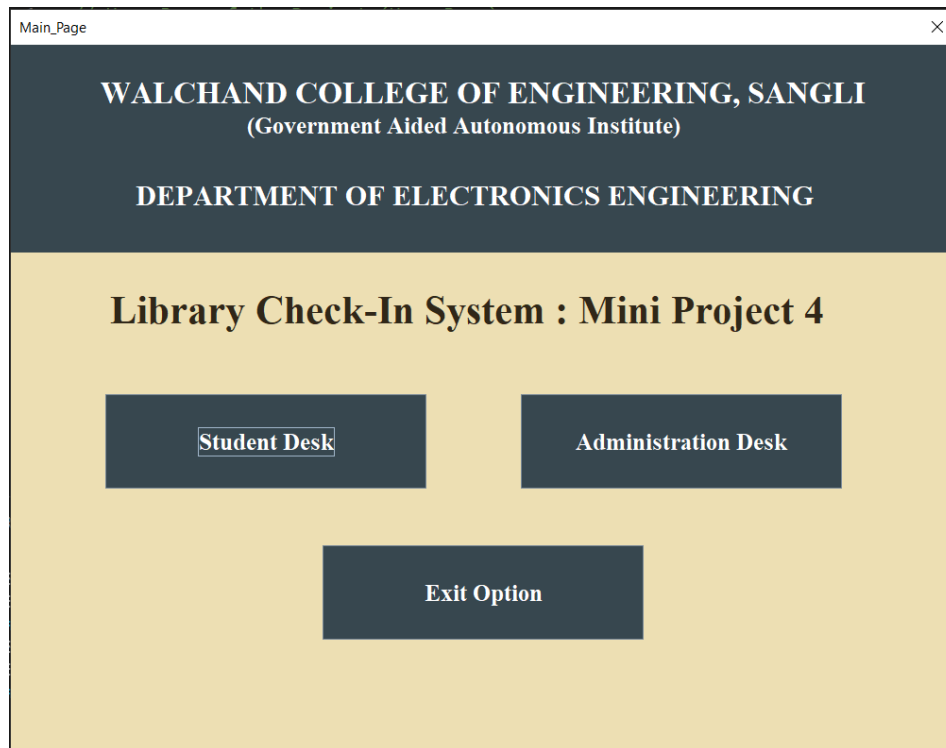


Figure 3.3: Main_Page

- After the **Home_Page** comes the **Main_Page** of the project.
- There are in total 3 Buttons as such: **Student Desk**, **Administration Desk** and **Exit Option**.
- When we click on **Student Desk Button**, then we will be directed to the **Student_Desk** Page.
- When we click on **Administration Desk button**, then we will be directed to the **Administration_IsValid Page**.
- When we click on **Exit Option button**, then we will be directed back to the **Home_Page**.

C) Student_Desk

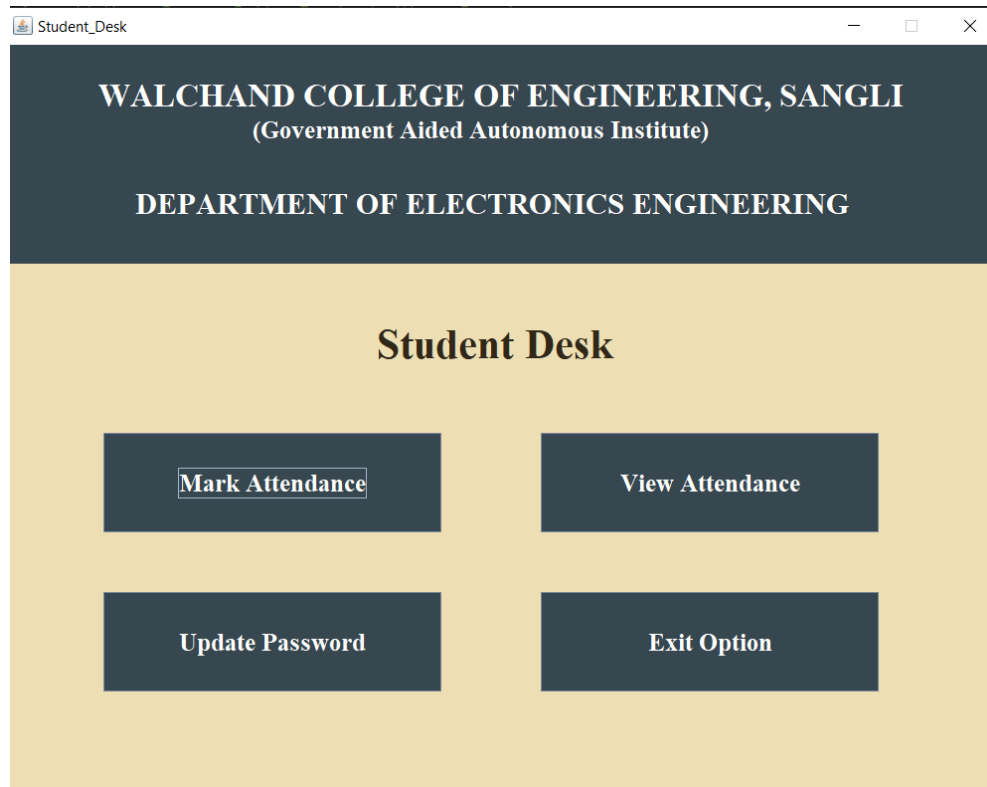
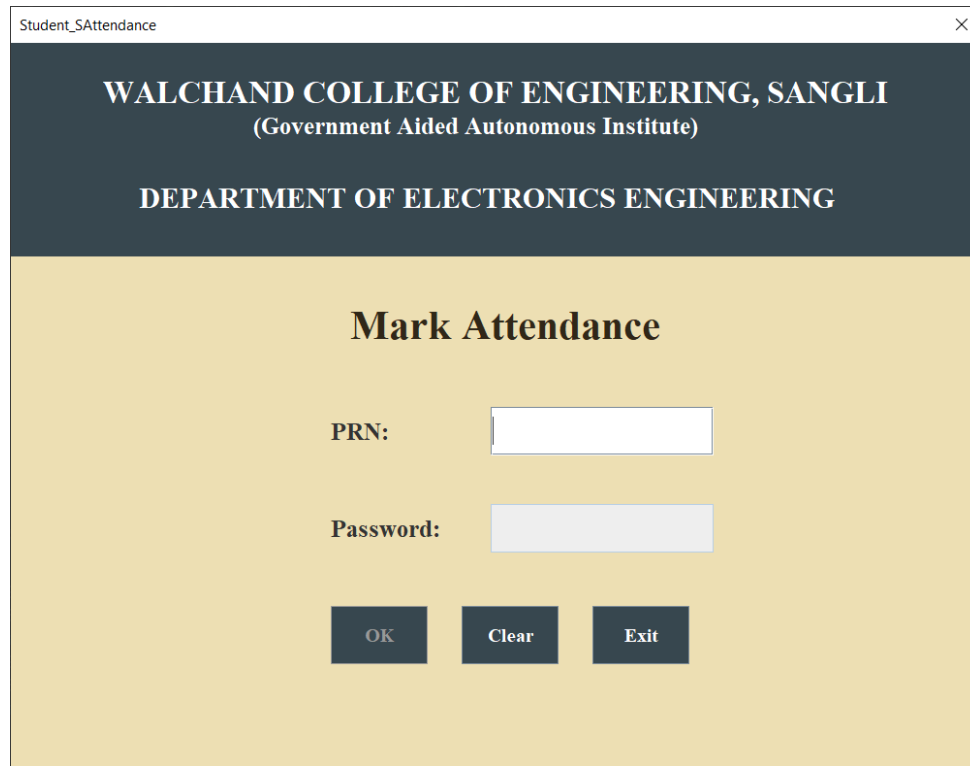


Figure 3.4: Student_Desk

- This page is visible when we click on **Student Desk** in the **Main_Page**.
- This Page is a part of **Student View**.
- This is the first page of the Student View.
- There are in total 4 Buttons as such: **Mark Attendance**, **View Attendance**, **Update Password** and **Exit Option**.
- When we click on **Mark Attendance button**, then we will be directed to the **Student_SAAttendance** Page.
- When we click on **View Attendance button**, then we will be directed to the **Student_SView** Page.
- When we click on **Update Password button**, then we will be directed to the **Student_UpdatePass** Page.
- When we click on **Exit Option button**, then we will be directed back to the **Main_Page**.

D) Student_SAAttendance



The screenshot shows a web application window titled "Student_SAAttendance". The header section is dark blue with white text that reads "WALCHAND COLLEGE OF ENGINEERING, SANGLI (Government Aided Autonomous Institute)" and "DEPARTMENT OF ELECTRONICS ENGINEERING". The main content area has a light yellow background and is titled "Mark Attendance". It contains two input fields: "PRN:" and "Password:". Below these fields are three buttons: "OK", "Clear", and "Exit".

Figure 3.5: Student_SAAttendance (Overview)

- This page is visible when we click on **Mark Attendance button** in the **Student_Desk**.
- This page is a part of Student View.
- Through this page, student can mark his/her attendance, provided his/her record exist in the database.
- By-default **OK button** is **disabled** and Password Field is **non-editable**.
- Students have to enter valid **PRN**, so that the Password Field is enabled. Until valid PRN is entered, Password Field will not be enabled.
- Once the attendance is marked, then count will be automatically incremented by 1 and status will be updated to **PRESENT**.
- There are in total 3 Buttons as such: **OK**, **Clear** and **Exit**.
- When we click on **OK button**, attendance of respective person is marked.
- When we click on **Clear button**, **PRN** and **PASSWORD** Field is cleared off.
- When we click on **Exit button**, then we will be directed back to **Student_Desk**.

CASE 1: When Valid Data is entered:

The screenshot shows a window titled "Student_Attendance" with a dark header containing the text "WALCHAND COLLEGE OF ENGINEERING, SANGLI (Government Aided Autonomous Institute)" and "DEPARTMENT OF ELECTRONICS ENGINEERING". The main area is yellow and contains the title "Mark Attendance". Below this, there are two input fields: "PRN:" with the value "2020BTEEN00008" and "Password:" with a masked password ".....". At the bottom, there are three buttons: "OK", "Clear", and "Exit".

Figure 3.6 Student_Attendance (With Valid Data)

				PRN	Password	Name	Year	Branch	Count	Status
<input type="checkbox"/>				2020BTECS00001	2020BTECS00001	Rohan Kamble	1st	Computer Science	0	ABSENT
<input type="checkbox"/>				2020BTECV00001	2020BTECV00001	Mahesh Mehta	2nd	Civil	0	ABSENT
<input type="checkbox"/>				2020BTEEL00001	2020BTEEL00001	Manisha Verma	2nd	Electrical	0	ABSENT
<input type="checkbox"/>				2020BTEEN00008	2020BTEEN00008	Sanmay Kulkarni	3rd	Electronics	1	PRESENT
<input type="checkbox"/>				2020BTEEN00018	2020BTEEN00018	Muhfeez Ugare	3rd	Electronics	0	ABSENT
<input type="checkbox"/>				2020BTEEN00059	2020BTEEN00059	Ranjit Dhaigude	3rd	Electronics	0	ABSENT
<input type="checkbox"/>				2020BTEIT00076	2020BTEIT00076	Gaurav Patil	3rd	Electronics	0	ABSENT
<input type="checkbox"/>				2020BTEME00001	2020BTEME00001	Ram Patel	4th	Mechanical	0	ABSENT

Table 4: Changes in Database after Student_Attendance

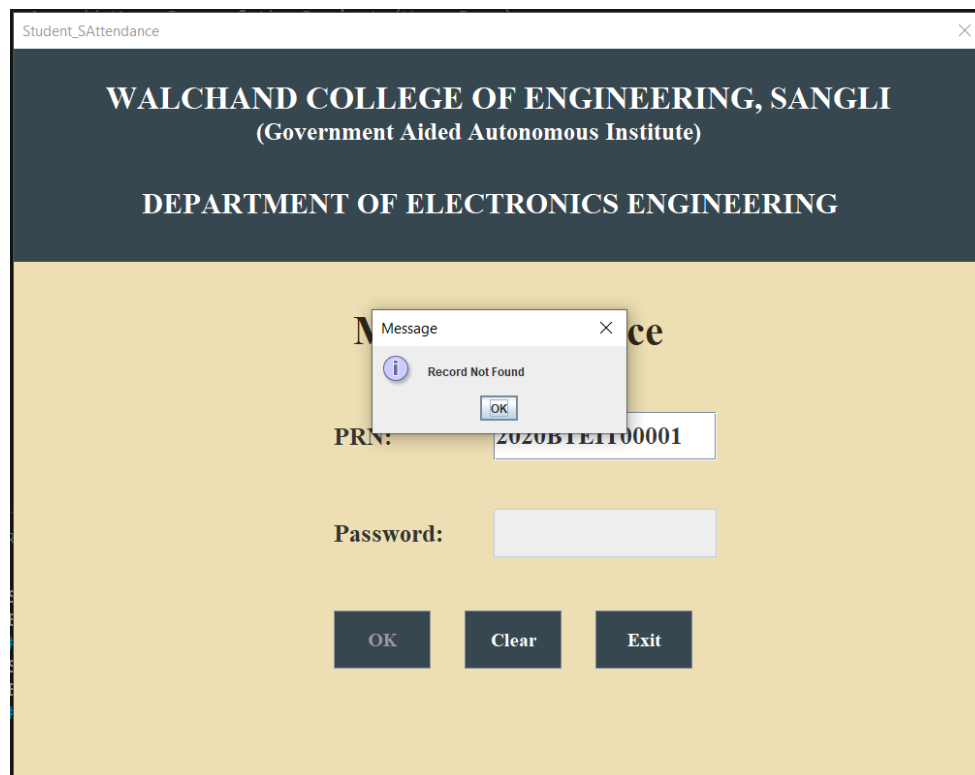
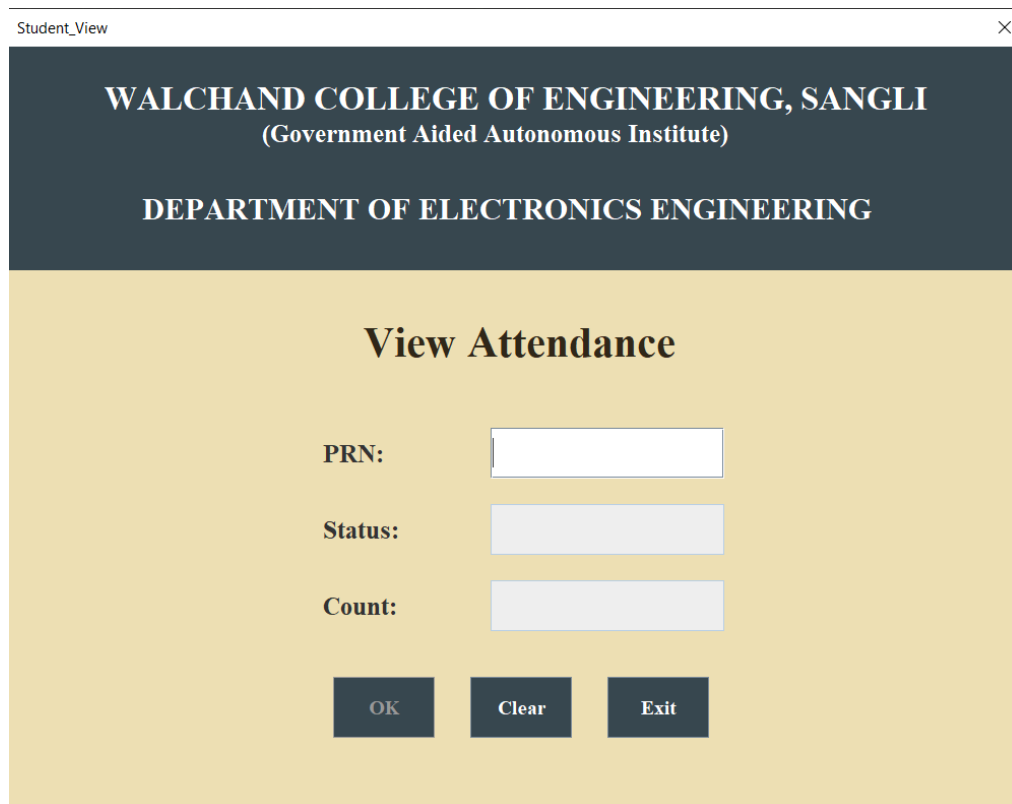
CASE 2: When Invalid Data is entered:

Figure 3.7 Student_SAttendance (With Invalid Data)

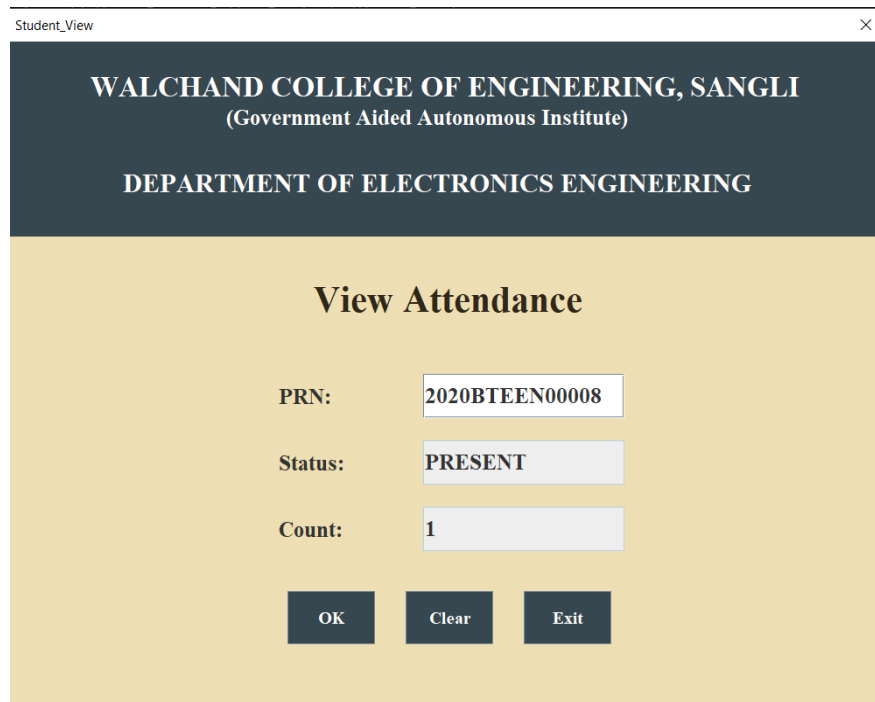
E) Student_View



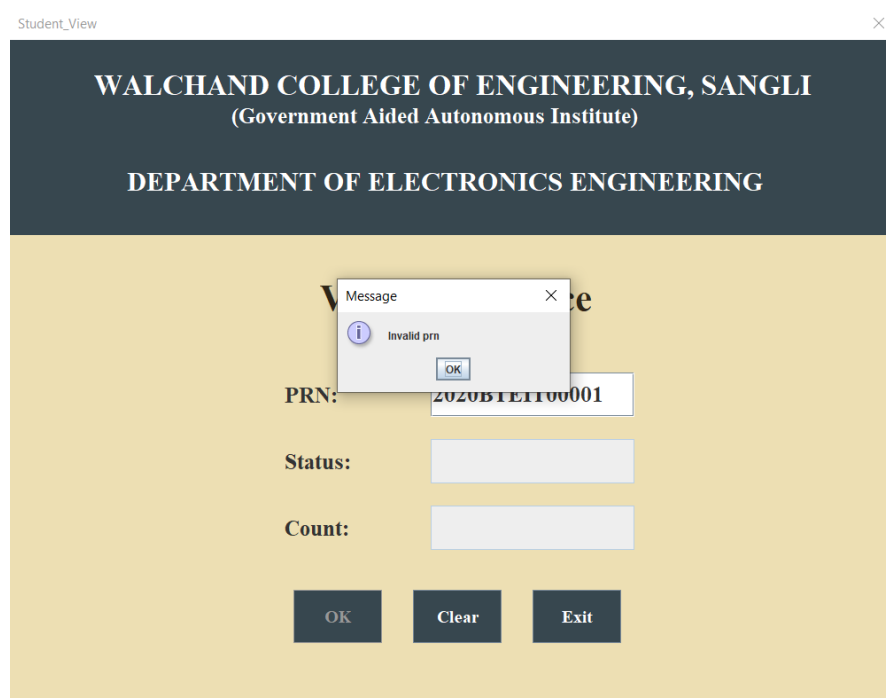
The screenshot shows a web application window titled "Student_View". The header section is dark blue with white text: "WALCHAND COLLEGE OF ENGINEERING, SANGLI (Government Aided Autonomous Institute)" and "DEPARTMENT OF ELECTRONICS ENGINEERING". The main content area is light yellow and contains the title "View Attendance". Below this, there are three input fields: "PRN:" (a white text box), "Status:" (a light gray text box), and "Count:" (a light gray text box). At the bottom, there are three dark blue buttons labeled "OK", "Clear", and "Exit".

Figure 3.8 Student_View (Overview)

- This page is visible when we click on **Mark Attendance** in the **Student_Desk**.
- This page is visible when we click on **View Attendance** in the **Student_Desk**.
- This page is a part of Student View.
- Through this page, student can view his/her attendance status, provided his/her record exist in the database.
- By-default **OK button** is **disabled** and Status and Count Field are **non-editable**.
- Students have to enter valid PRN, so that they will be able to view the count and status of their attendance as such.
- Until valid PRN is entered, the Count and Status Fields will not be displaying any information as such.
- There are in total 3 Buttons as such: **OK**, **Clear** and **Exit**.
- When we click on **OK button**, Count and Status of respective entered PRN will be visible.
- When we click on **Clear button**, PRN, Status and Count Field will be cleared off.
- When we click on **Exit button**, then we will be directed back to **Student_Desk**.

CASE 1: When Valid Data is entered:

The screenshot shows a window titled "Student_View" with a dark blue header containing the text "WALCHAND COLLEGE OF ENGINEERING, SANGLI (Government Aided Autonomous Institute)" and "DEPARTMENT OF ELECTRONICS ENGINEERING". The main area has a yellow background with the title "View Attendance". Below this, there are three input fields: "PRN:" with the value "2020BTEEN00008", "Status:" with the value "PRESENT", and "Count:" with the value "1". At the bottom, there are three buttons: "OK", "Clear", and "Exit".

*Figure 3.9 Student_View (Valid Data)***CASE 2: When Invalid Data is entered:**

The screenshot shows the same "Student_View" window as in Figure 3.9, but with an error message displayed. The error message is a small dialog box titled "Message" with an information icon and the text "Invalid prn". The "PRN:" field now contains the value "2020BTEEN00001". The "Status:" and "Count:" fields are empty. The "OK", "Clear", and "Exit" buttons are still present at the bottom.

Figure 3.10 Student_View (Invalid Data)

F) Student_UpdatePass

Student_UpdatePass

WALCHAND COLLEGE OF ENGINEERING, SANGLI
(Government Aided Autonomous Institute)

DEPARTMENT OF ELECTRONICS ENGINEERING

Update Password

PRN:

O Password:

N Password:

OK Clear Exit

Figure 3.11 Student_UpdatePass (Overview)

- This page is visible when we click **Update Pass** in the **Student_Desk**.
- This page is a part of Student View.
- Through this page, student can update his/her password and that changes will be updated in the database.
- By default, **OK button** is **disabled** and O Password and N Password fields are **non-editable**.
- Students have to enter valid PRN, so that the O Password Field is **enabled**. Until valid PRN is entered, O Password Field will not be enabled.
- Once the O Password Field is **enabled**, then student will have to enter his/her old Password, unless this field is not validated for the given record, the N Password Field will not be **enabled**.
- Once all the PRN, O Password and N Password Fields have been inserted and when the **OK button** is clicked, then the Password of the respective student is updated in the database.
- There are in total 3 Buttons as such: **OK**, **Clear** and **Exit**.
- When we click on **OK button**, Password of the respective student gets updated.
- When we click on **Clear button**, PRN, O Password and N Password Field will be cleared off.
- When we click on **Exit button**, then we will be directed back to **Student_Desk**.

CASE 1: When Valid Data is entered:

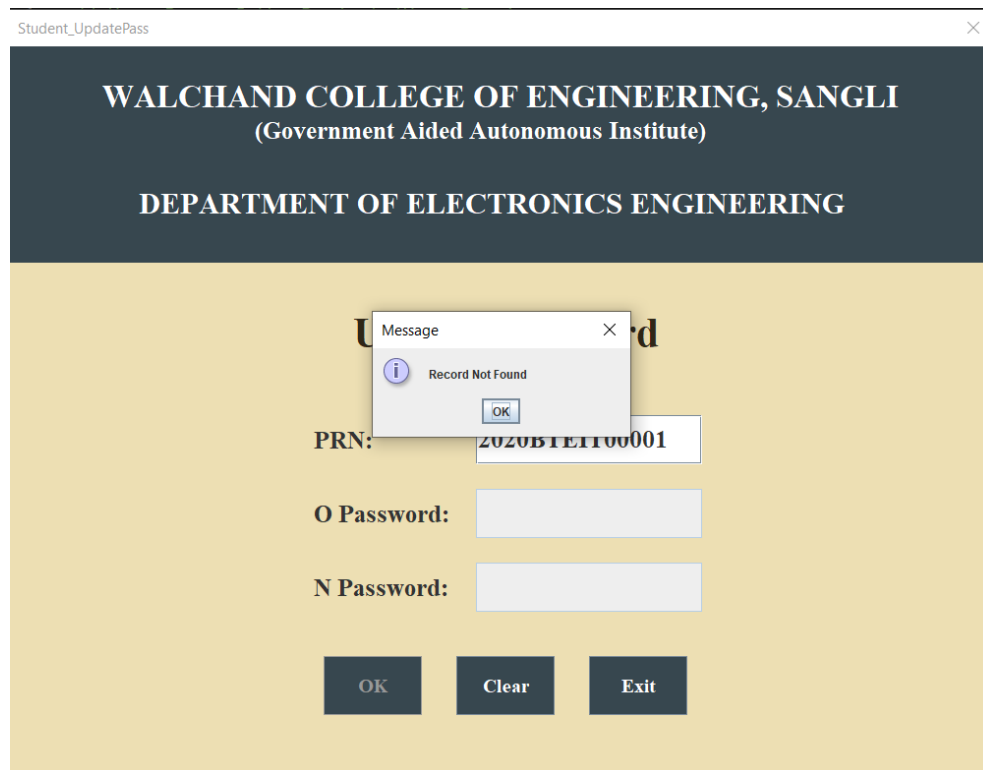
The screenshot shows a web application window titled "Student_UpdatePass". The header displays "WALCHAND COLLEGE OF ENGINEERING, SANGLI (Government Aided Autonomous Institute)" and "DEPARTMENT OF ELECTRONICS ENGINEERING". A modal message box in the center says "Message" with an information icon and "Password Successfully Updated", with an "OK" button. Below the message, the form contains the following fields and buttons:

- PRN: 2020BTEEN00008
- O Password: [password field]
- N Password: [password field]
- Buttons: OK, Clear, Exit

Figure 3.12 Student_UpdatePass (Valid data)

				PRN	Password	Name	Year	Branch	Count	Status
<input type="checkbox"/>	Edit	Copy	Delete	2020BTECS00001	2020BTECS00001	Rohan Kamble	1st	Computer Science	0	ABSENT
<input type="checkbox"/>	Edit	Copy	Delete	2020BTECV00001	2020BTECV00001	Mahesh Mehta	2nd	Civil	0	ABSENT
<input type="checkbox"/>	Edit	Copy	Delete	2020BTEEL00001	2020BTEEL00001	Manisha Verma	2nd	Electrical	0	ABSENT
<input type="checkbox"/>	Edit	Copy	Delete	2020BTEEN00008	Sanmay@123	Sanmay Kulkarni	3rd	Electronics	1	PRESENT
<input type="checkbox"/>	Edit	Copy	Delete	2020BTEEN00018	2020BTEEN00018	Muhfeez Ugare	3rd	Electronics	0	ABSENT
<input type="checkbox"/>	Edit	Copy	Delete	2020BTEEN00059	2020BTEEN00059	Ranjit Dhaigude	3rd	Electronics	0	ABSENT
<input type="checkbox"/>	Edit	Copy	Delete	2020BTEIT00076	2020BTEIT00076	Gaurav Patil	3rd	Electronics	0	ABSENT
<input type="checkbox"/>	Edit	Copy	Delete	2020BTEME00001	2020BTEME00001	Ram Patel	4th	Mechanical	0	ABSENT

Table 5: Changes in Database after Student_UpdatePass

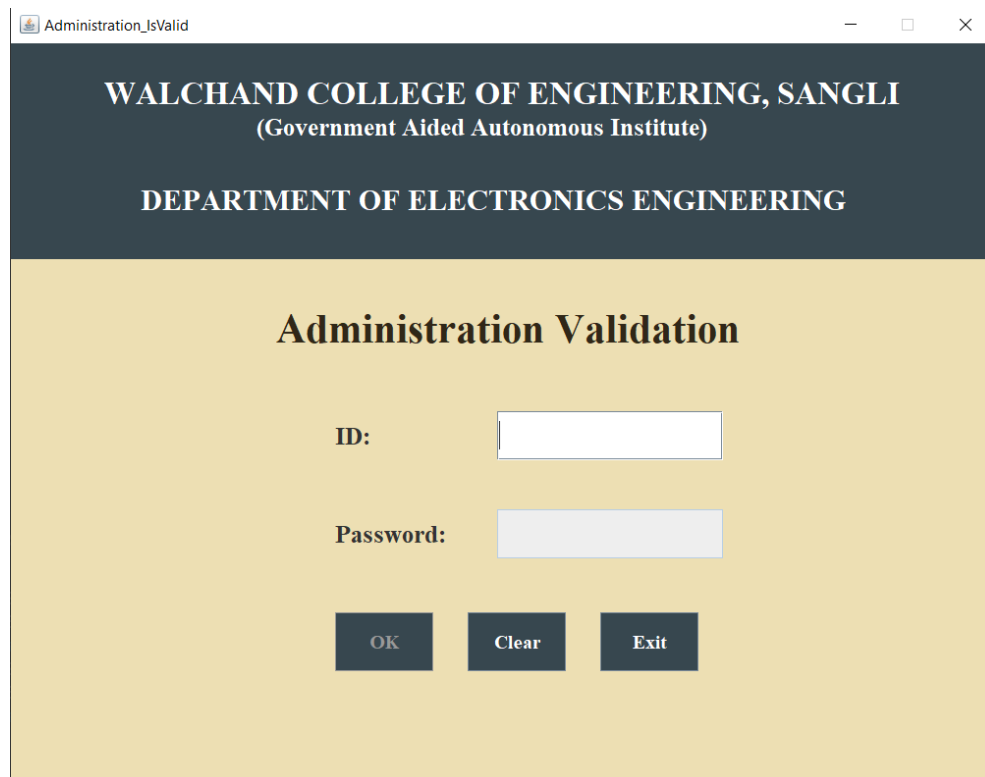
CASE 2: When Invalid Data is entered:

The screenshot shows a web application window titled "Student_UpdatePass". The header section is dark blue with white text: "WALCHAND COLLEGE OF ENGINEERING, SANGLI (Government Aided Autonomous Institute)" and "DEPARTMENT OF ELECTRONICS ENGINEERING". The main content area is light yellow. It contains a form with the following elements:

- A "PRN:" label followed by a text input field containing "2020B1ET1100001".
- An "O Password:" label followed by a text input field.
- An "N Password:" label followed by a text input field.
- Three buttons at the bottom: "OK", "Clear", and "Exit".

A modal message box is overlaid on the form. It has a title bar "Message" and a close button. The message text is "Record Not Found" with an information icon. There is an "OK" button in the message box.

Figure 3.13 Student_UpdatePass (Invalid data)

G) Administration_IsValid:

The screenshot shows a window titled "Administration_IsValid". The header section is dark blue with white text: "WALCHAND COLLEGE OF ENGINEERING, SANGLI (Government Aided Autonomous Institute)" and "DEPARTMENT OF ELECTRONICS ENGINEERING". The main content area is light yellow with the title "Administration Validation" in bold. Below the title are two input fields: "ID:" and "Password:". At the bottom are three buttons: "OK", "Clear", and "Exit".

Figure 3.14 Administration_IsValid (Overview)

- This page is visible when we click **Update Pass** in the **Student_Desk**.
- This page is visible when we click **Administration Desk** of the **Main_Page**.
- This page is a part of Administration View.
- Through this page, validation of the admin will be taken. Only those admins will be able to access the further pages of the Administration View those who enter valid ID and Password.
- By default, **OK button** is **disabled** and Password Field is **non-editable**.
- ID is by default assumed to be **Walchand2024** and Password is by default assumed to be **Admin@123**.
- There are in total 3 Buttons as such: **OK**, **Clear** and **Exit**.
- When we click on **OK button**, we will be directed to **Administration_Desk**.
- When we click on **Clear button**, ID and Password Field will be cleared off.
- When we click on **Exit button**, then we will be directed back to **Student_Desk**.

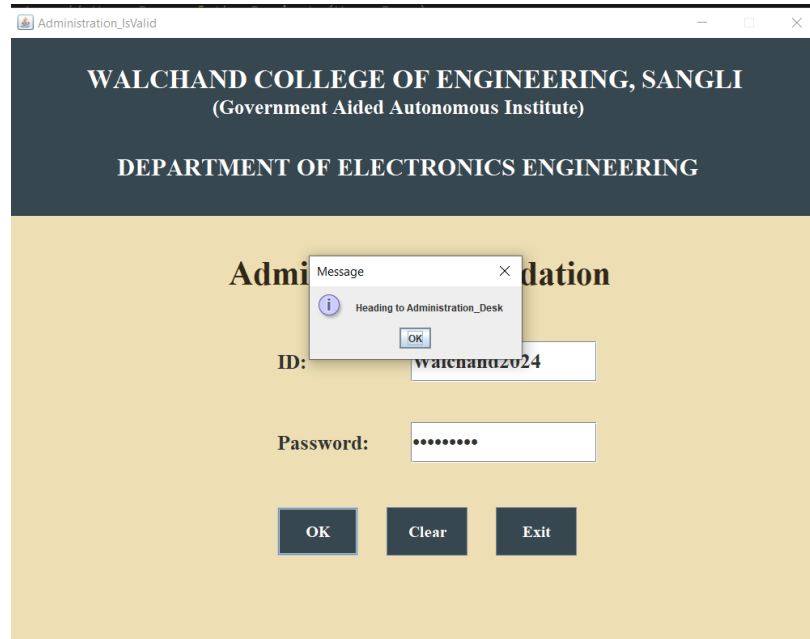
CASE 1: When Valid Data is entered:

Figure 3.15 Administration_IsValid (Valid Data)

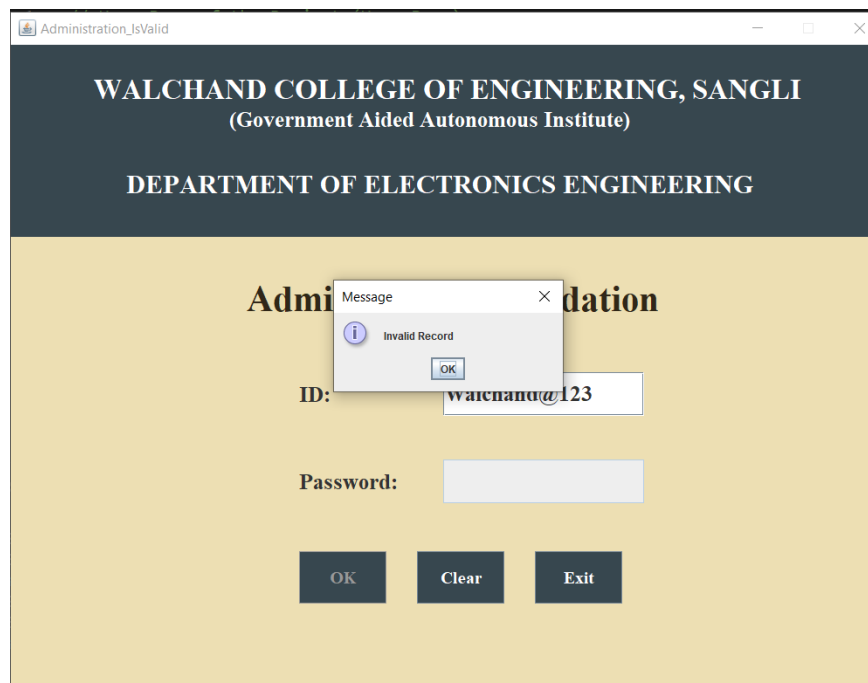
CASE 2: When Invalid Data is entered:

Figure 3.16 Administration_IsValid (invalid Data)

H) Administration_Desk

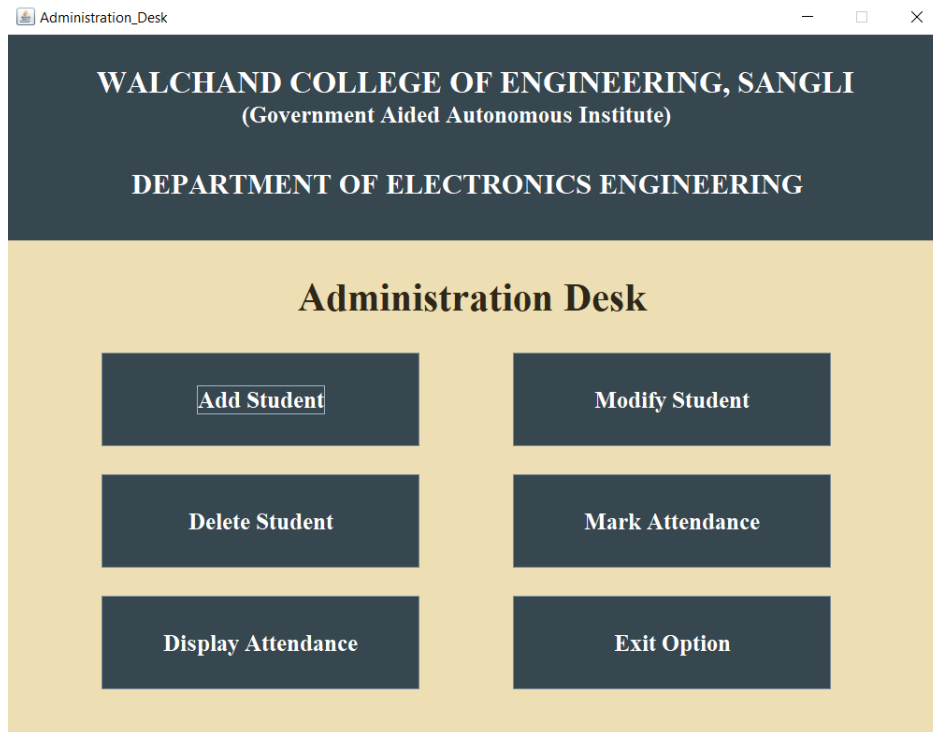
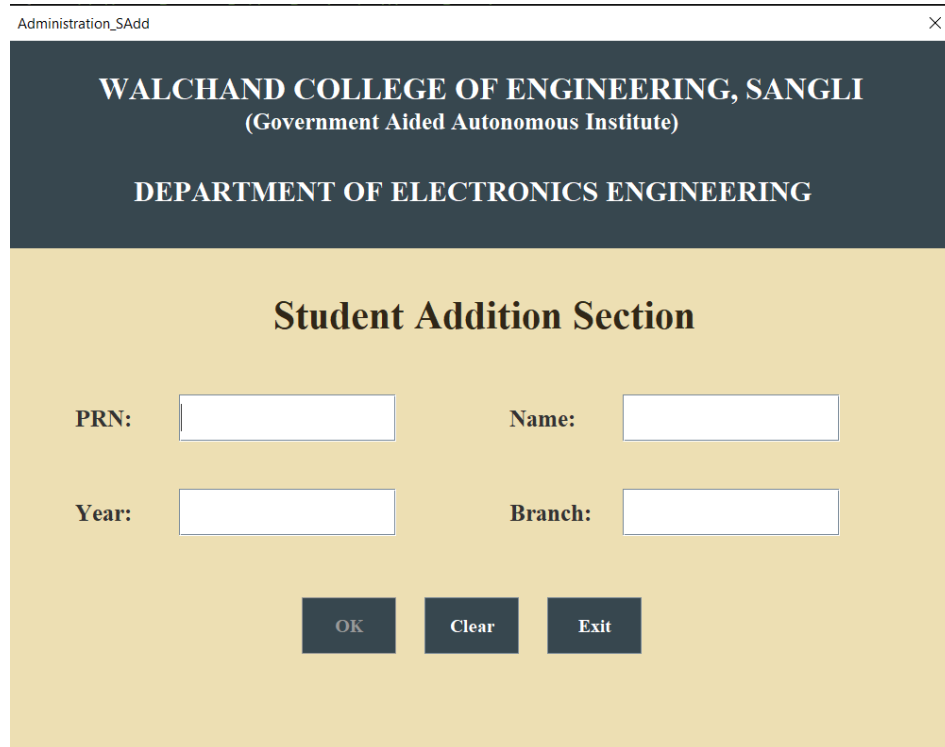


Figure 3.17 Administration_Desk

- This page is visible when the admin has been successfully validated through the **Administration_IsValid** Page.
- This Page is a part of Administration View.
- There are in total 6 Buttons as such: **Add Student**, **Modify Student**, **Delete Student**, **Mark Attendance**, **Display Attendance** and **Exit Option**.
- When we click on **Add Student** button, then we will be directed to **Administration_SAdd** Page.
- When we click on **Modify Student** button, then we will be directed to **Administration_SMod** Page.
- When we click on **Delete Student** button, then we will be directed to **Administration_SDel** Page.
- When we click on **Mark Attendance** button, then we will be directed to **Administration_SAAttendance** Page.
- When we click on **Display Attendance** button, then we will be directed to **Administration_SView** Page.
- When we click on **Exit** button, then we will be directed back to the **Main_Page**.

I) Administartion_SAdd



Administration_SAdd

WALCHAND COLLEGE OF ENGINEERING, SANGLI
(Government Aided Autonomous Institute)

DEPARTMENT OF ELECTRONICS ENGINEERING

Student Addition Section

PRN: Name:

Year: Branch:

Figure 3.18 Administration_SAdd (Overview)

- This page is visible when we click on **Add Student** in the **Administration_Desk**.
- This page is a part of Administration View.
- Through this page, admin can add new student into the database.
- By default, only PRN is Visible and Name, Year, Branch are **non-editable** while the **OK Button** is **disabled**.
- Constraints are that PRN should be unique and unless and until all the fields are not entered, the **OK button** remains **disabled**.
- When all the fields are entered, **OK button** is **enabled** and after clicking on it, the record will get added in the database.
- There are in total 3 Buttons as such: **OK**, **Clear** and **Exit**.
- When we click on **OK button**, record with respective field values will get added in the database.
- When we click on **Clear button**, PRN, Name, Year and Branch will be cleared off.
- When we click on **Exit Button**, then we will be directed back to **Administration_Desk**.

CASE 1: Addition of Student Details:

Administration_SAdd

WALCHAND COLLEGE OF ENGINEERING, SANGLI
(Government Aided Autonomous Institute)

DEPARTMENT OF ELECTRONICS ENGINEERING

Student Addition

PRN: 2020BTEIT00001 Name: Gaurav Verma

Year: 1st Branch: Information Tech.

OK Clear Exit

Message
Student Added Successfully
OK

Figure 3.19 Administration_SAdd (Addition of Student Details)

<div><div><div></div><div></div><div></div></div></div>				PRN	Password	Name	Year	Branch	Count	Status
<input type="checkbox"/>	<div><div><div></div><div></div><div></div></div></div> Edit	<div><div><div></div><div></div><div></div></div></div> Copy	<div><div><div></div><div></div><div></div></div></div> Delete	2020BTECS00001	2020BTECS00001	Rohan Kamble	1st	Computer Science	0	ABSENT
<input type="checkbox"/>	<div><div><div></div><div></div><div></div></div></div> Edit	<div><div><div></div><div></div><div></div></div></div> Copy	<div><div><div></div><div></div><div></div></div></div> Delete	2020BTECV00001	2020BTECV00001	Mahesh Mehta	2nd	Civil	0	ABSENT
<input type="checkbox"/>	<div><div><div></div><div></div><div></div></div></div> Edit	<div><div><div></div><div></div><div></div></div></div> Copy	<div><div><div></div><div></div><div></div></div></div> Delete	2020BTEEL00001	2020BTEEL00001	Manisha Verma	2nd	Electrical	0	ABSENT
<input type="checkbox"/>	<div><div><div></div><div></div><div></div></div></div> Edit	<div><div><div></div><div></div><div></div></div></div> Copy	<div><div><div></div><div></div><div></div></div></div> Delete	2020BTEEN00008	Sanmay@123	Sanmay Kulkarni	3rd	Electronics	1	PRESENT
<input type="checkbox"/>	<div><div><div></div><div></div><div></div></div></div> Edit	<div><div><div></div><div></div><div></div></div></div> Copy	<div><div><div></div><div></div><div></div></div></div> Delete	2020BTEEN00018	2020BTEEN00018	Muhfeez Ugare	3rd	Electronics	0	ABSENT
<input type="checkbox"/>	<div><div><div></div><div></div><div></div></div></div> Edit	<div><div><div></div><div></div><div></div></div></div> Copy	<div><div><div></div><div></div><div></div></div></div> Delete	2020BTEEN00059	2020BTEEN00059	Ranjit Dhaigude	3rd	Electronics	0	ABSENT
<input type="checkbox"/>	<div><div><div></div><div></div><div></div></div></div> Edit	<div><div><div></div><div></div><div></div></div></div> Copy	<div><div><div></div><div></div><div></div></div></div> Delete	2020BTEIT00001	2020BTEIT00001	Gaurav Verma	1st	Information Tech.	0	ABSENT
<input type="checkbox"/>	<div><div><div></div><div></div><div></div></div></div> Edit	<div><div><div></div><div></div><div></div></div></div> Copy	<div><div><div></div><div></div><div></div></div></div> Delete	2020BTEIT00076	2020BTEIT00076	Gaurav Patil	3rd	Electronics	0	ABSENT
<input type="checkbox"/>	<div><div><div></div><div></div><div></div></div></div> Edit	<div><div><div></div><div></div><div></div></div></div> Copy	<div><div><div></div><div></div><div></div></div></div> Delete	2020BTEME00001	2020BTEME00001	Ram Patel	4th	Mechanical	0	ABSENT

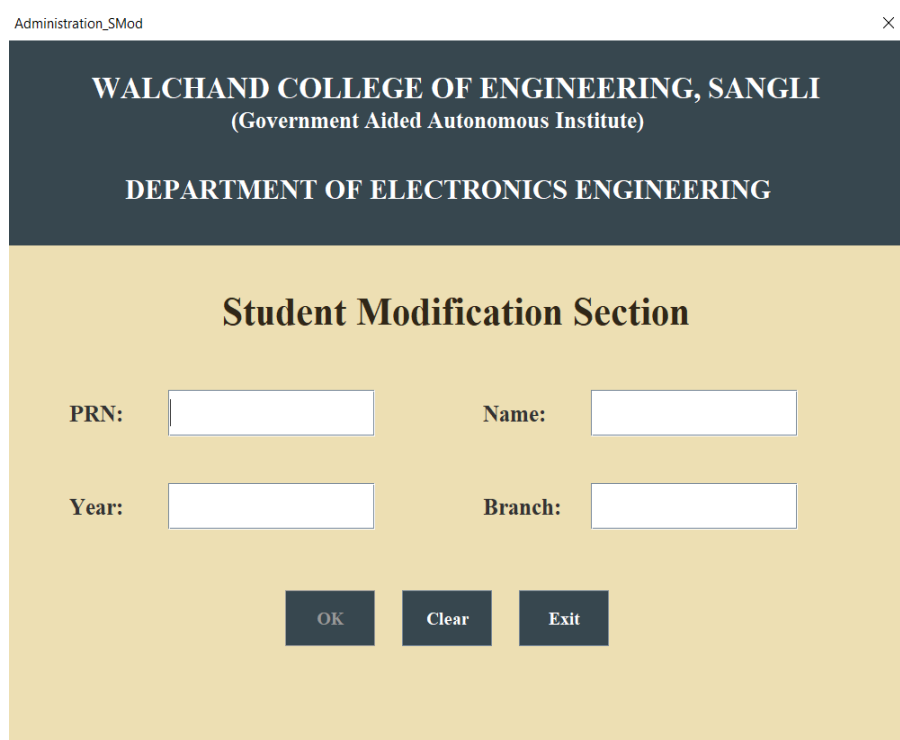
Table 6: Changes in Database after Administration_SAdd

CASE 2: Record Already Exist:

The screenshot shows a web application window titled 'Administration_SAdd'. The header section is dark blue with white text: 'WALCHAND COLLEGE OF ENGINEERING, SANGLI (Government Aided Autonomous Institute)' and 'DEPARTMENT OF ELECTRONICS ENGINEERING'. The main content area is yellow and contains a form titled 'Student Registration'. The form has four input fields: 'PRN:' with the value '2020BTEEN00008', 'Name:', 'Year:', and 'Branch:'. Below the form are three buttons: 'OK', 'Clear', and 'Exit'. A small 'Message' dialog box is overlaid on the form, displaying an information icon, the text 'Record Already Exist', and an 'OK' button.

Figure 3.20 Administration_SAdd (Record Already Exist)

J) Administration_SMod



The screenshot shows a window titled "Administration_SMod" with a dark blue header and a yellow body. The header contains the text "WALCHAND COLLEGE OF ENGINEERING, SANGLI (Government Aided Autonomous Institute)" and "DEPARTMENT OF ELECTRONICS ENGINEERING". The body contains the title "Student Modification Section" and four text input fields labeled "PRN:", "Name:", "Year:", and "Branch:". Below the fields are three buttons: "OK", "Clear", and "Exit".

Figure 3.21 Administration_SMod (Overview)

- This page is visible when we click on **Mod Student** in the **Administration_Desk**.
- This page is a part of Administration View.
- Through this page, admin can modify the details of existing students.
- By default, only PRN is Visible and Name, Year, Branch are **non-editable** while the **OK button** is **disabled**.
- Constraints are that PRN entered should be present in the database.
- When PRN is entered, and assuming to be present in the database, then automatically the details of respective student will be visible into the respective text fields, which are editable and admin can make changes as and where required.
- When all the fields are entered, **OK button** is **enabled** and after clicking on it, the record will get modified in the database.
- There are in total 3 Buttons as such: **OK**, **Clear** and **Exit**.
- When we click on **OK button**, record of student with respective field values will get modified in the database.
- When we click on **Clear button**, PRN, Name, Year and Branch will be cleared off.
- When we click on **Exit Button**, then we will be directed back to **Administration_Desk**.

CASE 1: Modification of Student Details

Figure 3.22 Administration_SMod (Modification of Student Details)

				PRN	Password	Name	Year	Branch	Count	Status
<input type="checkbox"/>				2020BTECS00001	2020BTECS00001	Rohan Kamble	1st	Computer Science	0	ABSENT
<input type="checkbox"/>				2020BTECV00001	2020BTECV00001	Mahesh Mehta	2nd	Civil	0	ABSENT
<input type="checkbox"/>				2020BTEEL00001	2020BTEEL00001	Manisha Verma	2nd	Electrical	0	ABSENT
<input type="checkbox"/>				2020BTEEN00008	Sanmay@123	Sam Kulkarni	1st	Electronics	1	PRESENT
<input type="checkbox"/>				2020BTEEN00018	2020BTEEN00018	Muhfeez Ugare	3rd	Electronics	0	ABSENT
<input type="checkbox"/>				2020BTEEN00059	2020BTEEN00059	Ranjit Dhaigude	3rd	Electronics	0	ABSENT
<input type="checkbox"/>				2020BTEIT00001	2020BTEIT00001	Gaurav Verma	1st	Information Tech.	0	ABSENT
<input type="checkbox"/>				2020BTEIT00076	2020BTEIT00076	Gaurav Patil	3rd	Electronics	0	ABSENT
<input type="checkbox"/>				2020BTEME00001	2020BTEME00001	Ram Patel	4th	Mechanical	0	ABSENT

Table 7: Changes in Database after Administration_SMod

CASE 2: Record not found

Administration_SMod

WALCHAND COLLEGE OF ENGINEERING, SANGLI
(Government Aided Autonomous Institute)

DEPARTMENT OF ELECTRONICS ENGINEERING

Student **Section**

PRN: 2020BTEEN00001 Name:

Year: Branch:

OK Clear Exit

Message
Record Not Found
OK

Figure 3.23 Administration_SMod (Record Not Found)

K) Administration_SDel

The screenshot shows a web application window titled "Administration_SDel". The header section is dark blue with white text: "WALCHAND COLLEGE OF ENGINEERING, SANGLI (Government Aided Autonomous Institute)" and "DEPARTMENT OF ELECTRONICS ENGINEERING". The main content area has a light yellow background with the title "Student Deletion Section". Below this, there are four input fields: "PRN:" (white), "Name:" (light gray), "Year:" (light gray), and "Branch:" (light gray). At the bottom, there are three buttons: "OK", "Clear", and "Exit", all in dark blue with white text.

Figure 3.24 Administration_SDel (Overview)

- This page is visible when we click on **Delete Student** in the **Administration_Desk**.
- This page is a part of Administration View.
- Through this page, admin can delete the details of existing student permanently.
- By default, only PRN is Visible and Name, Year, Branch are **non-editable** while the **OK button** is **disabled**.
- Constraints are that PRN entered should be present in the database.
- When PRN is entered, and assuming to be present in the database, then automatically the details of respective student will be visible into the respective text fields, which are non-editable and admin can clarify whether to delete the same student or not.
- After all the fields are displayed to the admin, then **OK button** is **enabled** and once admin click it, then the record of that student will get permanently deleted from the database.
- There are in total 3 Buttons as such: **OK**, **Clear** and **Exit**.
- When we click on **OK button**, record of student with respective fields will get deleted from the database.
- When we click on **Clear Button**, PRN, Name, Year and Branch will be cleared off.
- When we click on **Exit button**, then we will be directed back to **Administration_Desk**.

CASE 1: Deletion of Student

Administration_SDel

WALCHAND COLLEGE OF ENGINEERING, SANGLI
(Government Aided Autonomous Institute)

DEPARTMENT OF ELECTRONICS ENGINEERING

Student Deletion

PRN: 2020BTECS00001 Name: Rohan Kamble

Year: 1st Branch: Computer Science

OK Clear Exit

Message
Student Deleted Successfully.
OK

Figure 3.25 Administration_SDel (Deletion of Student)

				PRN	Password	Name	Year	Branch	Count	Status
<input type="checkbox"/>				2020BTECV00001	2020BTECV00001	Mahesh Mehta	2nd	Civil	0	ABSENT
<input type="checkbox"/>				2020BTEEL00001	2020BTEEL00001	Manisha Verma	2nd	Electrical	0	ABSENT
<input type="checkbox"/>				2020BTEEN00008	Sanmay@123	Sam Kulkarni	1st	Electronics	1	PRESENT
<input type="checkbox"/>				2020BTEEN00018	2020BTEEN00018	Muhfeez Ugare	3rd	Electronics	0	ABSENT
<input type="checkbox"/>				2020BTEEN00059	2020BTEEN00059	Ranjit Dhaigude	3rd	Electronics	0	ABSENT
<input type="checkbox"/>				2020BTEIT00001	2020BTEIT00001	Gaurav Verma	1st	Information Tech.	0	ABSENT
<input type="checkbox"/>				2020BTEIT00076	2020BTEIT00076	Gaurav Patil	3rd	Electronics	0	ABSENT
<input type="checkbox"/>				2020BTEME00001	2020BTEME00001	Ram Patel	4th	Mechanical	0	ABSENT

Table 8: Changes in Database after Administration_SDel

CASE 2: Record not Found

Administration_SDel

WALCHAND COLLEGE OF ENGINEERING, SANGLI
(Government Aided Autonomous Institute)

DEPARTMENT OF ELECTRONICS ENGINEERING

Student Selection

PRN: Name:

Year: Branch:

Message
Record Not Found

Figure 3.26 Administration_SDel (Record Not Found)

L) Administration_SAttendance

Administration_SAttendance

WALCHAND COLLEGE OF ENGINEERING, SANGLI
(Government Aided Autonomous Institute)

DEPARTMENT OF ELECTRONICS ENGINEERING

Mark Attendance

PRN: Name:

Year: Branch:

Figure 3.27 Administration_SAttendance (Overview)

- This page is visible when we click on **Mark Attendance** in the **Administration_Desk**.
- This page is a part of Administration View.
- Through this page, admin can mark attendance of respective student manually.
- By default, only PRN is Visible and Name, Year, Branch are **non-editable** while the **OK button** is **disabled**.
- Constraints are that PRN entered should be present in the database.
- When PRN is entered, and assuming to be present in the database, the automatically the details of respective student will be visible into the respective text fields, which are non-editable and admin can clarify whether to mark attendance of the same student or not.
- When all the fields are entered, **OK button** is **enabled** and after clicking on it, the attendance of respective student will be marked and updation will be done in the database.
- There are in total 3 Buttons as such: **OK**, **Clear** and **Exit**.
- When we click on **OK button**, attendance of respective student will be marked and updation will be done in the database.
- When we click on **Clear button**, PRN, Name, Year and Branch will be cleared off.
- When we click on **Exit Button**, then we will be directed back to **Administration_Desk**.

CASE 1: Attendance Marked

Administration_SAttendance

WALCHAND COLLEGE OF ENGINEERING, SANGLI
(Government Aided Autonomous Institute)

DEPARTMENT OF ENGINEERING

Mark Attendance

PRN: Name:

Year: Branch:

Message
Student attendance is marked.

Figure 3.28 Administration_SAttendance (Attendance Marked)

				PRN	Password	Name	Year	Branch	Count	Status
<input type="checkbox"/>				2020BTECV00001	2020BTECV00001	Mahesh Mehta	2nd	Civil	0	ABSENT
<input type="checkbox"/>				2020BTEEL00001	2020BTEEL00001	Manisha Verma	2nd	Electrical	0	ABSENT
<input type="checkbox"/>				2020BTEEN00008	Sanmay@123	Sam Kulkarni	1st	Electronics	1	PRESENT
<input type="checkbox"/>				2020BTEEN00018	2020BTEEN00018	Muhfeez Ugare	3rd	Electronics	1	PRESENT
<input type="checkbox"/>				2020BTEEN00059	2020BTEEN00059	Ranjit Dhaigude	3rd	Electronics	0	ABSENT
<input type="checkbox"/>				2020BTEIT00001	2020BTEIT00001	Gaurav Verma	1st	Information Tech.	0	ABSENT
<input type="checkbox"/>				2020BTEIT00076	2020BTEIT00076	Gaurav Patil	3rd	Electronics	0	ABSENT
<input type="checkbox"/>				2020BTEME00001	2020BTEME00001	Ram Patel	4th	Mechanical	0	ABSENT

Table 9: Changes in Database after Administration_SAttendance

CASE 2: Record not Found

The screenshot displays the 'Administration_SAttendance' application window. The title bar reads 'Administration_SAttendance'. The header section is dark blue with white text: 'WALCHAND COLLEGE OF ENGINEERING, SANGLI (Government Aided Autonomous Institute)' and 'DEPARTMENT OF ELECTRONICS ENGINEERING'. The main area has a light yellow background. A message box titled 'Message' is overlaid on the form, displaying an information icon, the text 'Invalid prn', and an 'OK' button. The form contains the following fields and buttons:

- PRN:** A text box containing '2020BTEEN00001'.
- Name:** A text box.
- Year:** A text box.
- Branch:** A text box.
- Buttons:** 'OK', 'Clear', and 'Exit' buttons at the bottom.

Figure 3.29 Administration_SAttendance (Record Not Found)

M) Administrator_Sview

- This page is visible when we click on **Display Attendance** in the **Administration_Desk**.
- This page is a part of Administration View.
- Through this page, admin can see which all students have scanned and marked their attendance in the library.
- There is 1 Button as such: **PRINT**.
- When we click on **Print button**, then we can download the attendance in any format (**WORD, EXCEL, PDF**).

Administration_SView ×

PRN	Name	Year	Branch	Count	Status
2020BTEEN00008	Sam Kulkarni	1st	Electronics	1	PRESENT
2020BTEEN00018	Muhfeez Ugare	3rd	Electronics	1	PRESENT

Print

Figure 3.30 Administration_SView (Displaying Attendance)

N) Exiting the Project:



Figure 3.31 Exiting the Project

- Once we exit our project, then we will see that by default, the status of every record will be updated to “**ABSENT**”, wherein the count will remain as it is.

























<div><div><div></div><div></div><div></div></div></div>				PRN	Password	Name	Year	Branch	Count	Status
<input type="checkbox"/>	 Edit	 Copy	 Delete	2020BTECV00001	2020BTECV00001	Mahesh Mehta	2nd	Civil	0	ABSENT
<input type="checkbox"/>	 Edit	 Copy	 Delete	2020BTEEL00001	2020BTEEL00001	Manisha Verma	2nd	Electrical	0	ABSENT
<input type="checkbox"/>	 Edit	 Copy	 Delete	2020BTEEN00008	Sanmay@123	Sam Kulkarni	1st	Electronics	1	ABSENT
<input type="checkbox"/>	 Edit	 Copy	 Delete	2020BTEEN00018	2020BTEEN00018	Muhfeez Ugare	3rd	Electronics	1	ABSENT
<input type="checkbox"/>	 Edit	 Copy	 Delete	2020BTEEN00059	2020BTEEN00059	Ranjit Dhaigude	3rd	Electronics	0	ABSENT
<input type="checkbox"/>	 Edit	 Copy	 Delete	2020BTEIT00001	2020BTEIT00001	Gaurav Verma	1st	Information Tech.	0	ABSENT
<input type="checkbox"/>	 Edit	 Copy	 Delete	2020BTEIT00076	2020BTEIT00076	Gaurav Patil	3rd	Electronics	0	ABSENT
<input type="checkbox"/>	 Edit	 Copy	 Delete	2020BTEME00001	2020BTEME00001	Ram Patel	4th	Mechanical	0	ABSENT

Table 10: Changes in Database after Exiting the Project

The Tabular Representation of the above is as follows

	Frame Name	Buttons	Action Listener	Focus Listener
1.	Home_Page	1) Start 2) Exit	✓	×
2.	Main_Page	1) Student Desk 2) Administration Desk 3) Exit	✓	×
3.	Student_Desk	1) Mark Attendance 2) View Attendance 3) Update Password 4) Exit Option	✓	×
4.	Student_SAAttendance	1) OK 2) Clear 3) Exit	✓	✓
5.	Student_View	1) OK 2) Clear 3) Exit	✓	✓
6.	Student_UpdatePass	1) OK 2) Clear 3) Exit	✓	✓
7.	Administration_Desk	1) Add Student 2) Modify Student 3) Delete Student 4) Mark Attendance 5) Display Attendance 6) Exit Option	✓	×
8.	Administration_SAdd	1) OK 2) Clear 3) Exit	✓	✓
9.	Administration_SMod	1) OK 2) Clear 3) Exit	✓	✓
10.	Administration_SDel	1) OK 2) Clear 3) Exit	✓	✓
11.	Administration_SAAttendance	1) OK 2) Clear 3) Exit	✓	✓
12.	Administration_SView	1) Print	✓	×

Table 11: List of buttons and listeners

CHAPTER 4

4.1. Advantages

- Project successfully stores the data in the database (MySQL) which can be used as references for further authentications as such.
- No proxy as the system is password protected.
- Allows the local administrator to view in the details of exact number of entries per day.
- Authorized Entries allowed.

4.2. Disadvantages

- Project executed at local-host perspective.
- The Different databases of two systems which runs the same applications are not synchronized.

4.3. Applications

- Project can be implemented in School, Library and in College Premises.
- Project can be implemented in Factories to mark the attendances of workers.
- Project can be implemented in offices so as to mark the attendances of employees

4.4. Conclusion

The Library Check-In System in some sort eliminates some of the drawbacks being based in the Security and Automation System. This project is a success and next phase of the project with modifications as such will be done in the Mega Project in the 4th Year.

References

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2. <https://www.youtube.com/watch?v=FWvEEtrTGRQ/>
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