

Final Year Project Report
Student Tracking System
And Online Attendance
B.S. Computer Engineering, Batch 2016

Project Advisor

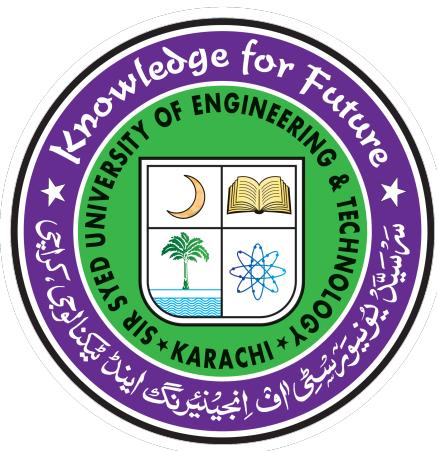
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November 2019

Preface

Our project named “**Student Tracking System And Online Attendance**” web application development using Html, Css, C Sharp is designed to make easier and close to accurate attendance for the students and easy to know for parents what is the student status. Basically our project is based upon RFID device and the desktop system for admin who control softly. We worked to provide some security for students using RFID technology. Our web application is also supportable for windows, mac, linex, ios as well as android and many more devices.

Acknowledgments

We the students of SIR SYED UNIVERSITY OF ENGINEERING AND TECHNOLOGY (COMPUTER ENGINEERING DEPARTMENT) have made this project “Student Tracking System And Online Attendance” express our sincere praise and thanks to ALLAH for his blessings which He showered on us throughout our lives, especially in this project.

We thank our Advisor MISS SABA AHSAN. She gave us the chance to work on this project. She enhanced our abilities and increased our knowledge about practical life. She motivated us throughout the project and encouraged us to take part in different competitions. Despite providing us his precious time, She also shared her valuable thoughts about the topic and how it can be enhanced to be a more practical product.

We are also thankful to our respected teachers who taught us in these four years. They always guided us in the right path whenever we stray away. Without their guidance it was nearly impossible to achieve such a great success. Special Thanks to Final Year Project committee for helping and guiding us in detail to enhanced this project to it give a professional look. They also supported us by giving ideas about our project. They were always there for any assistance during the development of this project.

Acknowledgments enable you to thank all those who have helped in carrying out the research. Careful thoughts needs to be given concerning those who help should be acknowledged and in what order. The general advice is to express your appreciation in a concise manner and to avoid strong emotive language.

Note however that every project is different and you need to tailor your acknowledgements to suit your particular situation.

Almighty Allah

Main supervisor

Second supervisor

Other academic staff in your department

Technical or support staff in your department

Academic staff from other departments

Other institutions, organizations or companies

Past students

Family

Friends

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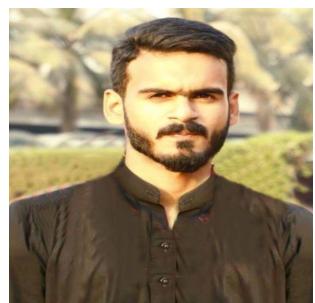
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CERTIFICATE OF COMPLETION

This is to certify that the following students

Muhammad Habib Yousuf	2016-CE-091
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Syed Qasim Athar	2016-CE-199

Have successfully completed their Final Year Project named

'Student Tracking System And Online Attendance'

In the partial fulfillment of the Degree of Bachelor of Science in
Computer Engineering

Ms Saba Ahsan

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Abstract

Attendance Management is a key tool to determine any organization success and performance. Considering this, it is very difficult for an organization to maintain large records manually. The ability to compute the attendance percentage becomes a major task as manual computation produces errors, and wastes a lot of time. Moreover, the under age students easily gets involved in unwanted activities and bunk their classes. For the proposed reason, a systematized Web-Based application for students is designed to manage and track student's form entrance to class room and provide online attendance.

The system is implemented using The Asp.Net framework. In addition, CSharp provides dynamicity to the application. The database used is SQL Server. Here the software using a microcontroller controls all the hardware components. In this system students are able to mark their attendance online by the use of a via card or biomatically. With the same card their location will be tracked machine and they can be easily monitored inside the school. This is possible by the use of latest technology

i.e. RFID (Radio Frequency Identification). This online system is designed in a way that the students attendance, tracking, result records and all the important notices will be uploaded on to the application as well as into the database. Therefore, parents will not be bothered for non-pertinent meetings with the teachers as they are already aware. Through the test case it is proved that the system is working efficiently and prepared to serve its benefits to any organization. Keywords: Attendance Management, Web-Based Application, RFID (Radio Frequency Identification) and biometric, location tracked.

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Chapter 1

Introduction

1.1 Overview

Currently, low-cost Radio Frequency Identification (RFID) has been implemented widely in both industry and academic institutes as discussed where the technology was focused more efficient in terms of processing time. It saves time and money. A contactless transfer of data between the data-carrying device and its reader is far more flexible than smart card and RFID and Thumb technology provides this contactless ID system solution.

1.2 Objectives

The goal of this project is basically try to make Students security ensure through software network by an applicant However, we'll do it on a smaller scale and utilize legal means. Our project will mainly focus on the following objectives: Develop a system that automatically track and make attendance of students through his/her chip fitted card /passcode/thumb impression The biggest challenge we expect to face will be ... To address this challenge, we will ...

1. Develop a system that automatically track and make attendance of students through his/her chip fitted card /passcode/biomatric
2. Build a user profile database
3. Utilize data mining techniques to find similar students according to certain personal preferences.
4. Provide a user-friendly graphical user interface to display user profiles and lists of similar students based on similar personality traits.
5. Build web based application to track attendance progress.

To achieve the first goal, we will ...

To achieve the second goal, we will...

To achieve our third goal, we will ...

The biggest challenge we expect to face will be ... To address this challenge, we will ... Also, we will

1.3 System Features

1.3.1 Online student attendance

Roll call system is the method used to take attendance in a majority of institutions. Though it is inexpensive but time and effort taking. For this online attendance is a good alternative. For this students have to swipe their RFID cards on to the reader and instantly attendance will be save and notification send on to the web. Thus, it saves the time and inaccuracy.

1.3.2 Update parents

Update parents of their kid at the time of Entering in the school.

1.3.3 Tracking

Students safety is the most important. Usually parents remain unaware and tense about their children when they go out for learning. To avail this feature students have to swipe RFID cards or thumb print on to the reader placed at the entrance of school and their tracking will start from entrance to class room. Thus, parents will know whether their children are heading towards the class or not. In this modern era of technology, parents and students both will be benefited by this system.

1.3.4 Records Updation

Parents must be aware about their children performance and behavior. Students results and all the important notices will be uploaded on to the application. Therefore, parents will not be bothered for irrelevant meetings with the teachers as they are already aware.

1.4 System Functionalities

The attendance system asp.net project has main three modules. • Admin Module • Staff Module • Student Module

1.4.1 Admin

The Admin is a person who run and manage the system, in this project the owner or director of the school has rights of admin. The Admin creates the structure of a system to creating standard and classroom.

1.4.2 Admin Functionalities

- Add Standard
- Add Division / Classroom
- Add Staff
- Staff Report
- Manage Complaint

- Leave Reports
- Add Student
- Student Reports
- Manage Reports

1.4.3 Staff

Staff can add student detail and his division students and he can manage leaves and complains made by only his division student.

1.4.4 Staff Functionalities

- Manage Leave
- Manage Complain
- Manage Reports
- Change Password

1.4.5 Student

All student have unique username and password to access the system. After login into system student can view his attendance reports and manage his account. If any student has any problem regarding education he can directly make complain to his class teacher using this system. Student can apply for leave through the system and he can get reply from his class teacher about his leave status.

1.4.6 Student Functionality

- Manage Account
- Tracked Point
- Mark Attandance
- Make Complain
- Apply for Leave
- Attendance Reports
- Change Password

Chapter 2

Literature Review

2.1 Introduction

As our project is concerned there are many related works done in the past. Some of which include RFID based attendance system. They design a prototype system to facilitate the authority by the automation of attendance using RFID technology[1].

According to [2] Face Recognition Based Attendance System Using Machine Learning in which students roll is called through face recognition. This system uses Viola and Jones framework which makes use of Integral Image and AdaBoost learning algorithm as classifier that gives better results in different lighting conditions.

Attendance Management System Using Barcode Identification. They develop a system that uses barcodes. Student attendance will be taken by swiping the card on barcode reader. The barcodes would be attached at the back of each student's ID card and the information that would be embedded in the barcodes will contain unique data of the student and all the necessary information about the student[3].

Attendance recording and consolidation system using Arduino and Raspberry Pi. This system is implemented using Arduino and Raspberry Pi microcontroller boards. Arduino is used to implement the attendance recording device Raspberry Pi is used as a Web server. ZigBee technology is used for transmitting the attendance from the ARD to the server. A web page is also created to display the aggregate percentage of attendance of each student[4].

2.2 The value of a Literature Survey

The significance of this system for our society lies as under.

When students enter into school their location is tracked and their parents can observe their activity. By online attendance school staff don't need to be worry about attendance accuracy any more. Online student record updates, important notices i.e. parents will remain well-informed about their children status.

This system can be used in any educational institution. However, anywhere this system will be applied, it will surely serve benefits. This literature focuses on one of the prominent paper of 2018's written by Karwan Jacksi, Falah Ibrahim, Shahab Ali, Scholars Journal of Engineering and Technology (SJET), Issue 15, February-2018.

In our country this technology has not emerged as yet. Hence, our project is a new innovation in terms of the whole package (features we are providing). We are donating this project to a school named "Peace International Education System". Therefore the features are in accordance to the school demand.

2.3 Tips for Writing a Literature Survey

1. Identify and develop a research question/main idea. It is important. Example, Research shows that diversity training often fails in workplaces. In what ways does it fail? What needs to be done to have successful diversity training?
2. Read the research studies on your topic critically. Look for the author's main purpose, the points s/he makes, how the points are supported (what kinds of evidence is used), whether the evidence seems strong and persuasive, and the conclusions that are reached.
3. Look for the points that emerge as you read the research studies relevant to your question. Based on the ideas you see being repeated, outline some main points to address in your review.
4. Decide what studies support each of the points you have outlined. You may use studies more than once if they are relevant to more than one point in your outline.
5. Use material from the studies as evidence for your points, bringing together material from multiple sources to show the ways in which various studies have addressed the same or similar points.
6. Organize your review, e.g. Overview of Issue, Review of Literature, Conclusion, References/Works Cited Page.
7. Cite and document sources appropriately. Be sure to introduce the research studies appropriately in your text as well, using a documentation style relevant to your field.

Chapter 3

Technical Documentation

Interface and Design

The flow chart of QUICKU. First, the RFID tag should be assigned to user (student). Then RFID tag is turned ON and the tag must be placed in a reading range. The antenna will generate the radio frequency field to the tag. Then, RFID will be detected after the reader receives signals from the tag and uses to record attendance and saves it in the database or to search student's details in the database. Although these steps sound simple but the most important key is to register the tag first. Secondly if problems still occur, some maintenance work would be required to identify the status of the tag and the reader. This process will repeat if a student with a tag enters the antenna reader region.

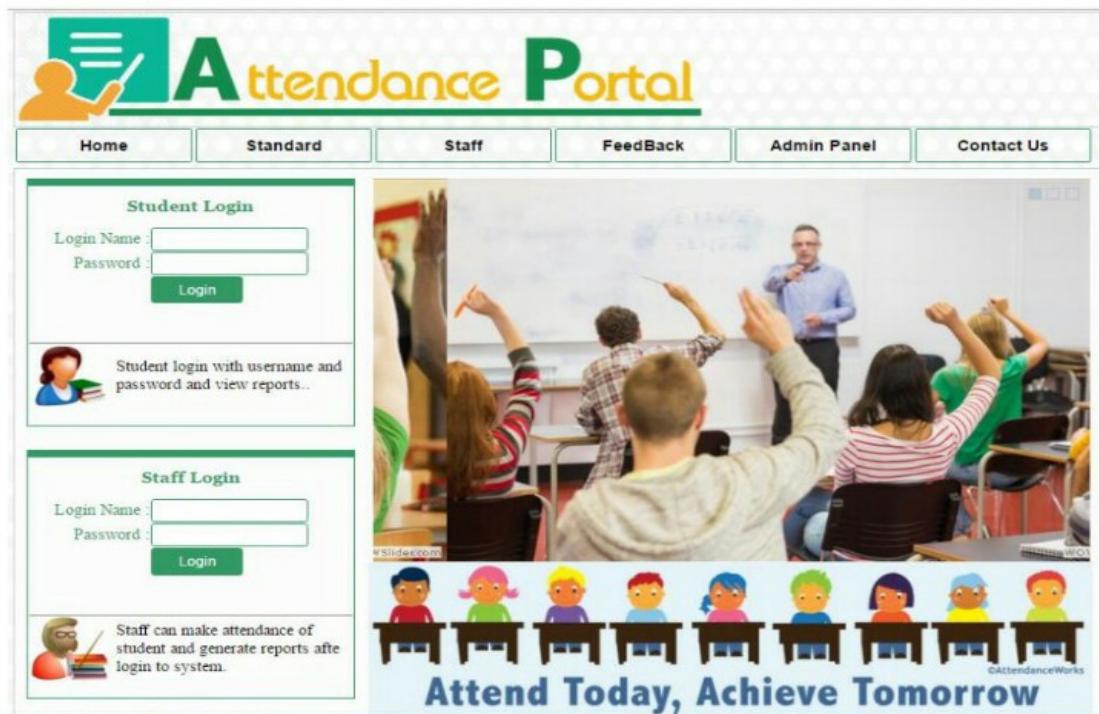


Figure 3.1: User Interface

Implementation

The Implementation phase will include the following aspects that are discussed below:

Testing

During the development process, testing will be done to ensure all modules are built correctly. Application integration testing has been done after we have built all elements and then it combined into the application.

Evaluation

After we have done all the testing , we will evaluate the application to check whether it fulfills our aim or not. If it fulfills well then we directly go through the next stage. If it is not fulfills then we can scrutinize it out.

3.1 DFD Diagrams

Admin DFD

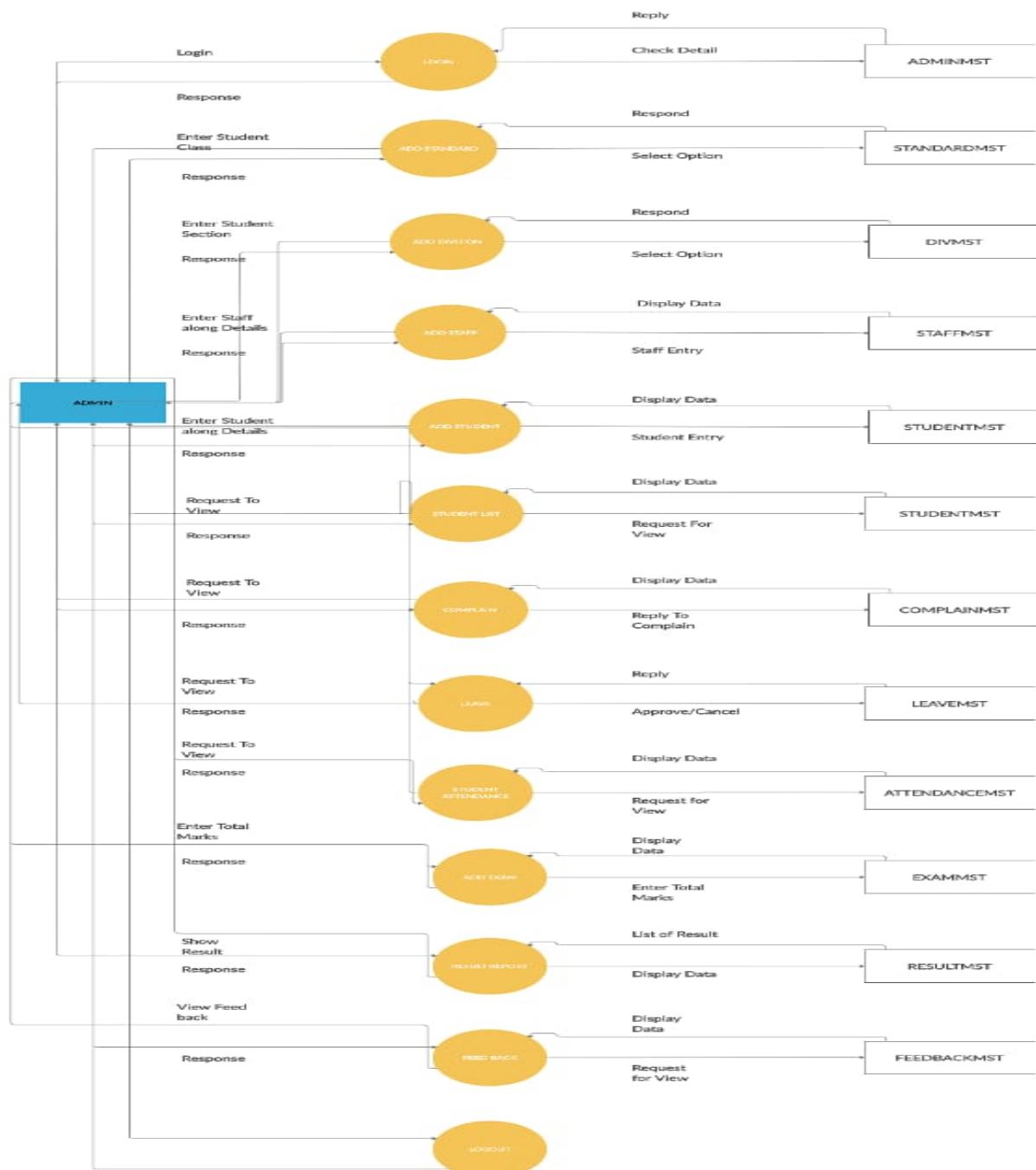


Figure 3.2: AdminDFD

Staff DFD

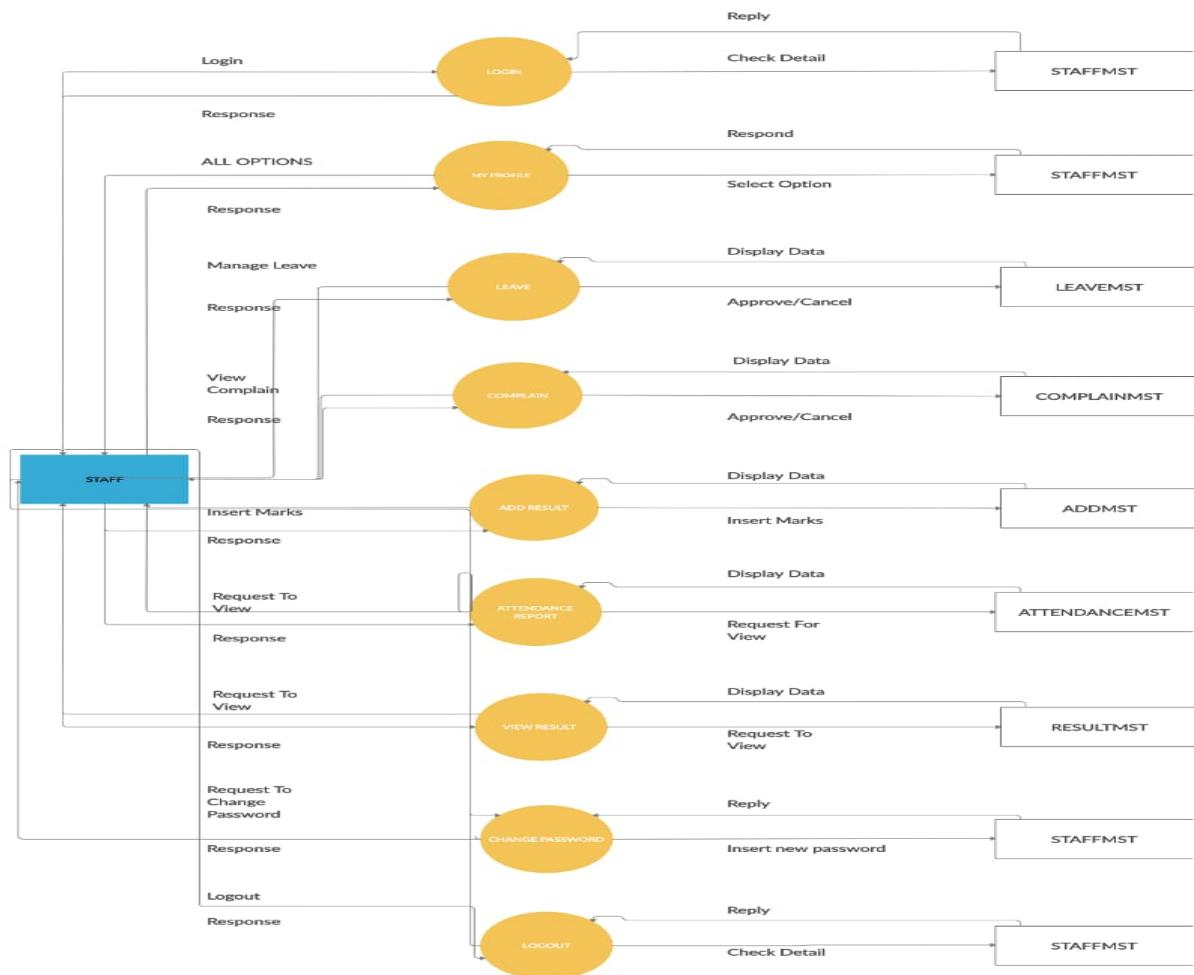


Figure 3.3: Staff DFD

Student DFD

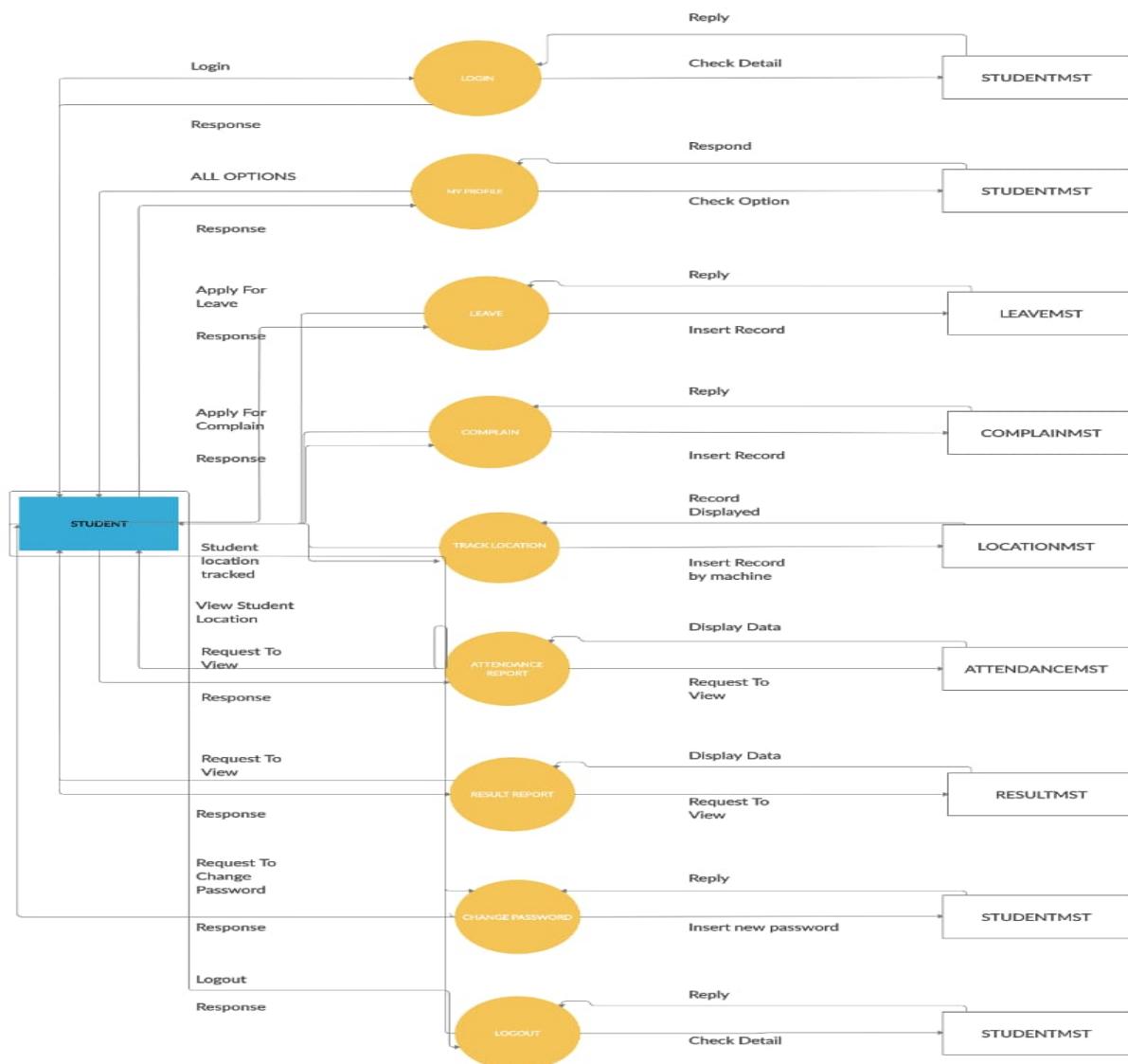


Figure 3.4: Student DFD

3.2 ERD Diagram

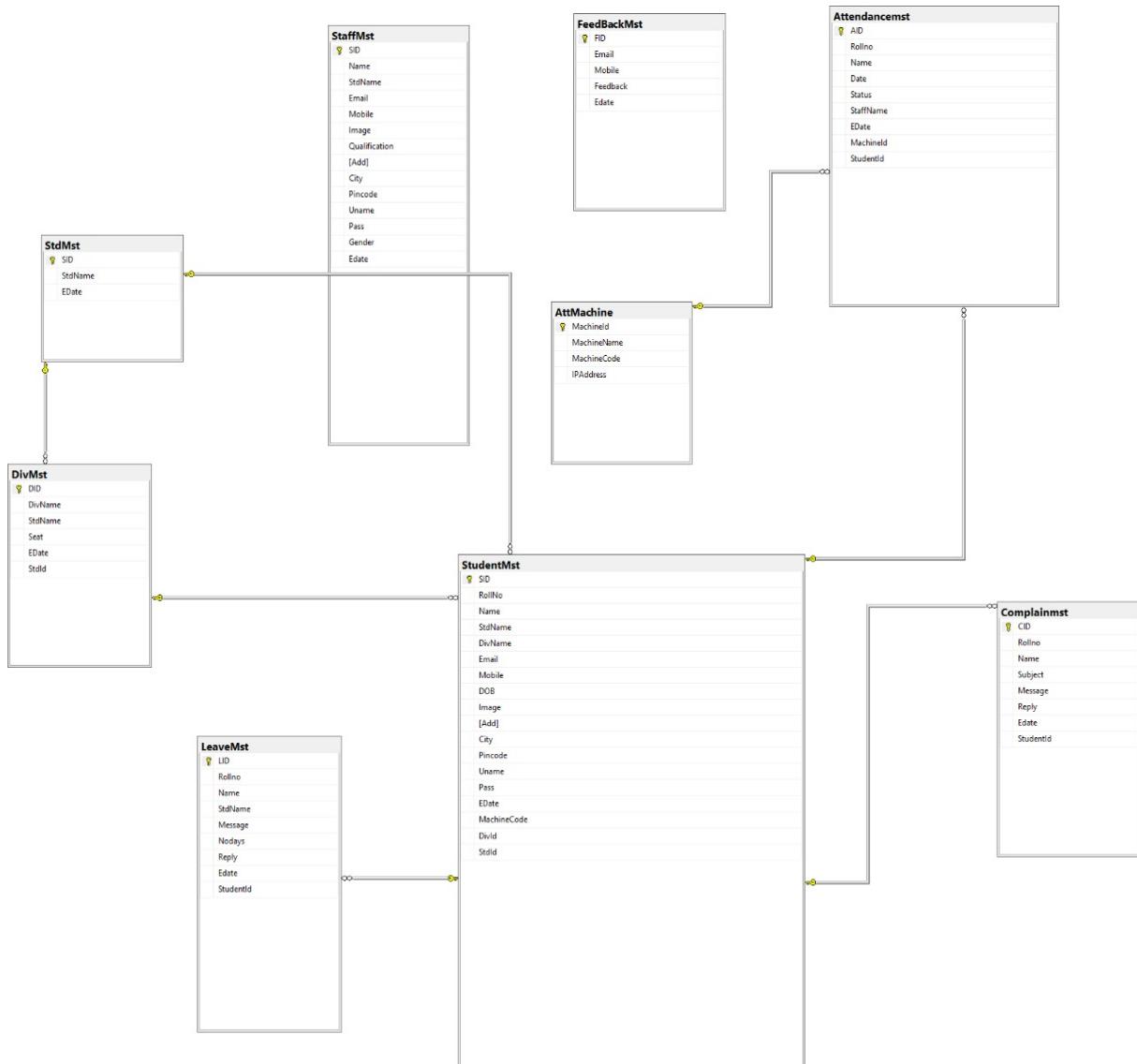


Figure 3.5: ERD Diagram

3.3 Use Case Diagrams

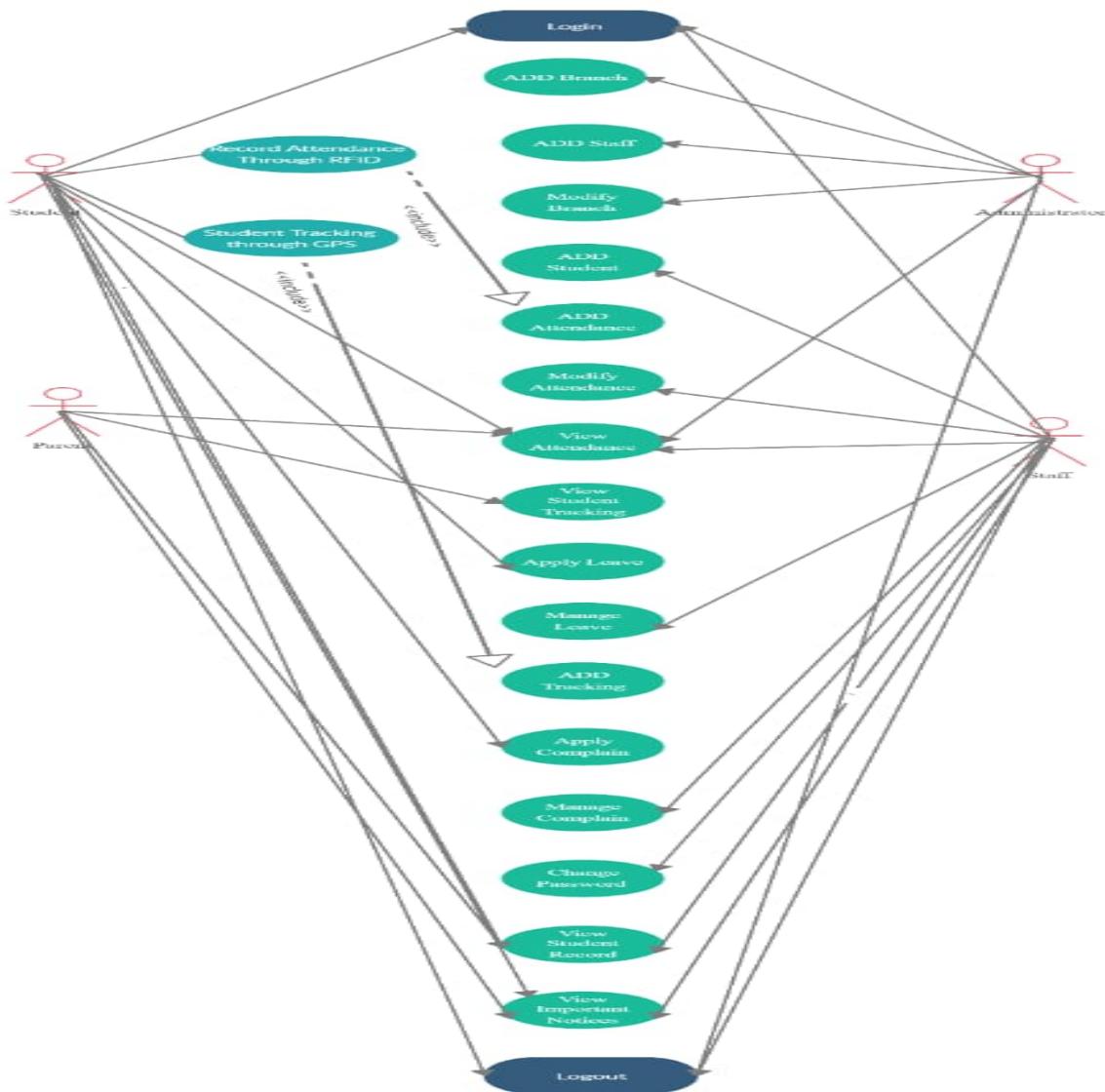


Figure 3.6: Usecase Diagram

3.4 Stakeholder Register

Name	Position	Organization	Contact	Type of stakeholder	Communication (type)	Expectation	Influence on Project outcome
Muhammad Habib Yousuf	Group Leader	SSUET	Email:habibyousuf94.hk@gmail.com Phone:0314-5690546	Internal	Daily Meeting, Checkpoint	On time, On budget delivery	influencer
Bushra Alam	Group Member	SSUET	Email:bushra.alam21@gmail.com Phone:0345-2529962	Internal	Daily Meeting, Checkpoint	On time, On budget delivery	influencer
Shumail Javed	Group Member	SSUET	Email:khanaleena939@gmail.com Phone:0311-0826595	Internal	Daily Meeting, Checkpoint	On time, On budget delivery	influencer
Syed Qasim Athar	Group Member	SSUET	Email:syedqasimatkar@yahoo.com Phone:0334-3448009	Internal	Daily Meeting, Checkpoint	On time, On budget delivery	influencer

Figure 3.7: Stakeholder Register

3.5 Risk Register

sno	Category	Risks	Probability	Impact
1	Technology risk	Obsolete Technology	10%	1
2	Business impact	Product may harm the business	10%	1
3	Process Risk	Low product quality	10%	1
4	Development Risk	Insufficient resources	20%	2
5	Product Size	Where size estimation could be wrong	20%	2
6	Customer Risk	User/customer may fail to operate	40%	3
7	Cont Risk	Product cost may be high	40%	3

Figure 3.8: Risk Register

3.6 Gantt Chart

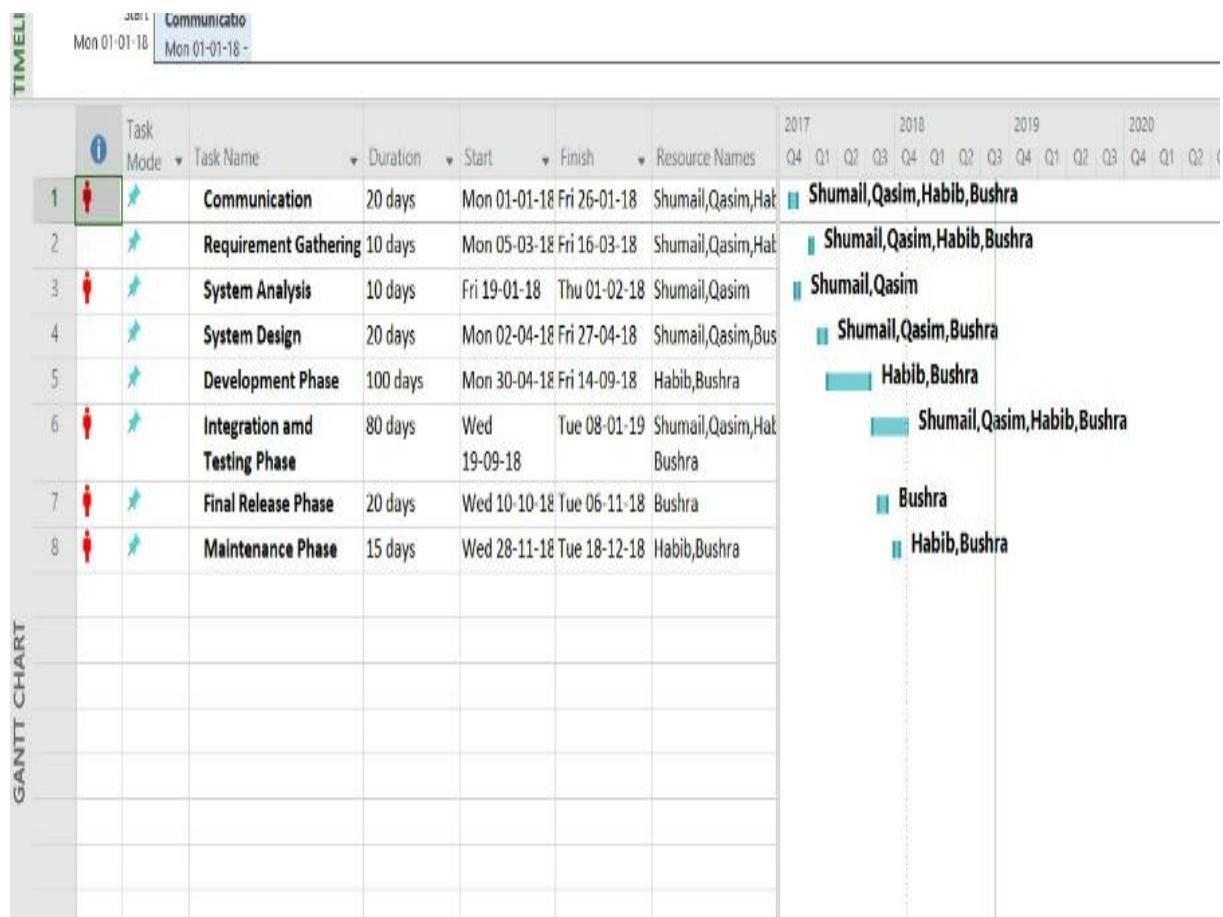


Figure 3.9: Gantt Chart

Chapter 4

Methodology

4.1 Design

Throughout the project we will follow the Feature Driven Development Methodology as our project is well-defined and well-featured. In this paper we proposed a unique methodology in which we are not only keeping attendance records of students but also tracking their location in the school as well as keeping the parents aware of their child presence and performance. In this context, the parents and school staff should have the web application (as only school staff and parents have the access). Students attendance, tracking and updates will appear on school server as well as on web application as notifications

Include System Block Diagram



Figure 4.1: System Block Diagram

Include Modular System Block Diagram

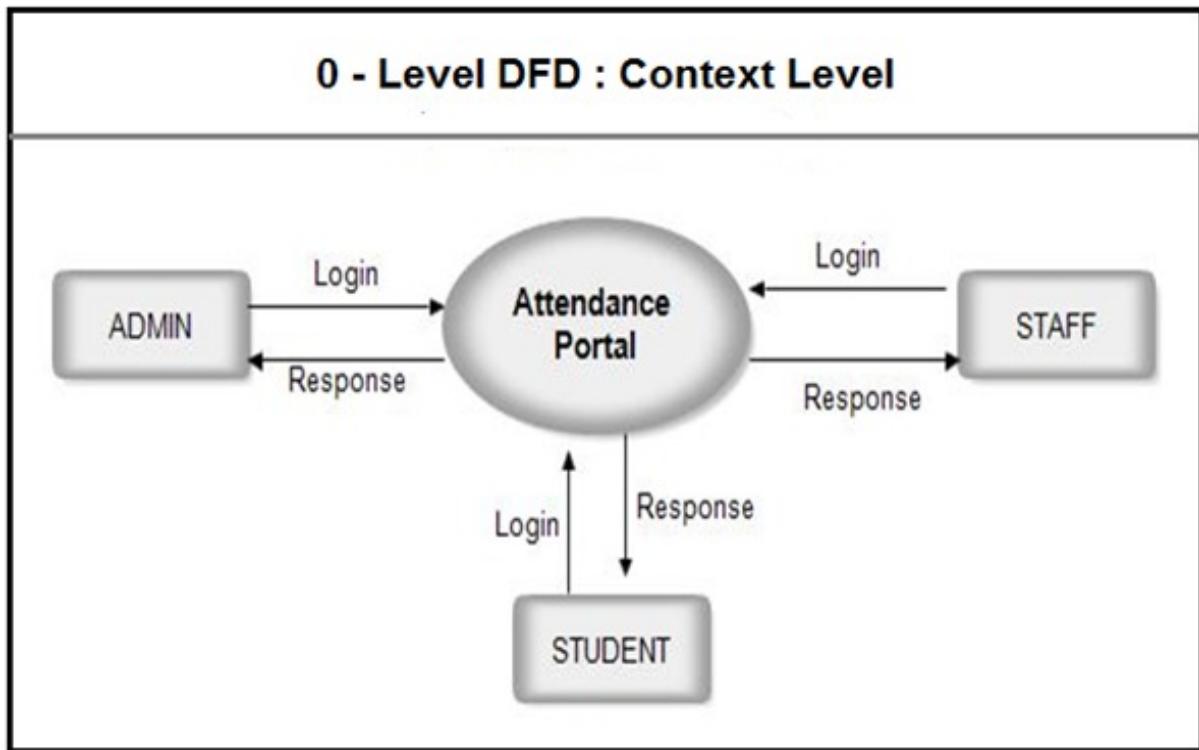


Figure 4.2: Modular System Block Diagram

4.2 Performance Requirements

This system will be efficient enough and going to be integrated on a large scale in the school. It can be accessed from anywhere. Parents will see their children's attendance, activities, enrollment, results and important notices.

4.2.1 RFID Device

RFID device is used with the following specification.

4.2.2 System Capacity And Specification

Desktop pc requires 500 MB of size, need 4 GB of ram with dual core processor are the minimum recommended requirement for an application.

4.2.3 Phone Requirement

The requirement for mobile device is 2 GB of ram, capacity of 300 MB or higher.

4.3 Hardware Requirements

The system will be composed of RFID card, RFID THUMB Reader, Ethernet Shield, RFID Device, host pc and a smart phone.

4.4 Software Requirements

Software required for the system include ASP.Net languages along with Visual Studio platforms. Database is also an important requirement for which we are using SQL Server.

4.5 Safety Requirements

School will always know which students are on campus and have a pretty good idea of where they're. When students enter into school, they swipe their RFID cards on to the device and their tracking will start. Parents, in general, are always concerned and have that sense of feeling that their children are safe. These things have aggravated the parents emotional distress and face issues of sitting at home or office concerned about the safety and study of their children.

4.6 Software Quality Attributes

This RFID attendance system is an automatic embedded system used in collect attendance of registered persons in every particular classes in the school. The RFID attendance system offers to build an efficient organization, the performance and expediency associated with RFID technology are inexpensive. This action is fast and simple.

4.6.1 Microsoft Visual Studio

Microsoft visual studio is an Integrated Development Environment (IDE) from Microsoft it is used to develop computer programs for Microsoft Windows, as well as Desktop Applications, websites, web application, web server and many more. Visual studio is the Microsoft development platform such as windows API.



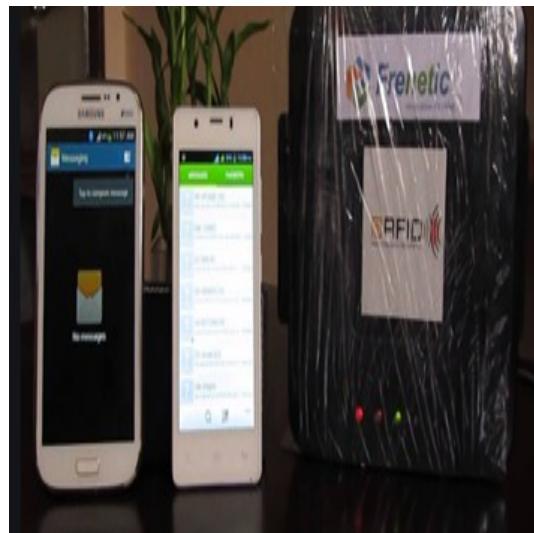
4.6.2 SQL Server

SQL Server is a database server by Microsoft. ... SQL is a special-purpose programming language designed to handle data in a relational database management system. SQL statements are used to perform tasks such as update data on a database, or retrieve data from a database. Some common relational database management systems that use SQL are: Oracle, Sybase, Microsoft SQL Server, Access, Ingres, etc. A database server is a computer program that provides database services to other programs or computers, as defined by the client-server model.



4.6.3 RFID Device

RFID based Attendance recorder with tracking System is a web based application that will be developed to overcome the above stated problem. Therefore, the system functionality is not only records the student attendance, but also sends alert notification to their parents when the student is absent. Parents can watch student attendance, schedule, result and current notices online through web.



Chapter 5

Experiments And Results

As we have done with the student management system this is a system of management information system for education establishments to manage Student data after experiment.

It is providing us the capabilities for existing students in courses admitting students, tracking student attendance and submitting students complain. In the result it is also ensured us about the data integrity, privacy and security in an open access environment. And also the System Comparison shown in figure.

Table 5.1: Comparison is given in Figure 5.1

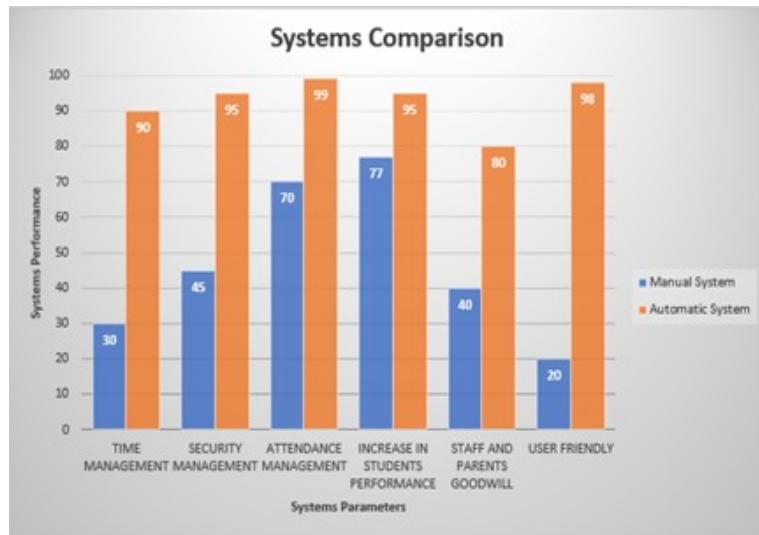


Figure 5.1: Summarization of ...

Chapter 6

Costing

Costing -COCOMO MODEL

The Constructive Cost Model(COCOMO) is a procedural software cost estimation model developed by Barry W. Boehm. The model parameters are derived from fitting a regression formula using data from historical projects(61 projects for COCOMO 81 and 163 projects for COCOMO II). COCOMO is used to estimate size, effort and duration based on the cost of the software. Basic COCOMO compute software development effort (and cost) as a function program size. Program size is expressed in estimated thousands of source lines of code(SLOC, KLOC). COCOMO applies to three classes of software projects:

- Ganic projects – “small” teams with “good” experience working with “less than rigid” requirements.
- Semi-detached projects - “medium” teams with mixed experience working with a mix of rigid and less than rigid requirements.
- Embedded projects – developed within a set of “tight” constraints. It is also combination of organic and semi-detached projects.(hardware,software,operational,...)

6.1 Actual Estimation and Applied Result

Estimate Result for COCOMO Model:

For Semi-Detached software project KLOC of the project is:

Effort:

$$EffortApplied(E) = a * (KLOC)^b$$

$$EffortApplied(E) = (3)(8.4)^{1.05}$$

$$EffortApplied(E) = (29.61)$$

Duration:

$$\text{Duration} = c * (\text{EffortApplied})^d$$

$$\text{Duration} = (2.5)(29.61)^{0.35}$$

$$\text{Duration} = (8.32) \text{ Months}$$

Staff Size:

$$\text{StaffSize} = \text{EffortApplied}/\text{Duration}$$

$$\text{StaffSize} = (29.61)/(8.32)$$

$$\text{StaffSize} = (3.55)$$

Development Productivity:

$$\text{DevelopmentProductivity} = \text{KLOC}/\text{EffortApplied}$$

$$\text{DevelopmentProductivity} = (8.4)/(29.61)$$

$$\text{DevelopmentProductivity} = (0.283)$$

Chapter 7

User Manual

The user manual will guide to start the web application and how to use can be seen in the application and how they can enter the data in the application.

7.0.1 Getting Started

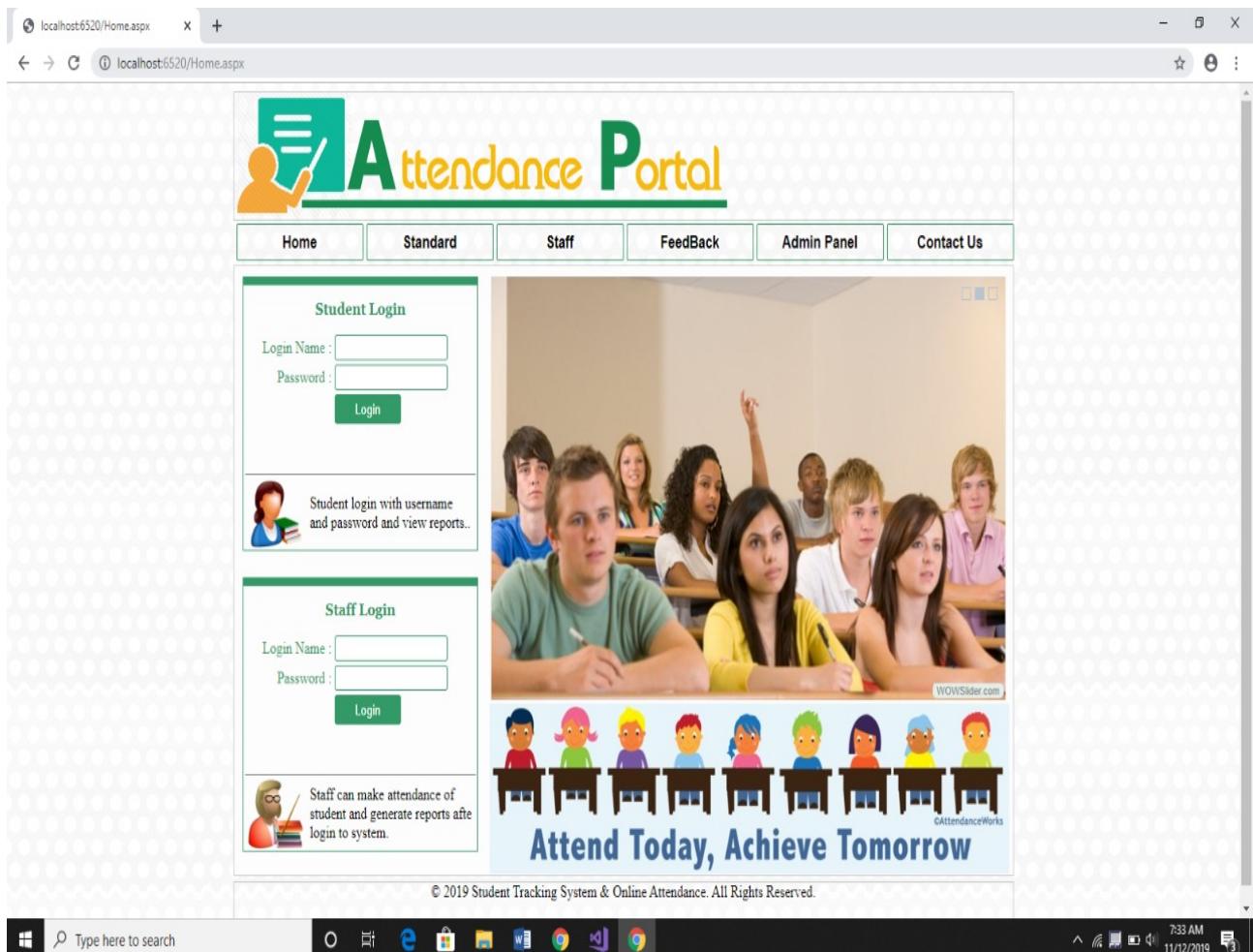


Figure 7.1: Home Page

7.0.2 Main Page

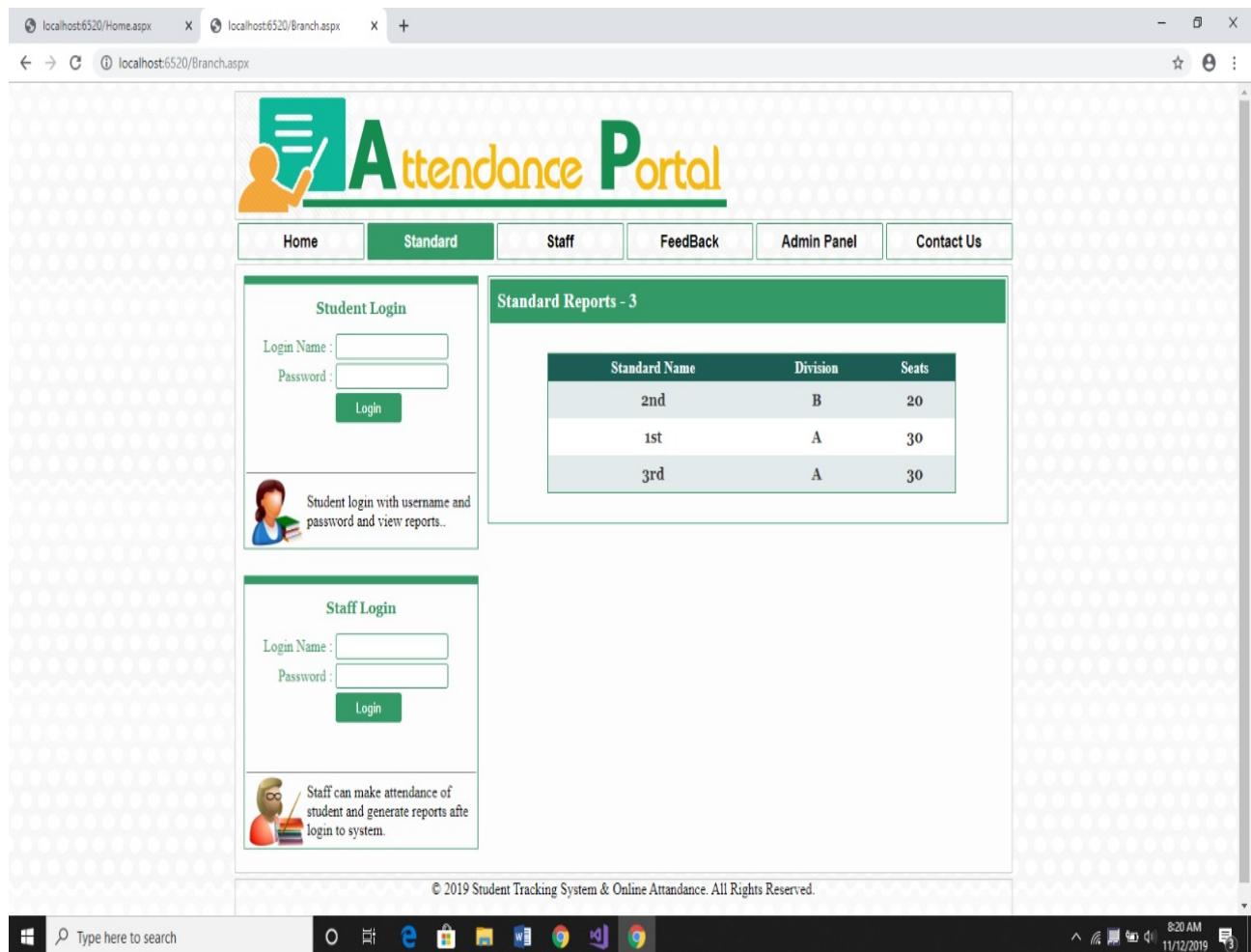


Figure 7.2: Standard Form

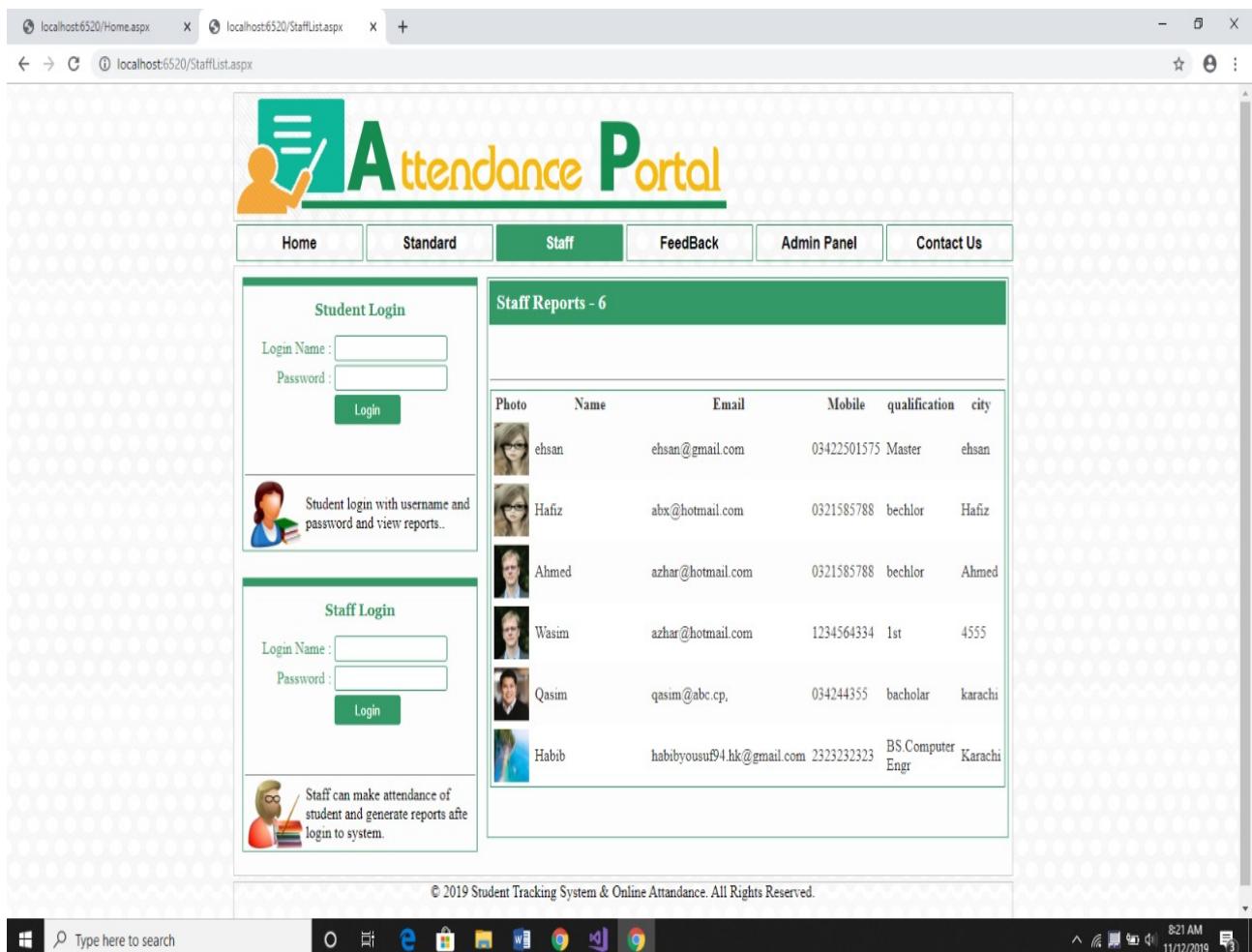


Figure 7.3: Staff Form

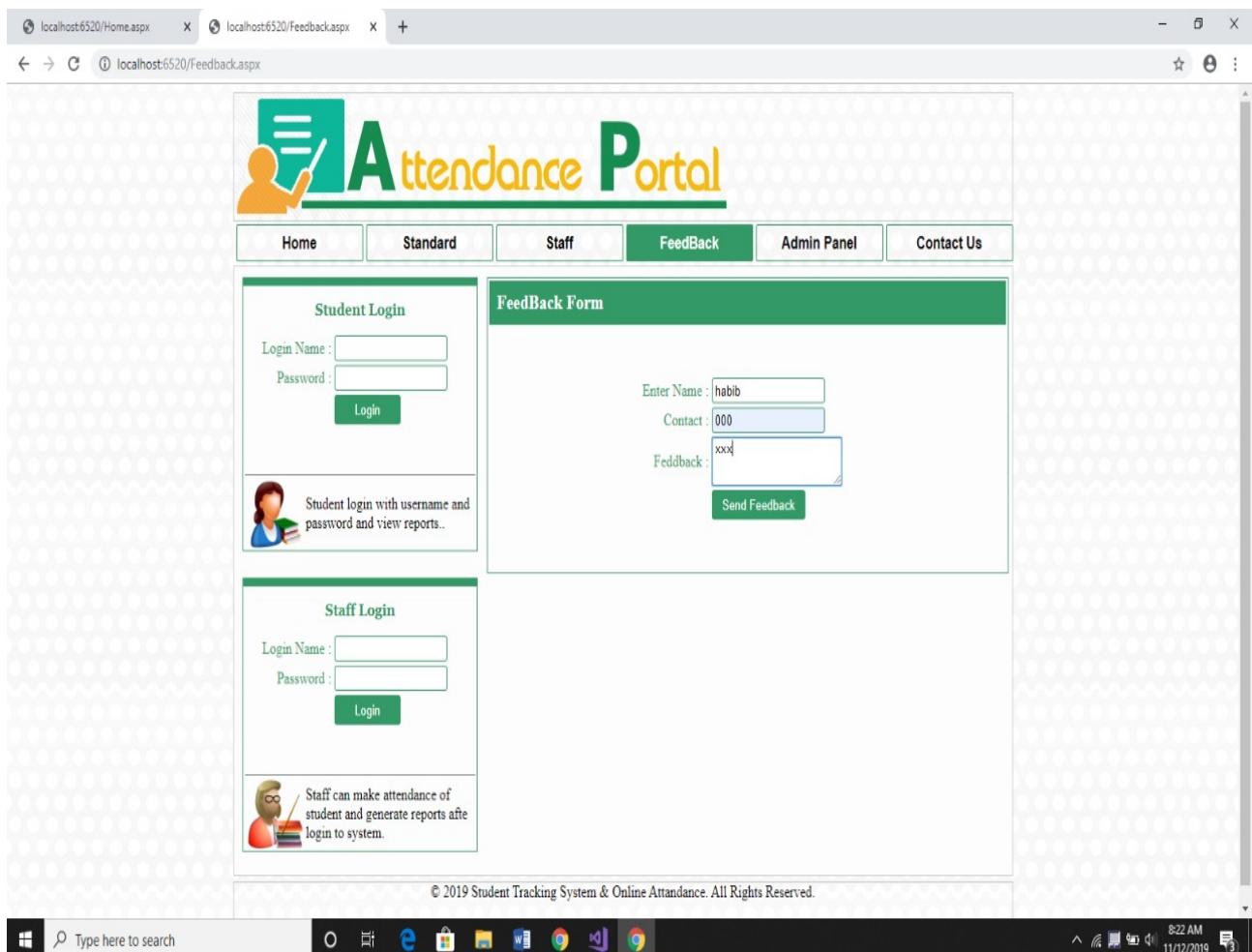


Figure 7.4: FeedBack Form

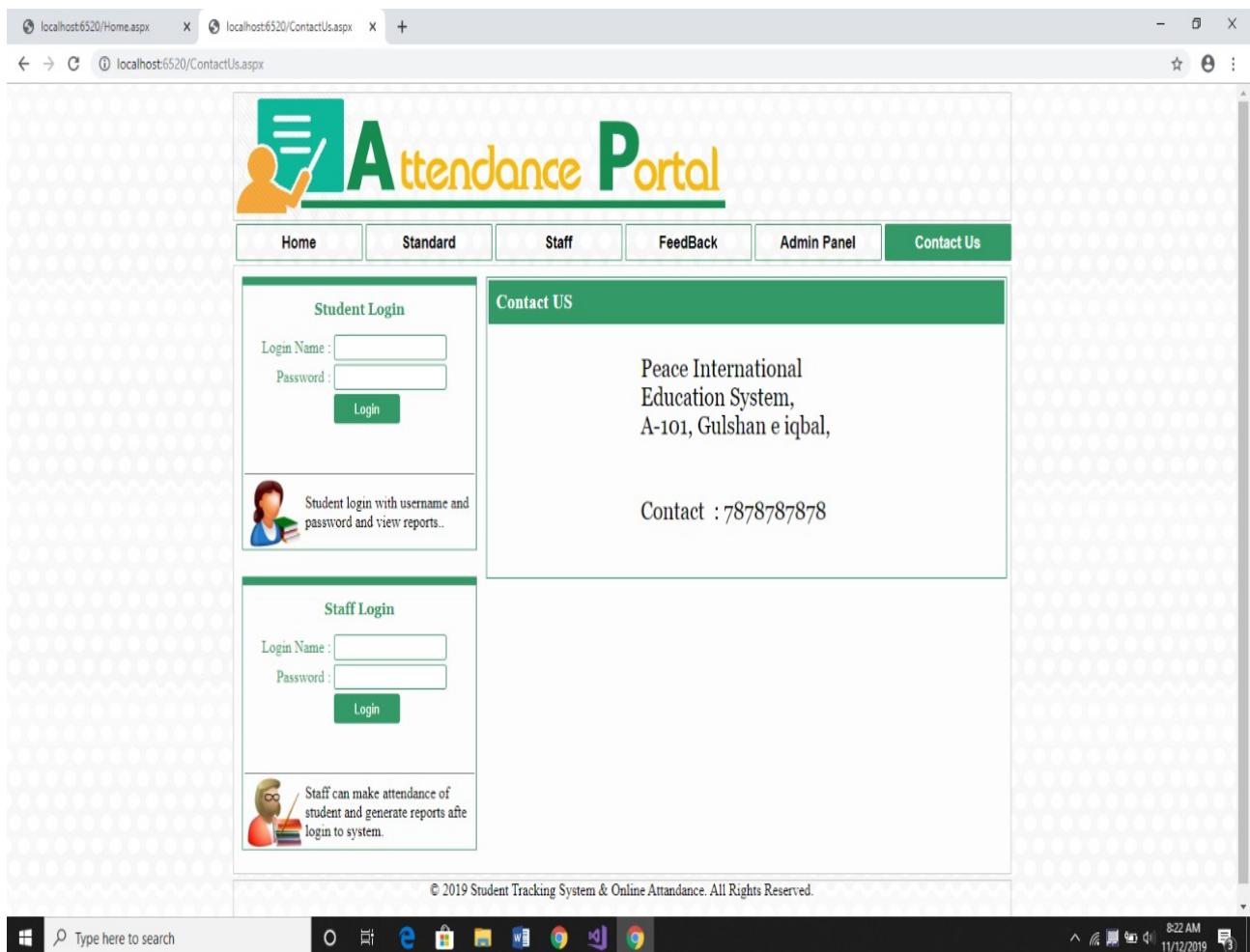


Figure 7.5: Contact Form

7.0.3 Admin Module

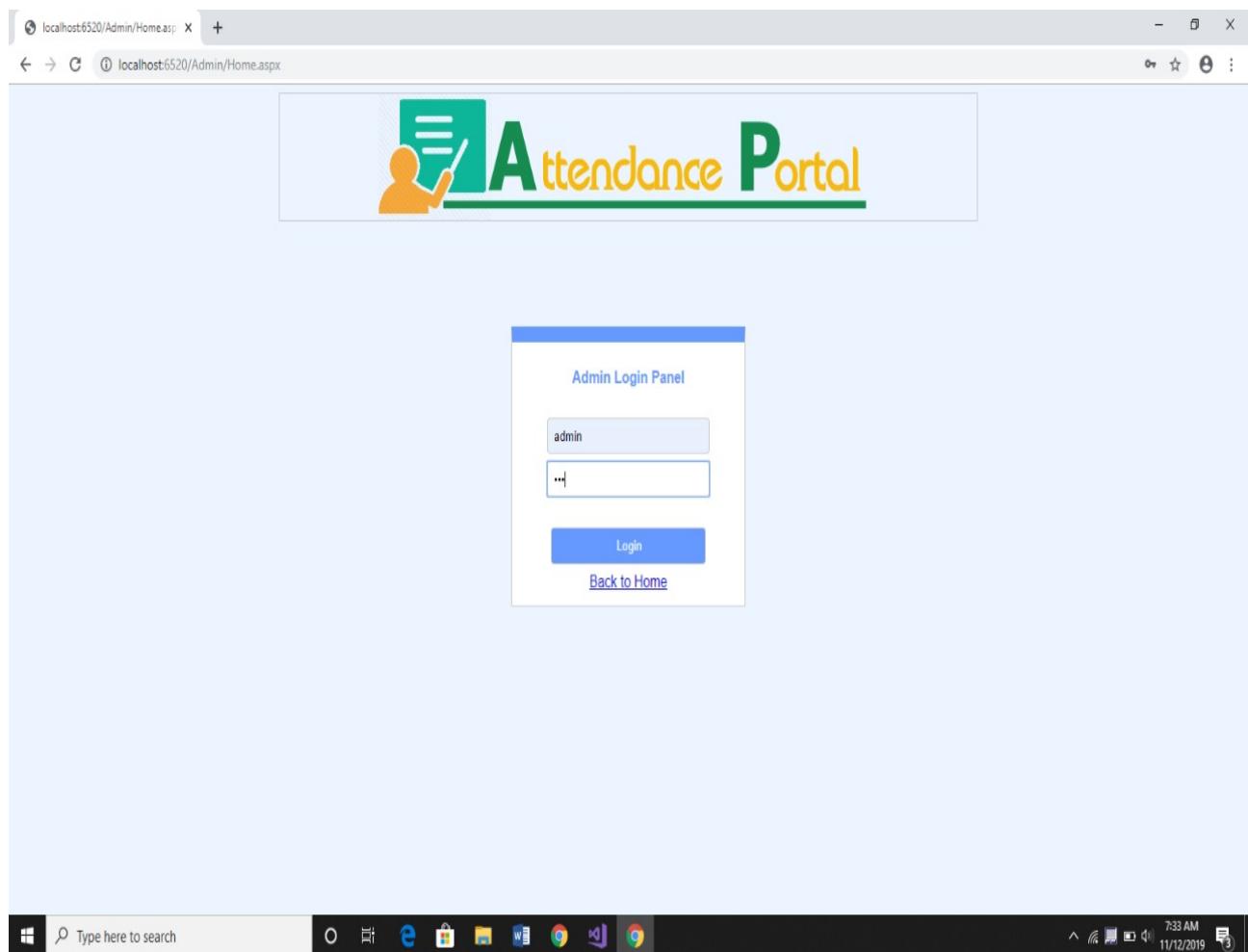


Figure 7.6: Admin Login Form

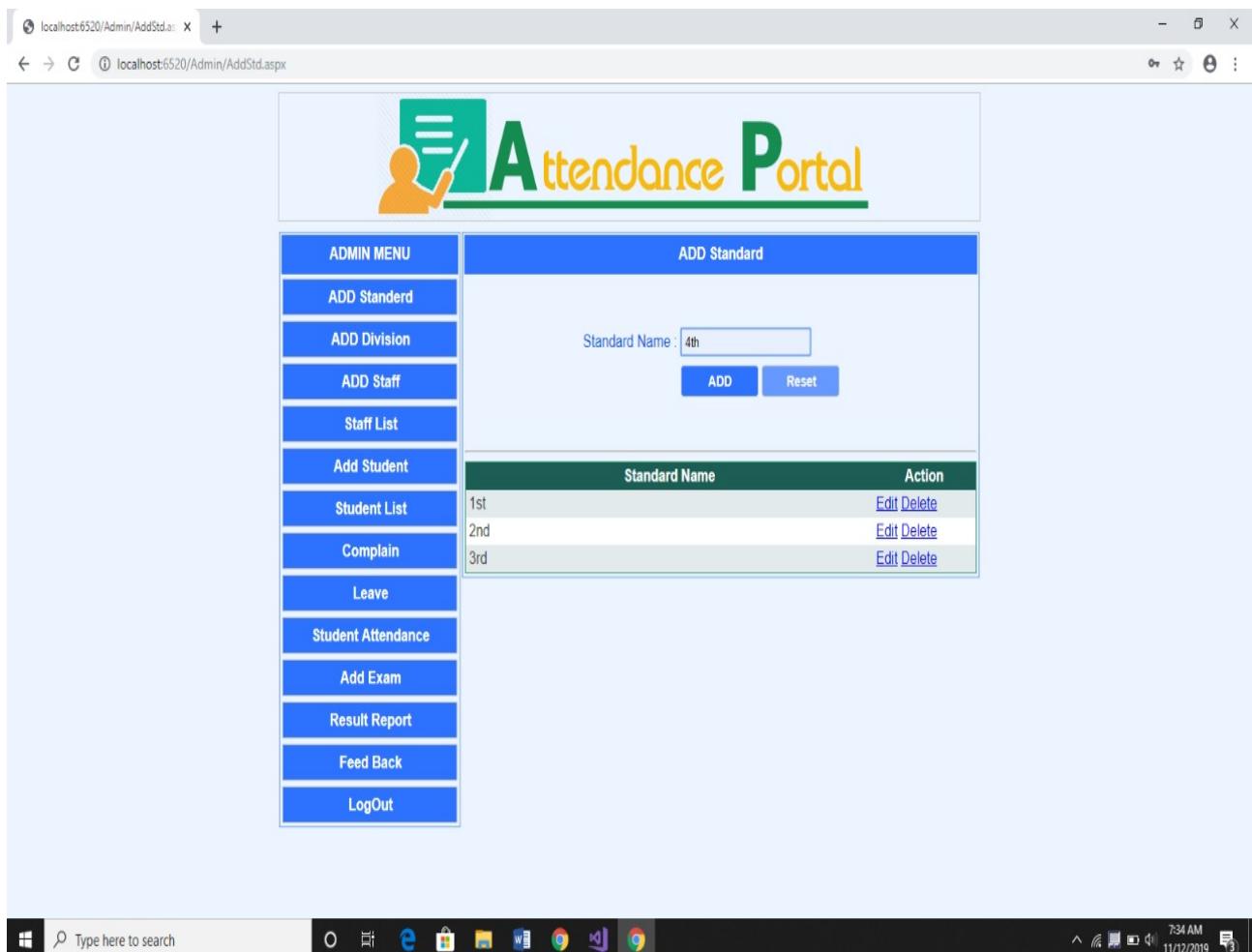


Figure 7.7: Add Standard Form

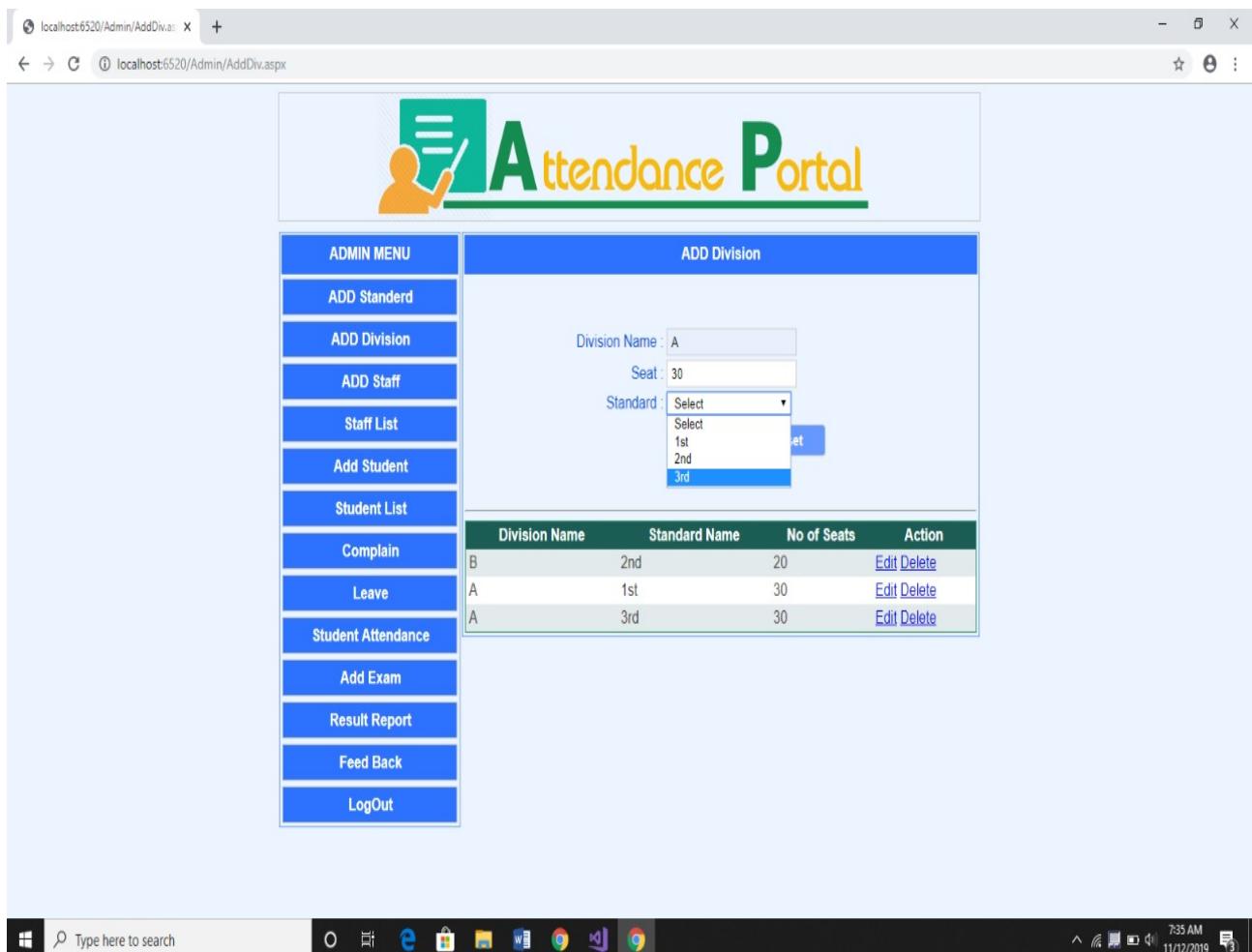


Figure 7.8: Add Division Form

The screenshot shows a web application titled "Attendance Portal" with a logo of a person writing on a board. The main content area is titled "ADD Staff". On the left, there is a vertical "ADMIN MENU" sidebar with the following items:

- ADD Standard
- ADD Division
- ADD Staff**
- Staff List
- Add Student
- Student List
- Complain
- Leave
- Student Attendance
- Add Exam
- Result Report
- Feed Back
- LogOut

The "ADD Staff" form contains the following fields:

Staff Name :	Babar
Email :	babar@hotmail.com
Mobile :	03452529842
Qualification :	BS. Software
Address :	xyz
City :	Karachi
Picode :	446
Gender :	MALE
Photo :	Choose File 1.jpg
StdName :	2nd
UserName :	Babar
Password :	...
Confi-Pass :	...

At the bottom right of the form are two buttons: "ADD" and "Reset".

The browser address bar shows "localhost:6520/Admin/AddStaff.aspx". The taskbar at the bottom includes icons for File Explorer, Edge, and other applications.

Figure 7.9: Add Staff Form

The screenshot shows a web application titled "Attendance Portal" with a logo of a person writing on a board. The interface includes a left sidebar with an "ADMIN MENU" containing links like ADD Standard, ADD Division, ADD Staff, Staff List, Add Student, Student List, Complain, Leave, Student Attendance, Add Exam, Result Report, Feed Back, and LogOut. The main content area is titled "Staff Report" and displays a table of staff information:

std id	Photo	Name	Email Id	Mobile No	User Name	Gender	Qualification	Action
		ehsan	ehsan@gmail.com	03422501575	ehsan	MALE	Master	Edit Delete
		Hafiz	abx@hotmail.com	0321585788	hafiz	MALE	bechlor	Edit Delete
		Ahmed	azhar@hotmail.com	0321585788	Ahmed	MALE	bechlor	Edit Delete
		Wasim	azhar@hotmail.com	1234564334	wasim		1st	Edit Delete
		Qasim	qasim@abc.cp.	034244355	qasim	MALE	bacholar	Edit Delete

The taskbar at the bottom shows the Windows Start button, a search bar, and various pinned icons including File Explorer, Edge, and Google Chrome. The system tray indicates the date and time as 11/12/2019 7:41 AM.

Figure 7.10: Staff List Form

The screenshot shows a web application titled "Attendance Portal" with a logo of a person writing. The main title "Attendance Portal" is in green and yellow. On the left, there is a vertical "ADMIN MENU" sidebar with blue buttons for various functions: ADD Standard, ADD Division, ADD Staff, Staff List, Add Student, Student List, Complain, Leave, Student Attendance, Add Exam, Result Report, Feed Back, and LogOut. The right side of the screen displays a form titled "ADD NEW STUDENT DATA." This form contains the following fields:

RollNo:	190007
Student Name:	Habib
Mobile:	2345
Email:	habibousuf94.hk@gmail.com
Machineld:	4
DOB:	12 ▾ 07 ▾ 1995 ▾
Address:	xyz
City:	khi
Pincode:	222
Standard:	3rd
Division:	A
Image:	Choose File 5.jpg
UserName:	habib
Password:	...
Confirm Pass:	...

At the bottom of the form are two buttons: "ADD Student" and "Reset".

The operating system taskbar at the bottom shows the Windows Start button, a search bar with "Type here to search", and several pinned icons including File Explorer, Edge, and Google Chrome. The date and time are shown as 11/12/2019 7:42 AM.

Figure 7.11: Add Student Form

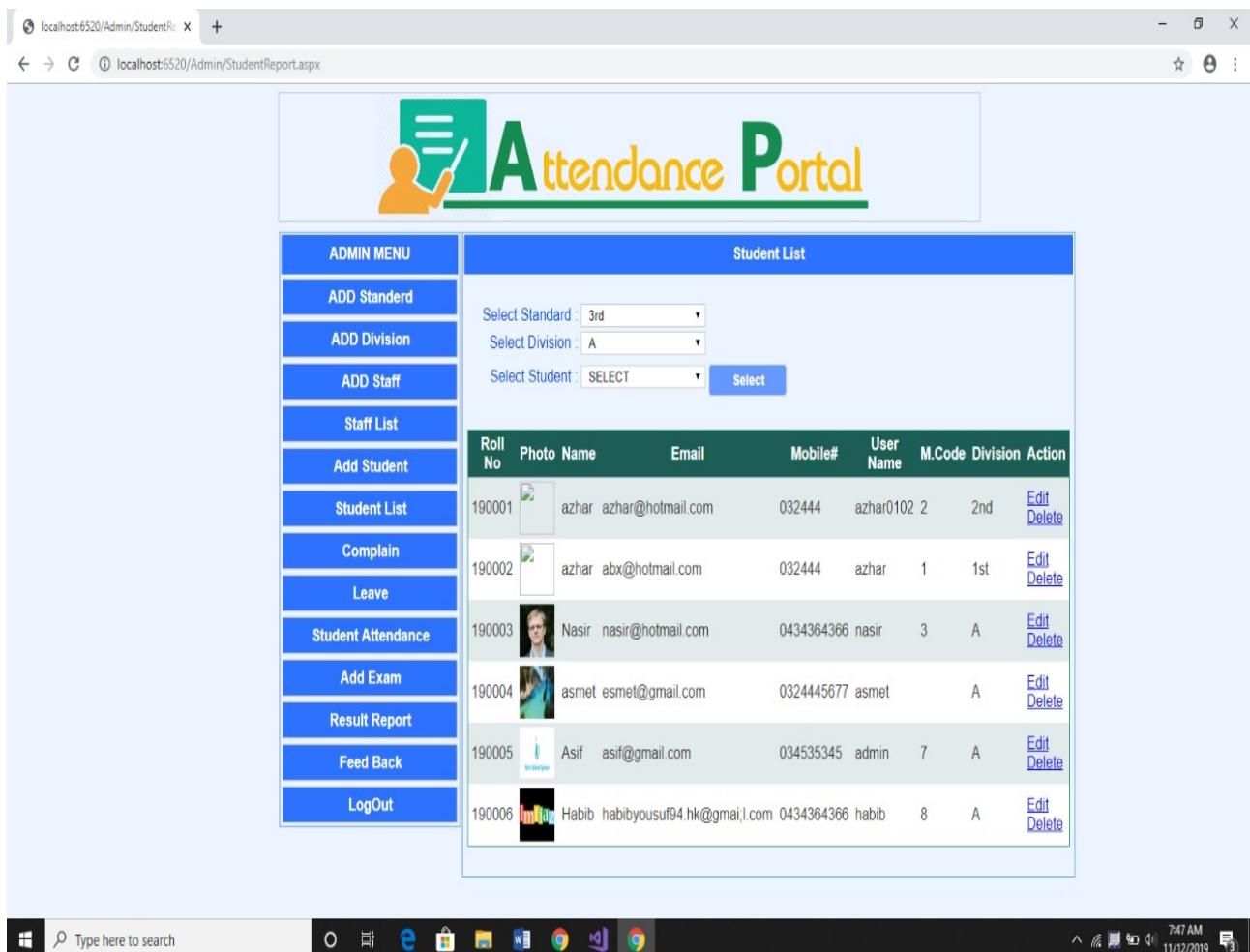


Figure 7.12: Student List Form

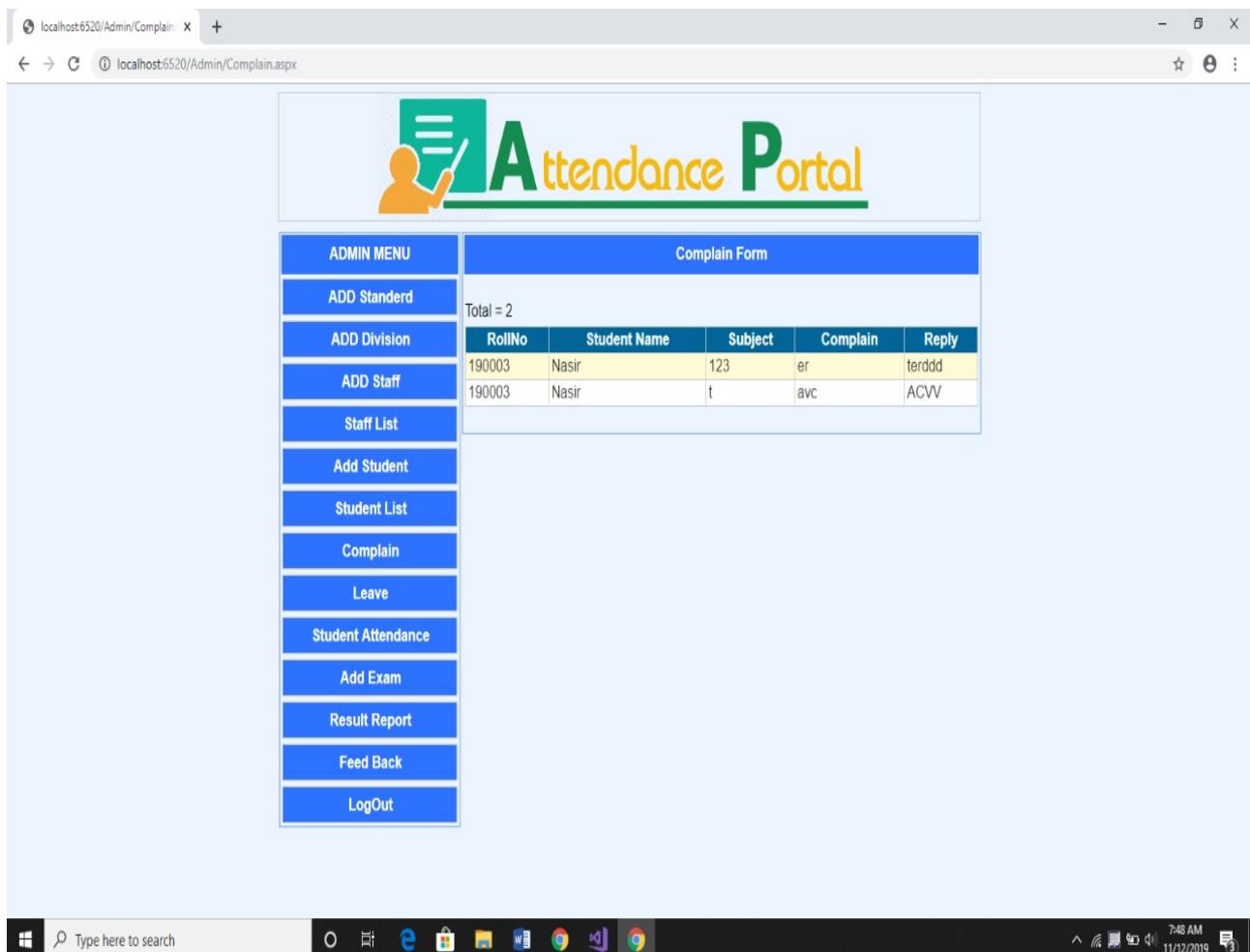


Figure 7.13: Complain Form

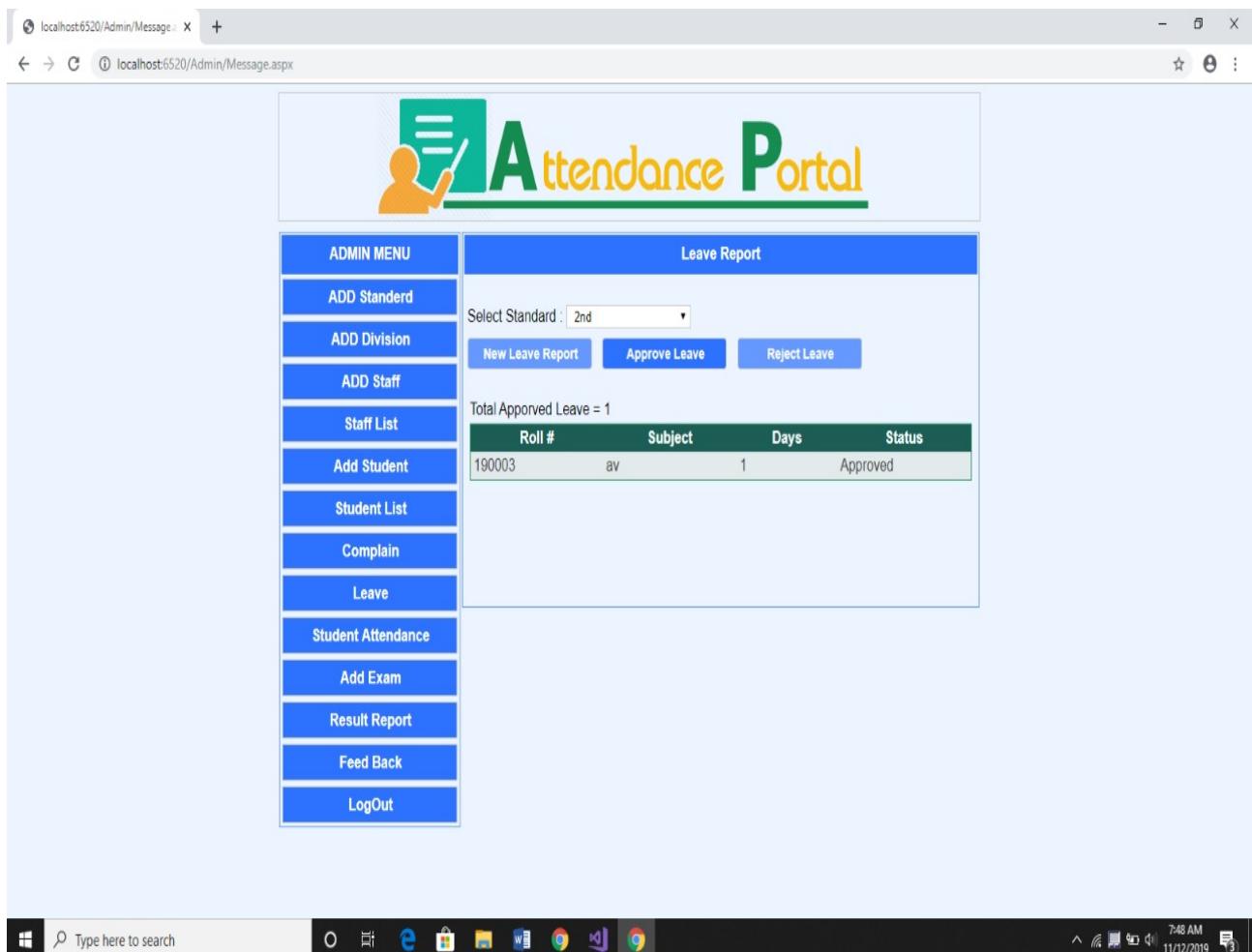


Figure 7.14: Leave Form

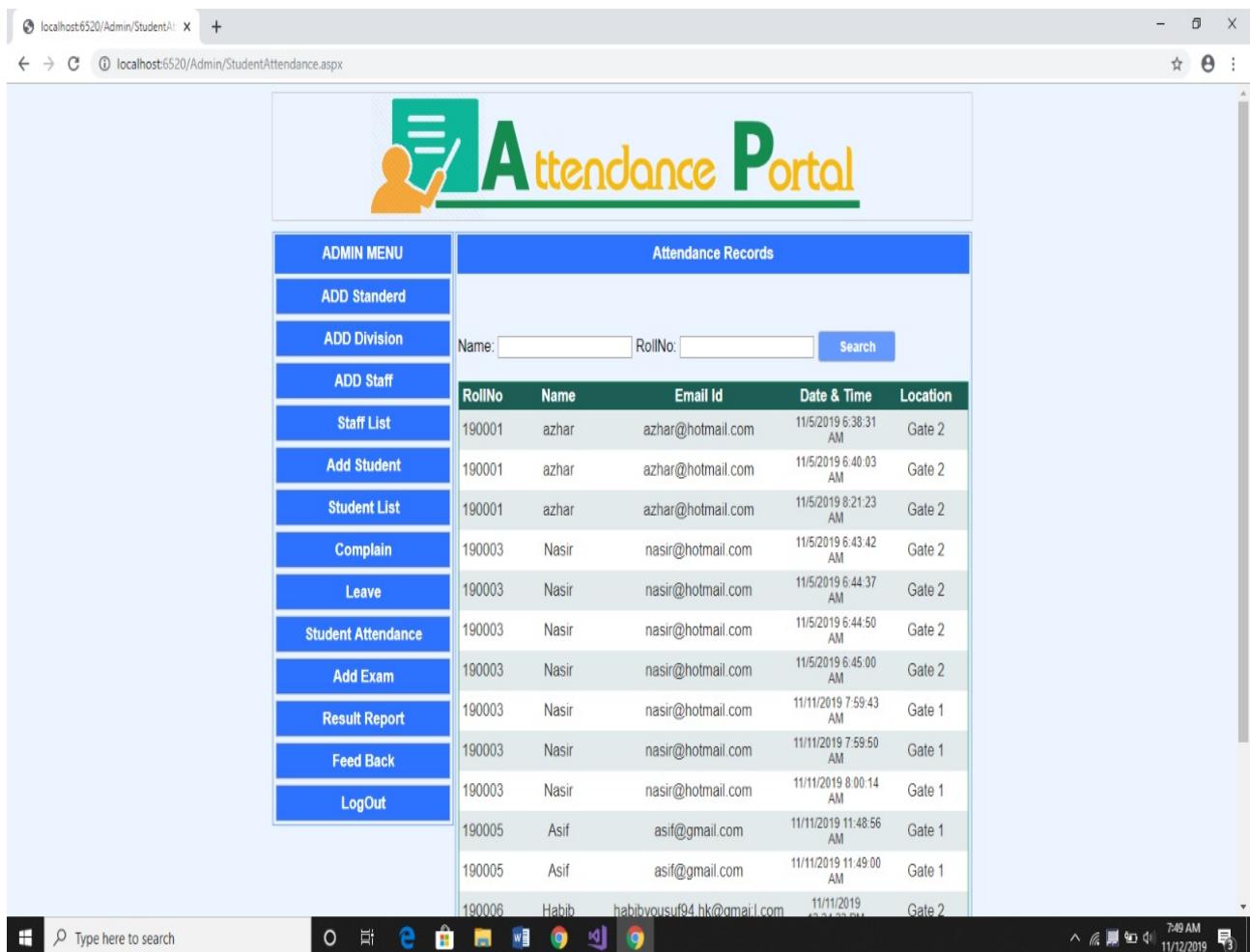


Figure 7.15: Student Attendance Record Form

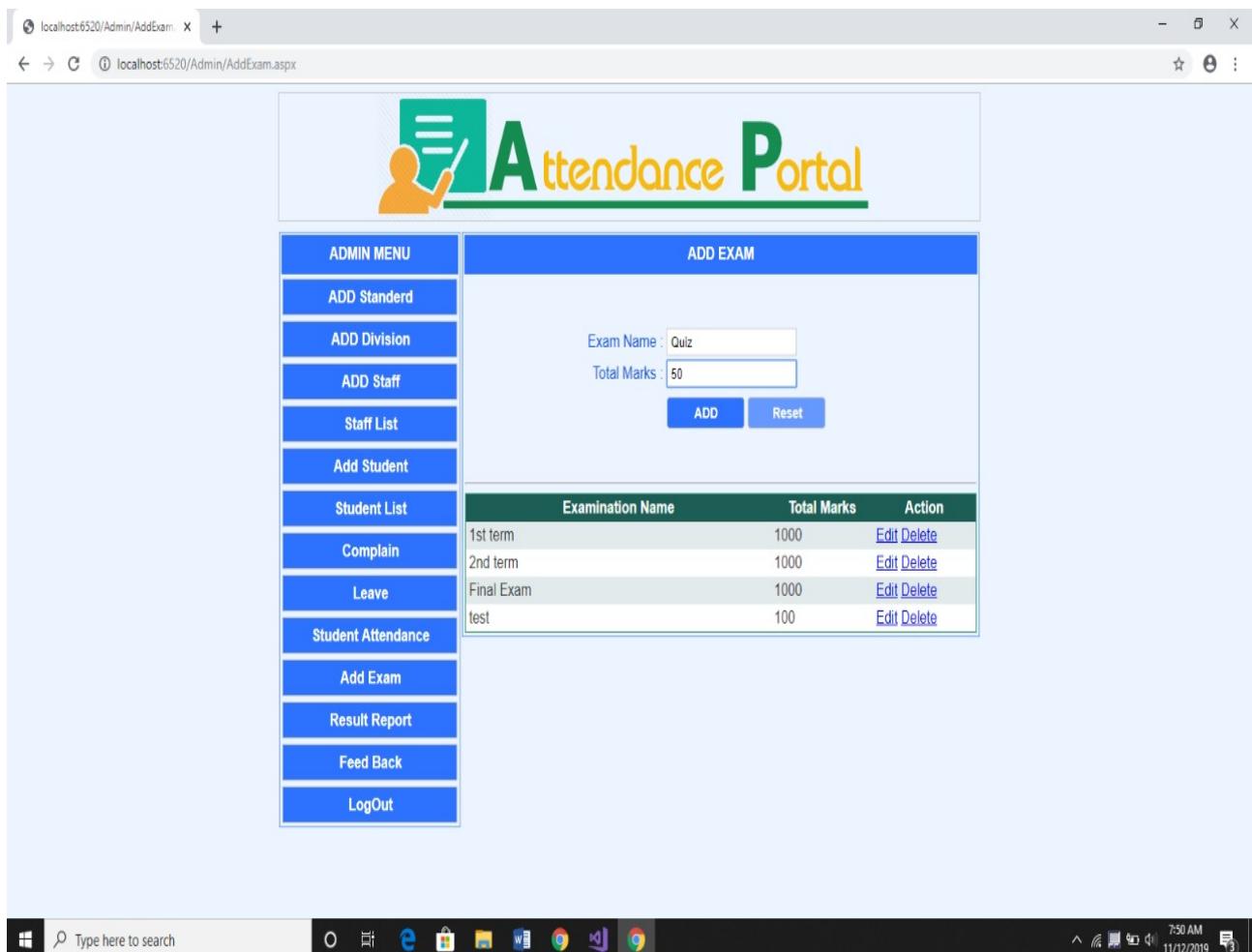
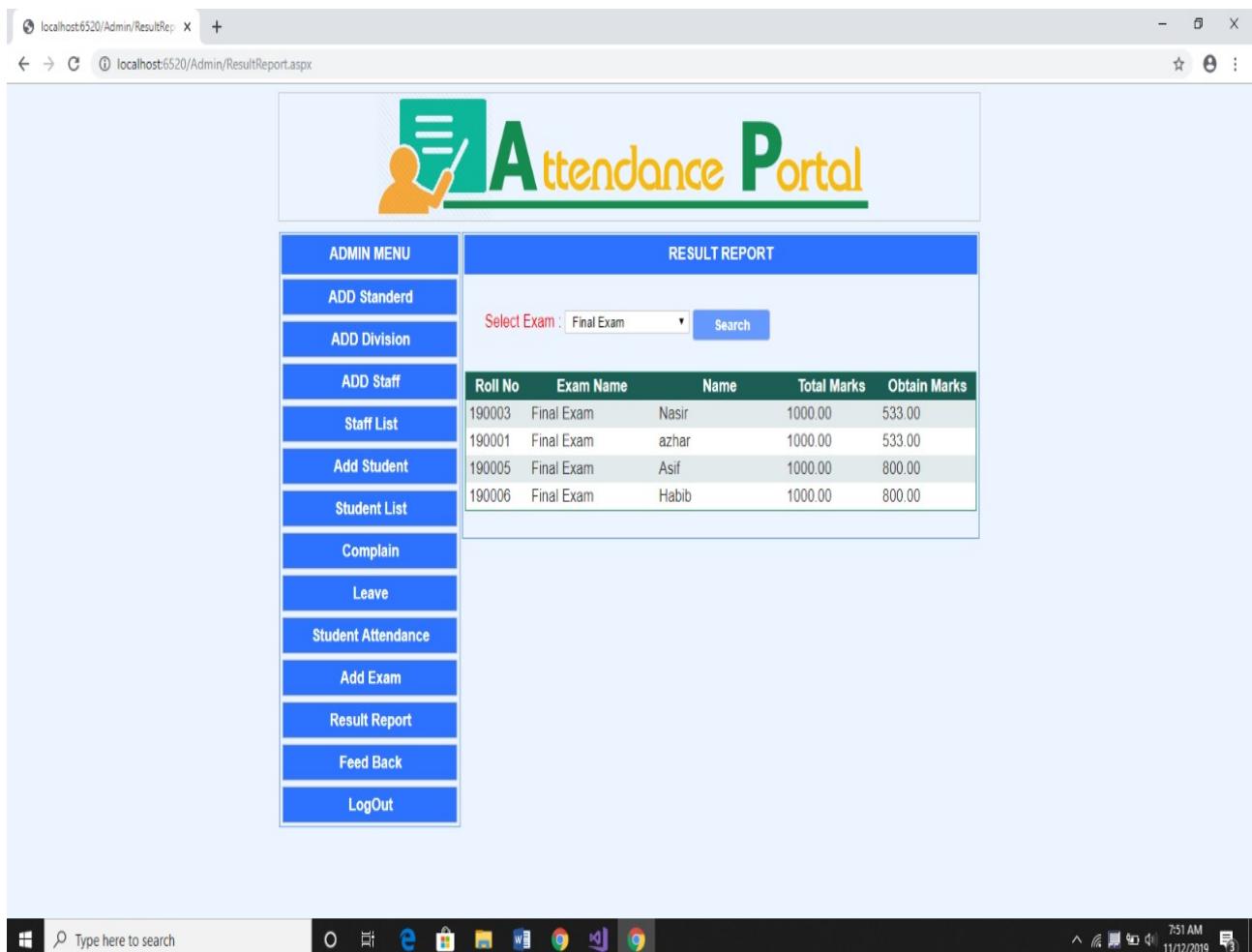


Figure 7.16: Add Exam Form



The screenshot shows a web-based application titled "Attendance Portal". The interface includes a sidebar menu on the left and a main content area on the right.

ADMIN MENU:

- ADD Standard
- ADD Division
- ADD Staff
 - Staff List
 - Add Student
 - Student List
 - Complain
 - Leave
 - Student Attendance
 - Add Exam
 - Result Report
 - Feed Back
 - LogOut

RESULT REPORT:

Select Exam : Final Exam

Roll No	Exam Name	Name	Total Marks	Obtain Marks
190003	Final Exam	Nasir	1000.00	533.00
190001	Final Exam	azhar	1000.00	533.00
190005	Final Exam	Asif	1000.00	800.00
190006	Final Exam	Habib	1000.00	800.00

Figure 7.17: Result Report Form

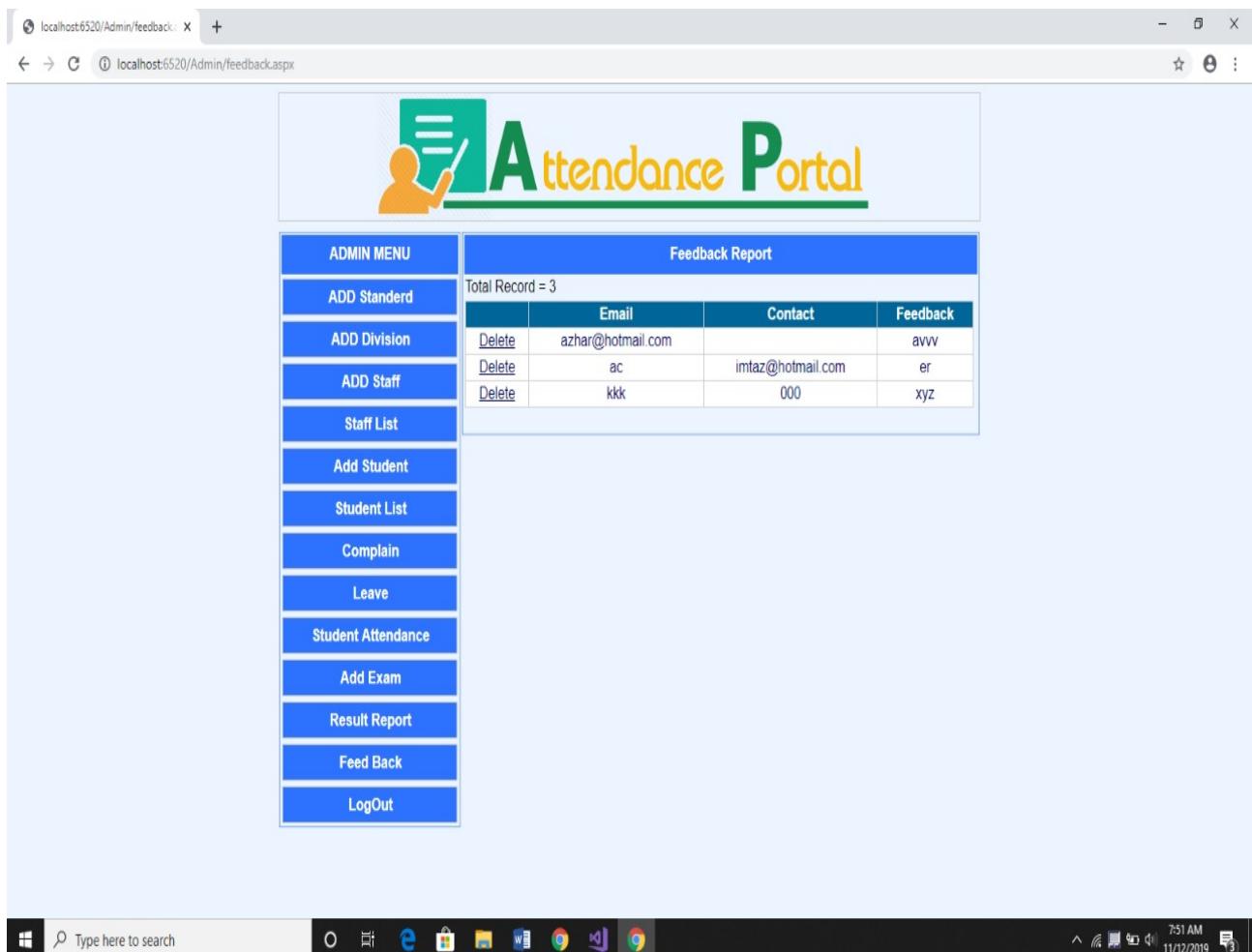


Figure 7.18: Feed Back Form

7.0.4 Staff Module

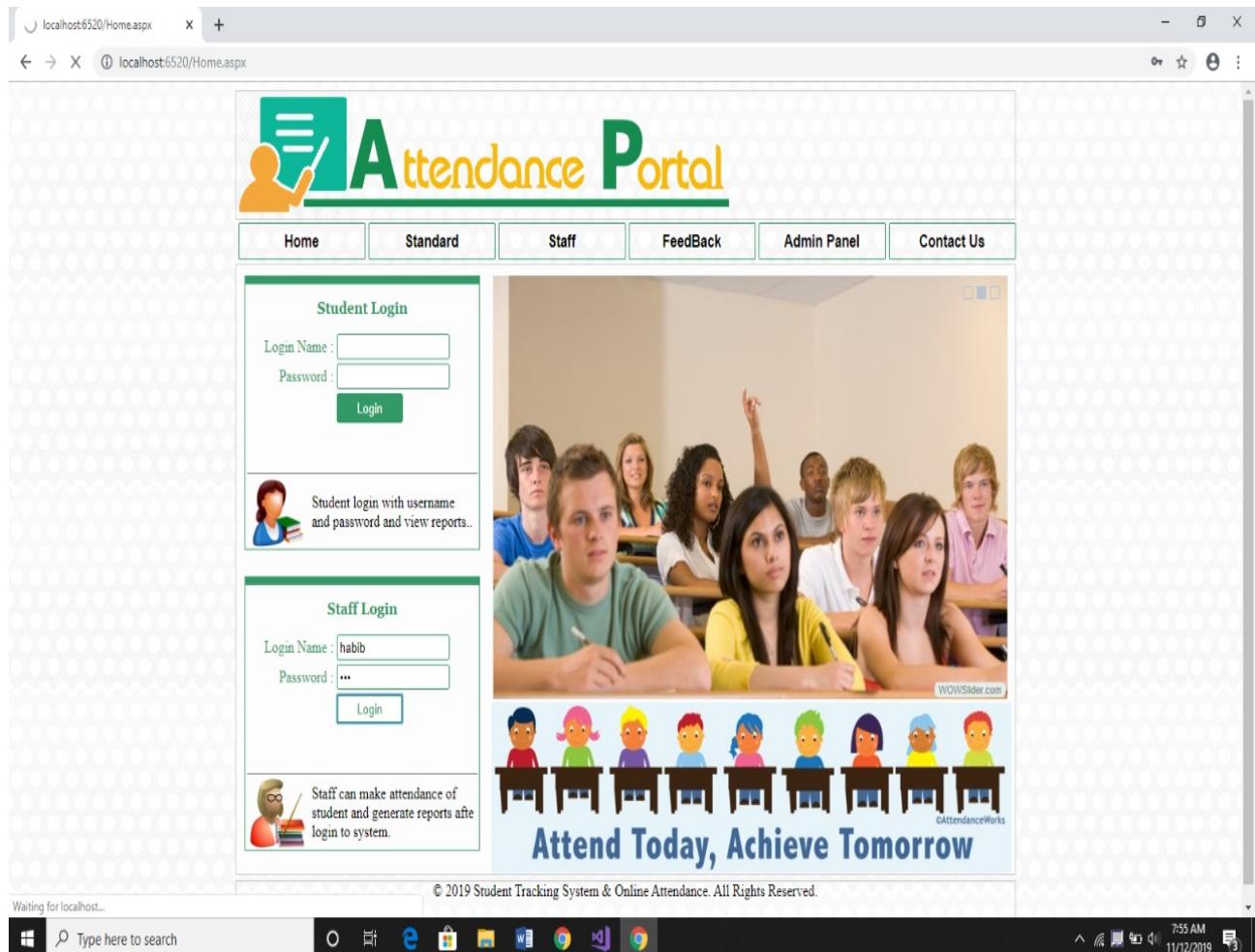


Figure 7.19: Staff Login

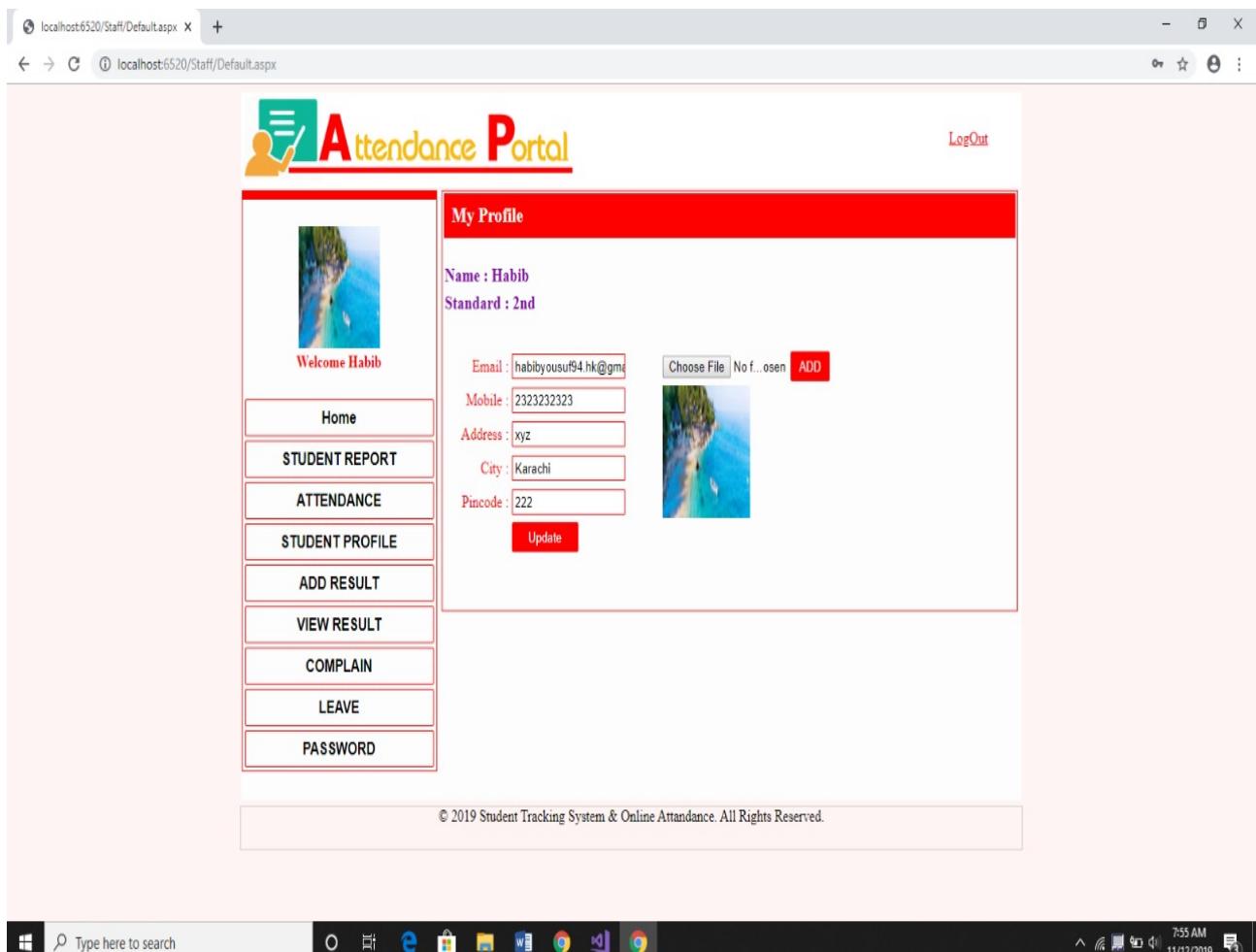


Figure 7.20: My Profile Form

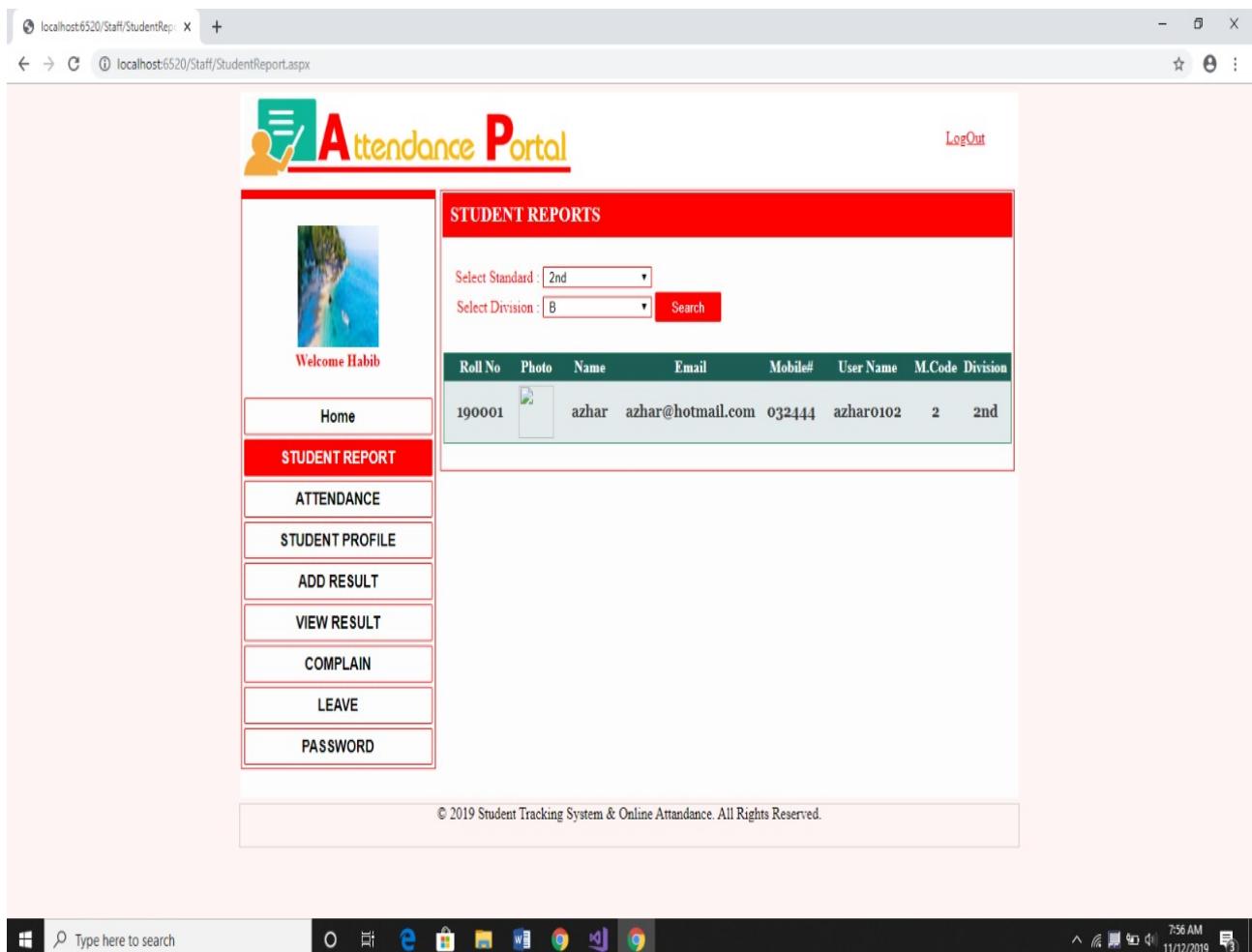


Figure 7.21: Student Report Form

The screenshot shows a web-based application titled "Attendance Portal". The header includes a logo of a person with a graduation cap, the title "Attendance Portal" in large yellow letters, and a "LogOut" link. The left sidebar has a "Welcome Habib" message and a menu with links: Home, STUDENT REPORT, ATTENDANCE (which is highlighted in red), STUDENT PROFILE, ADD RESULT, VIEW RESULT, COMPLAIN, LEAVE, and PASSWORD. The main content area is titled "My Attendance Report" and displays a table of attendance data. The table has columns: RollNo, Name, Email Id, Date, and Status. The data shows 12 entries for student azhar from November 1st to 12th, 2019. The status alternates between "Absent" and "Present". A dropdown menu for "Select Division" is shown above the table, with "B" selected. The table footer contains the copyright notice: "© 2019 Student Tracking System & Online Attendance. All Rights Reserved."

RollNo	Name	Email Id	Date	Status
190001	azhar	azhar@hotmail.com	01-11-2019	Absent
190001	azhar	azhar@hotmail.com	02-11-2019	Absent
190001	azhar	azhar@hotmail.com	03-11-2019	Holiday
190001	azhar	azhar@hotmail.com	04-11-2019	Absent
190001	azhar	azhar@hotmail.com	05-11-2019	Present
190001	azhar	azhar@hotmail.com	06-11-2019	Absent
190001	azhar	azhar@hotmail.com	07-11-2019	Absent
190001	azhar	azhar@hotmail.com	08-11-2019	Absent
190001	azhar	azhar@hotmail.com	09-11-2019	Absent
190001	azhar	azhar@hotmail.com	10-11-2019	Holiday
190001	azhar	azhar@hotmail.com	11-11-2019	Absent
190001	azhar	azhar@hotmail.com	12-11-2019	Absent

Figure 7.22: Attendance Form

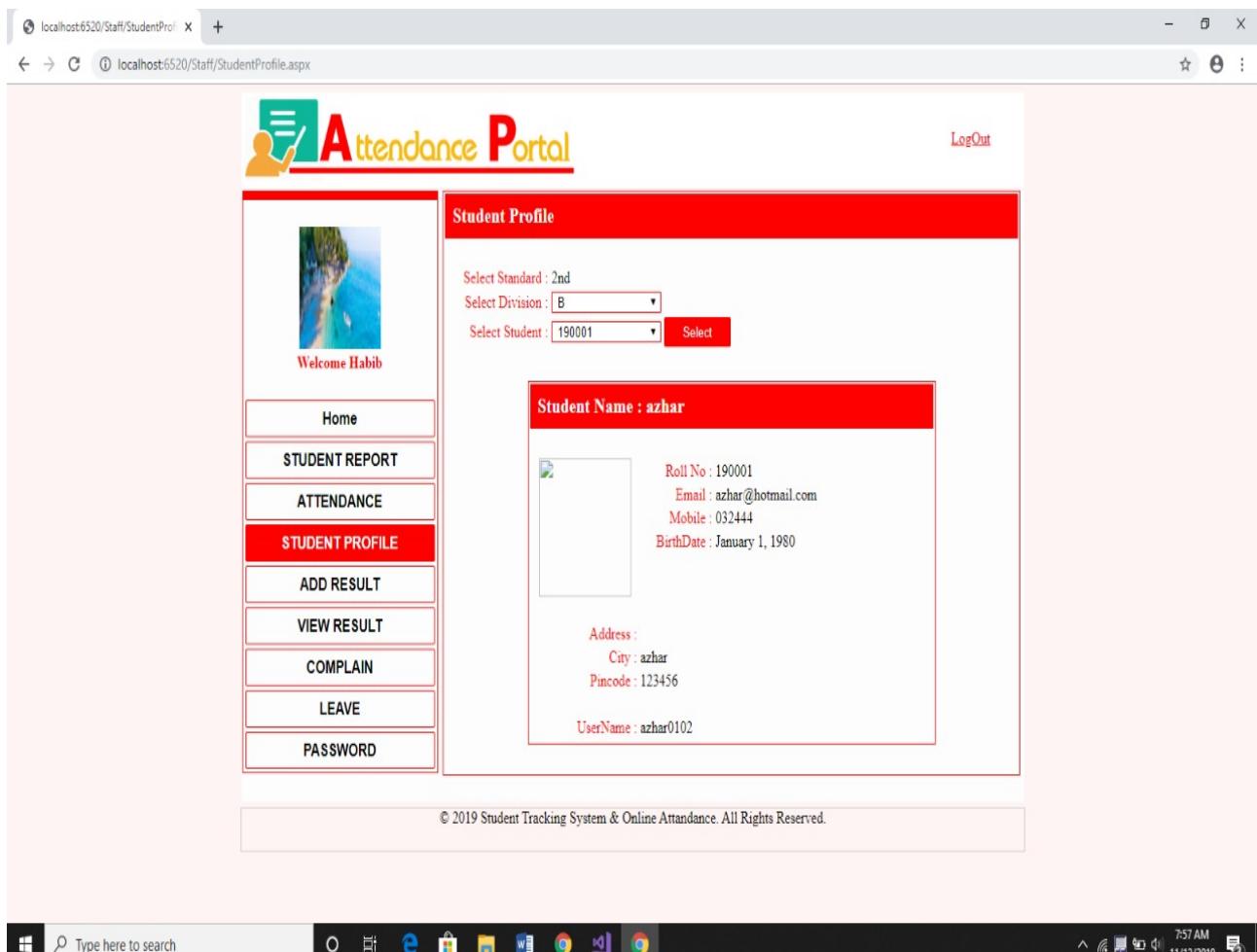


Figure 7.23: Students Profile Form

The screenshot shows a web application titled "Attendance Portal" running on a local host at port 6520. The main menu on the left includes options like Home, STUDENT REPORT, ATTENDANCE, STUDENT PROFILE, ADD RESULT, VIEW RESULT, COMPLAIN, LEAVE, and PASSWORD. The current page is the "ADD RESULT" form, which has a red header. It contains fields for Standard (set to 2nd), Select Division (dropdown set to SELECT), Student (dropdown set to SELECT), Exam (dropdown set to SELECT), Total Marks (text input), Obtain Marks (text input), and two buttons (ADD and Reset). A success message "Record Added Successfully" is displayed below the form. The bottom of the screen shows a Windows taskbar with the date and time (11/12/2019, 8:00 AM).

Figure 7.24: Add Result Form

The screenshot shows a web browser window for the 'Attendance Portal' at localhost:6520/Staff/ViewResult.aspx. The interface includes a sidebar with navigation links like Home, STUDENT REPORT, ATTENDANCE, STUDENT PROFILE, ADD RESULT, VIEW RESULT, COMPLAIN, LEAVE, and PASSWORD. The main content area displays a 'STUDENT RESULT' table with three rows of data. A context menu is open on the right side of the screen, showing options like 'Restore pages?' and 'Help make Google Chrome better by sending crash reports and usage statistics to Google'. The taskbar at the bottom shows various application icons.

Roll No	Exam Name	Name	Total Marks	Obtain Marks	Action
190001	Final Exam	azhar	1000.00	533.00	Edit Delete
190001	Final Exam	azhar	1000.00	850.00	Edit Delete
190001	Final Exam	azhar	1000.00	850.00	Edit Delete

Figure 7.25: View Result Form

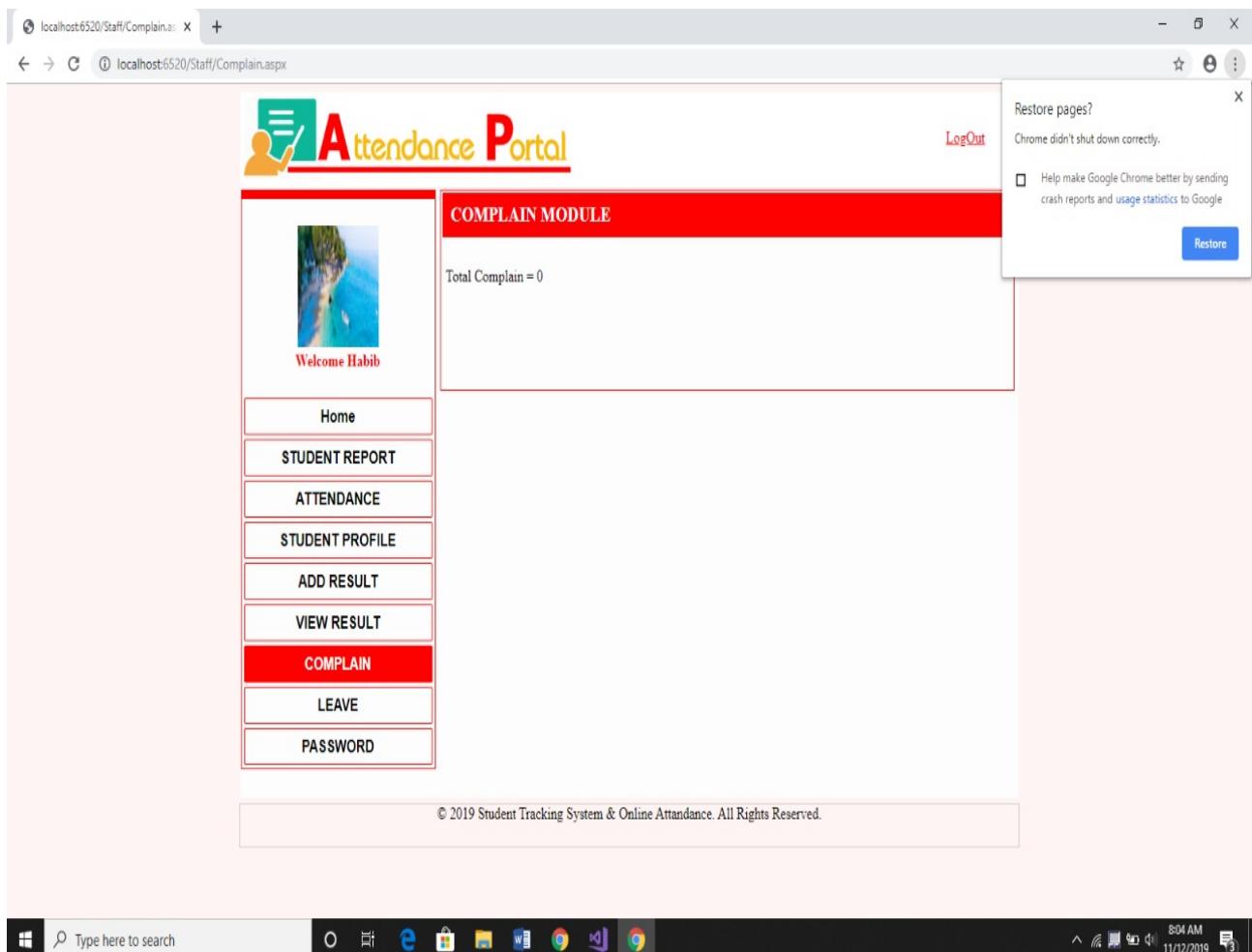


Figure 7.26: Complain Form

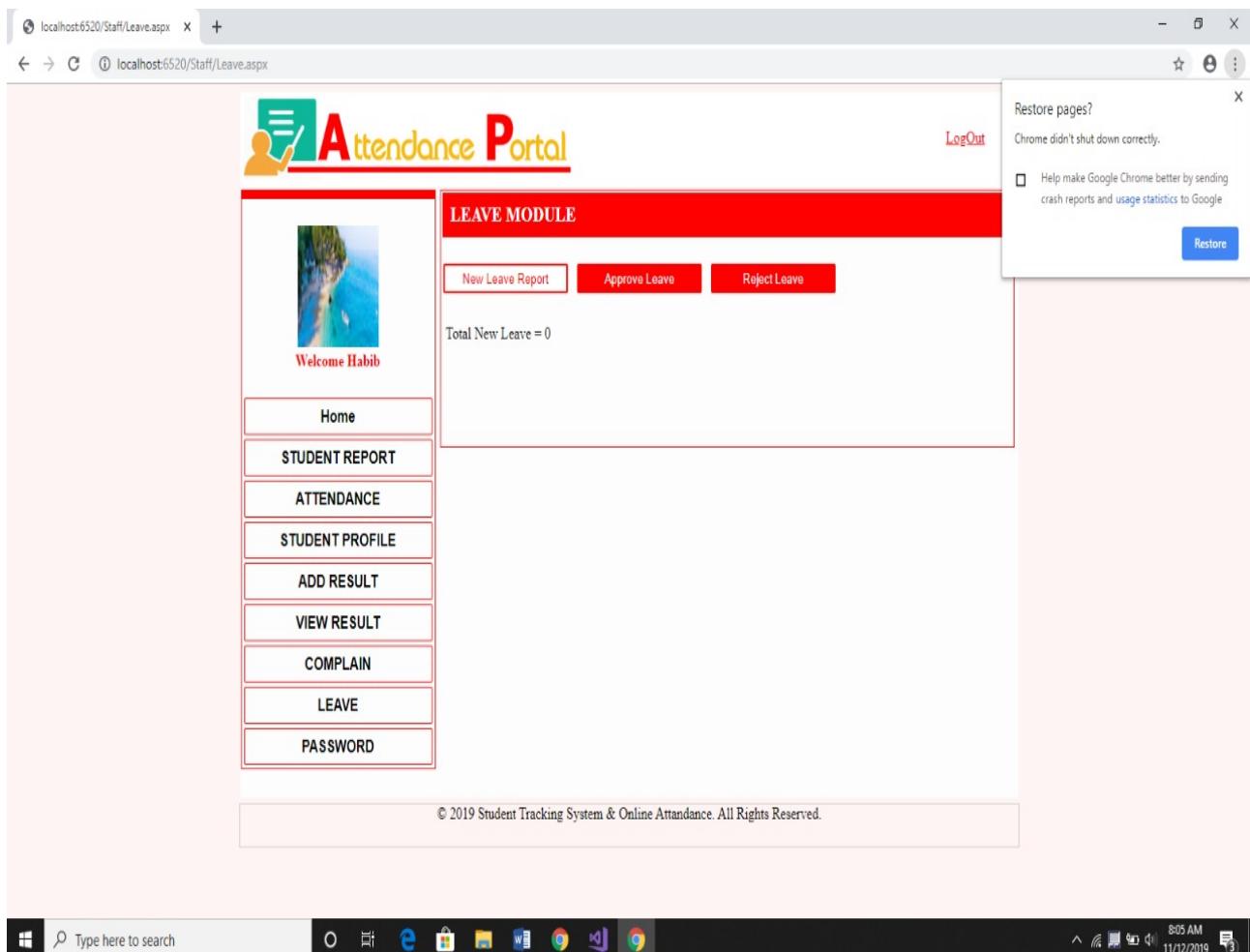


Figure 7.27: Leave Form

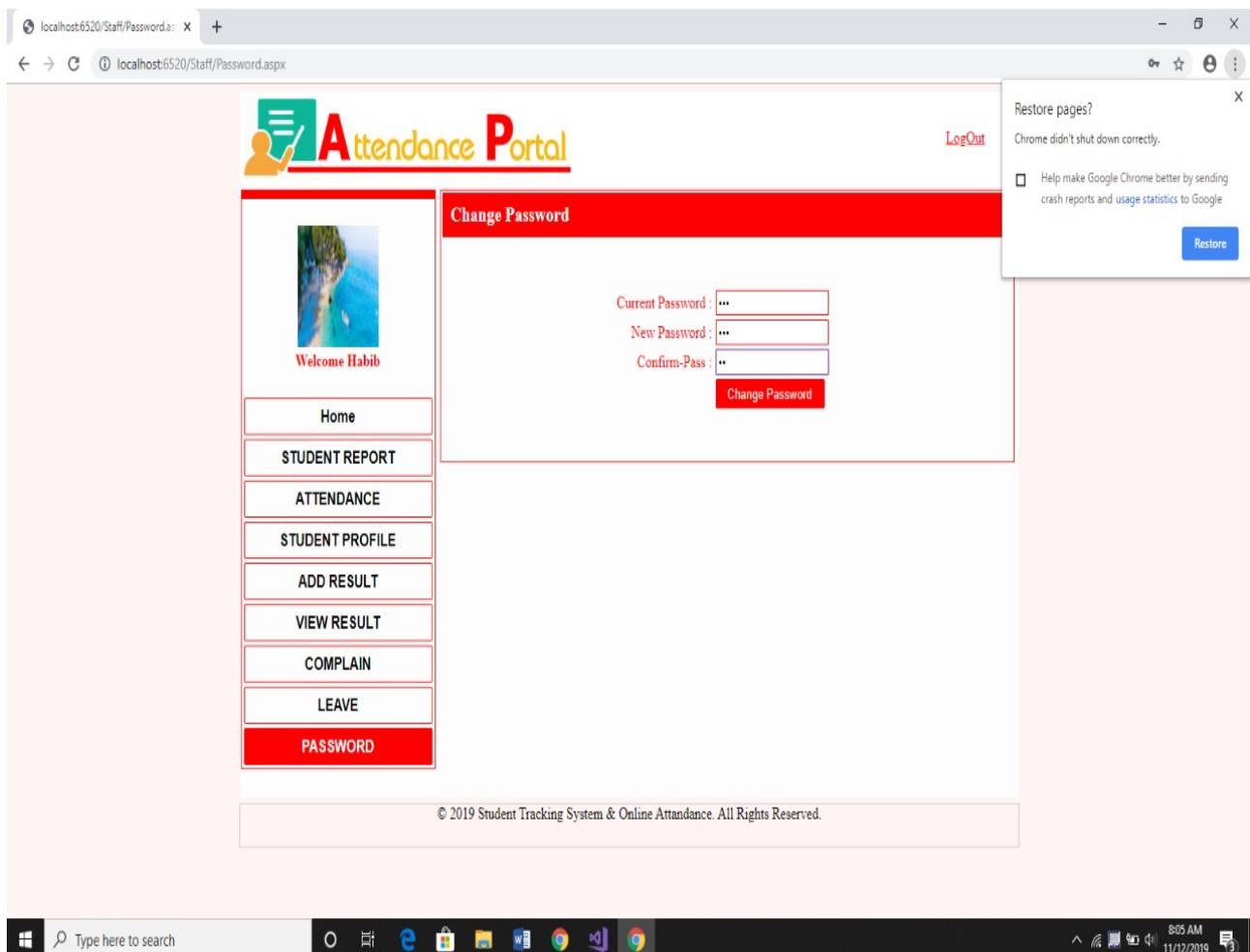


Figure 7.28: Change Password Form

7.0.5 Student Module

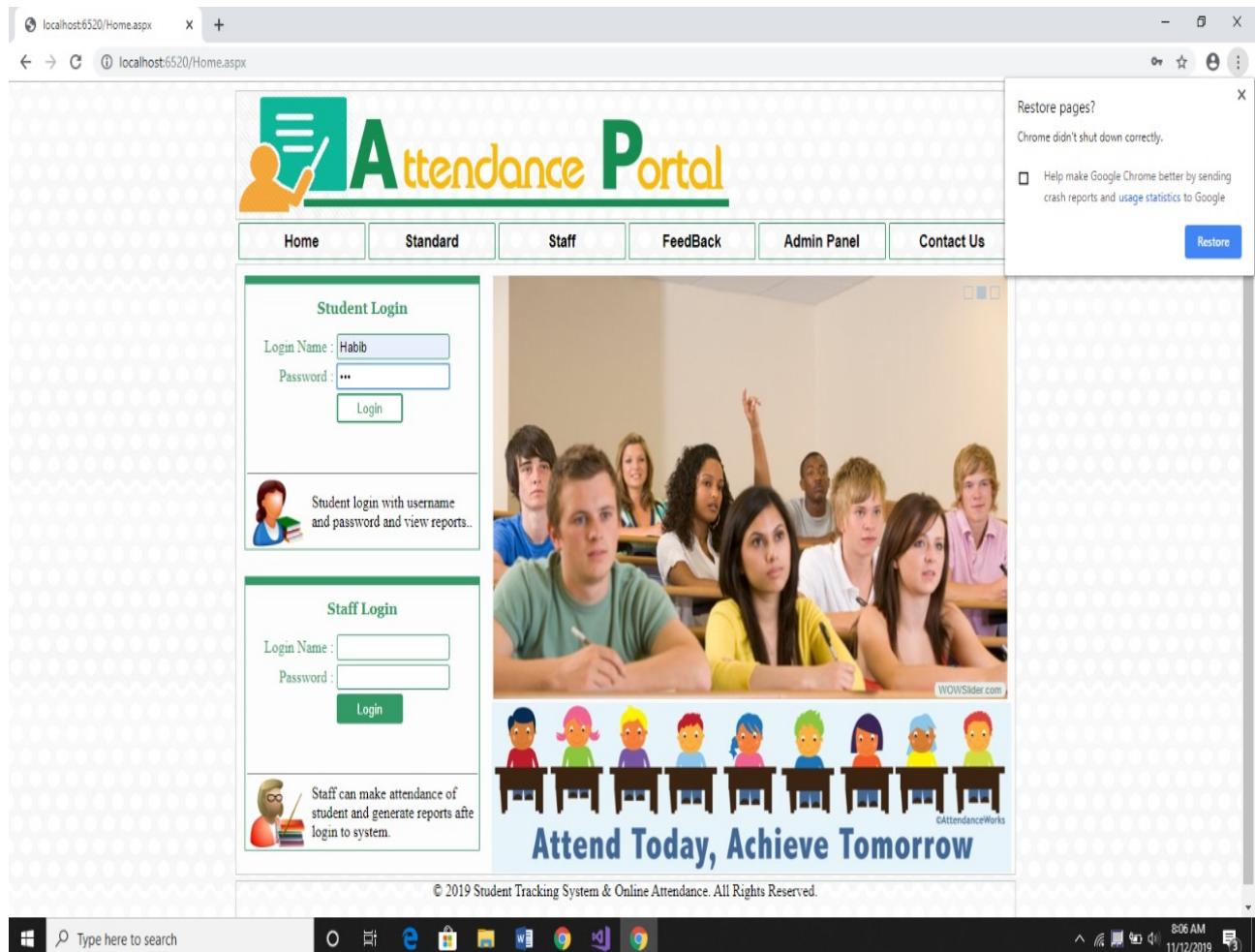


Figure 7.29: Student login Form

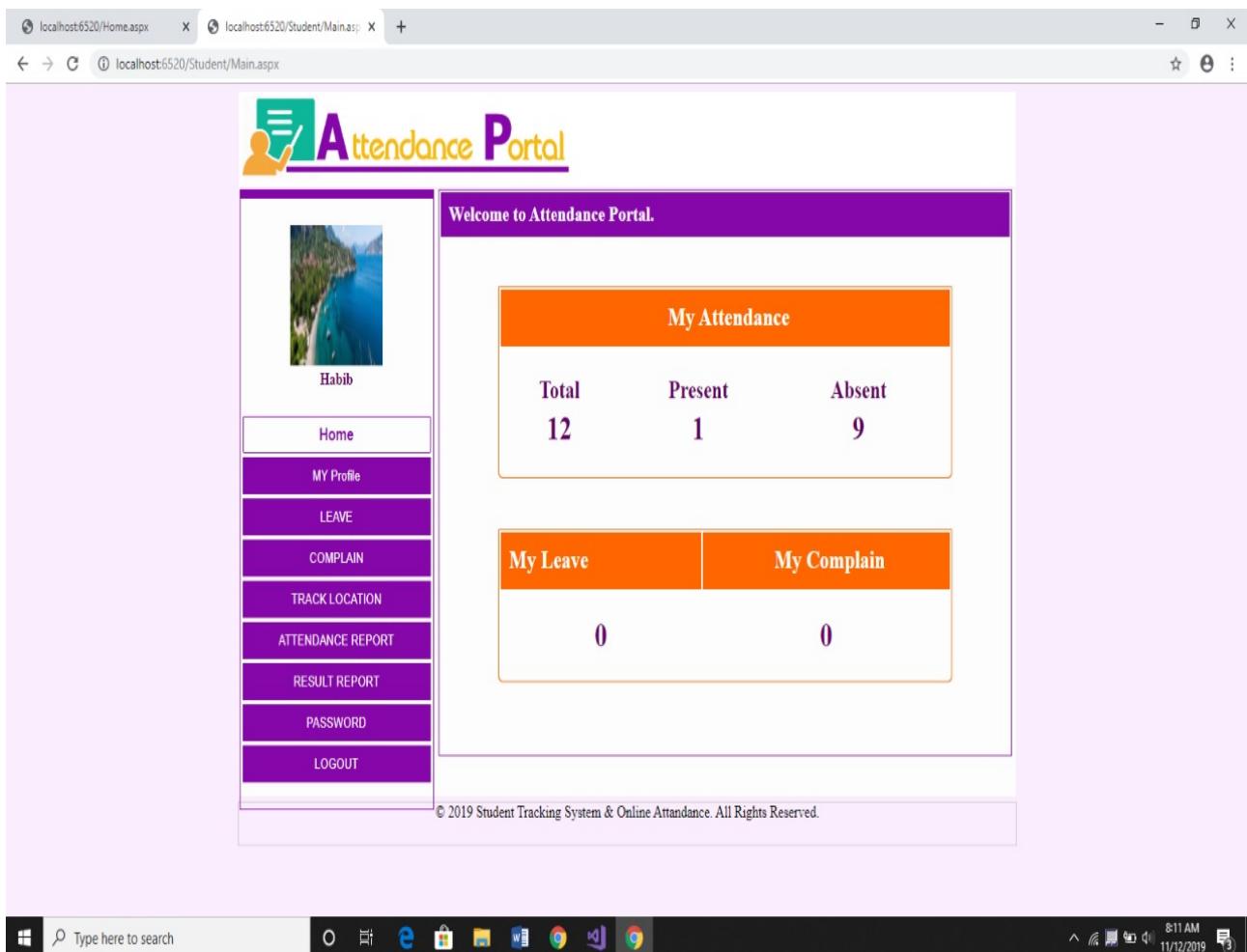


Figure 7.30: Attendance View Form

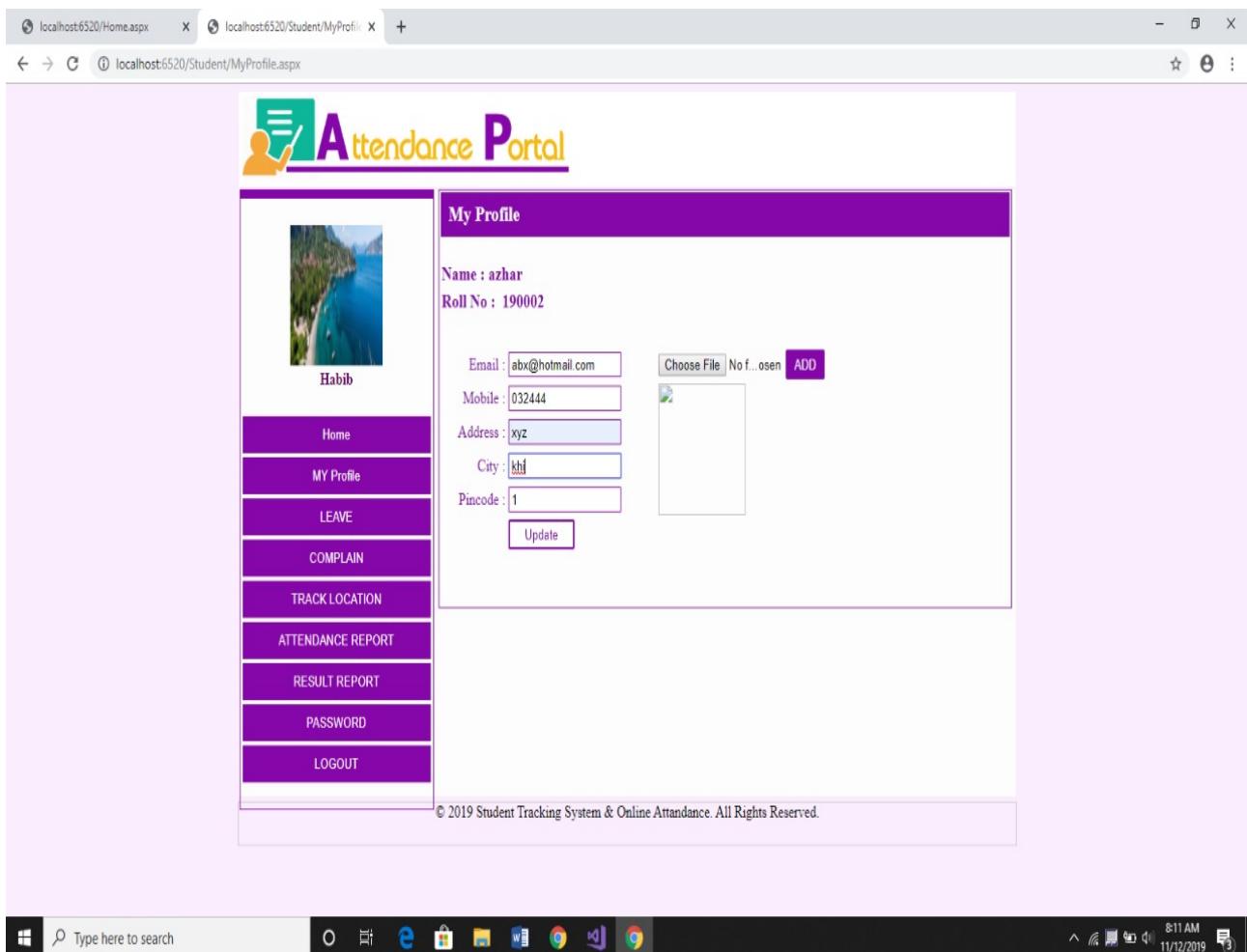


Figure 7.31: My Profile Form

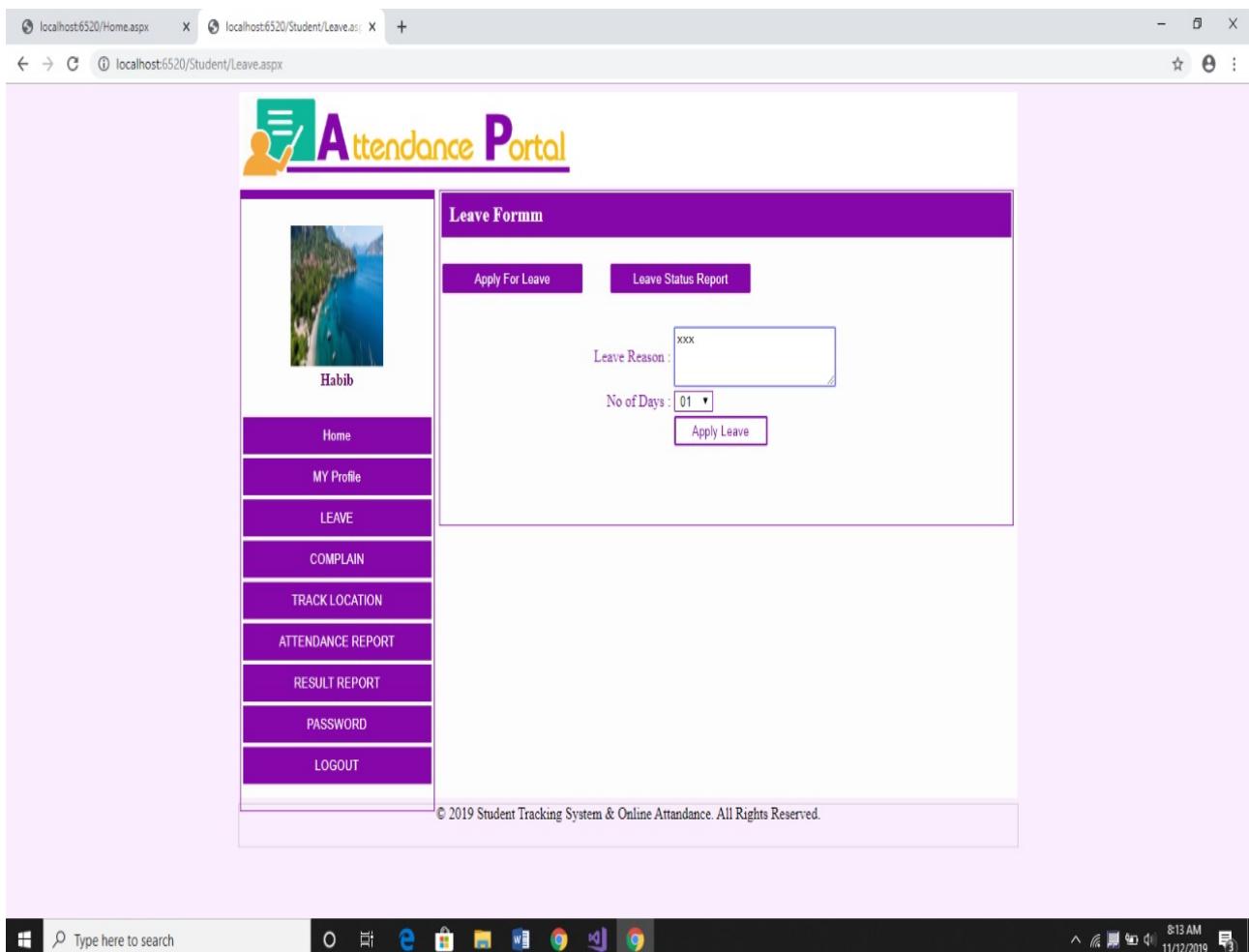


Figure 7.32: Leave Form

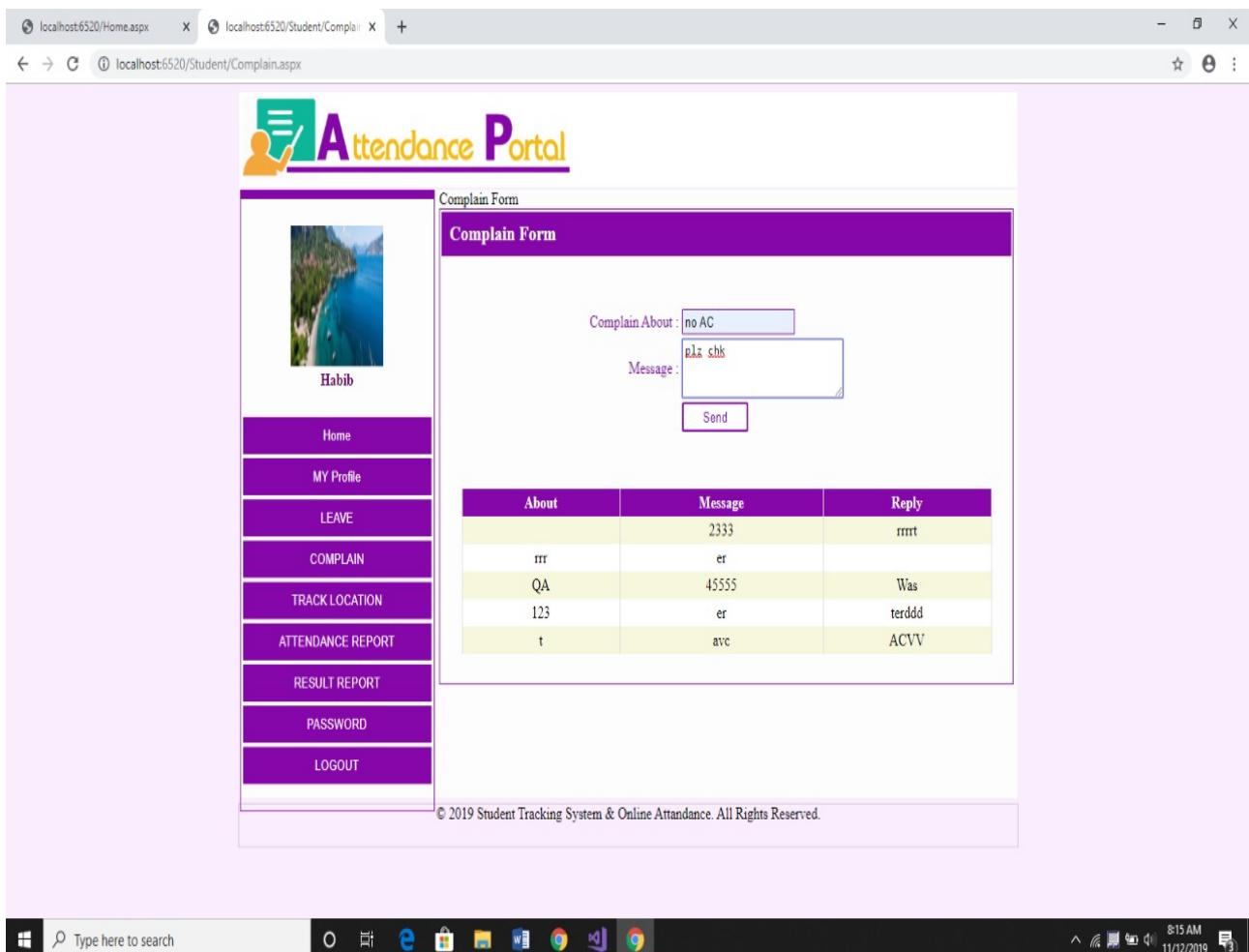


Figure 7.33: Complain Form

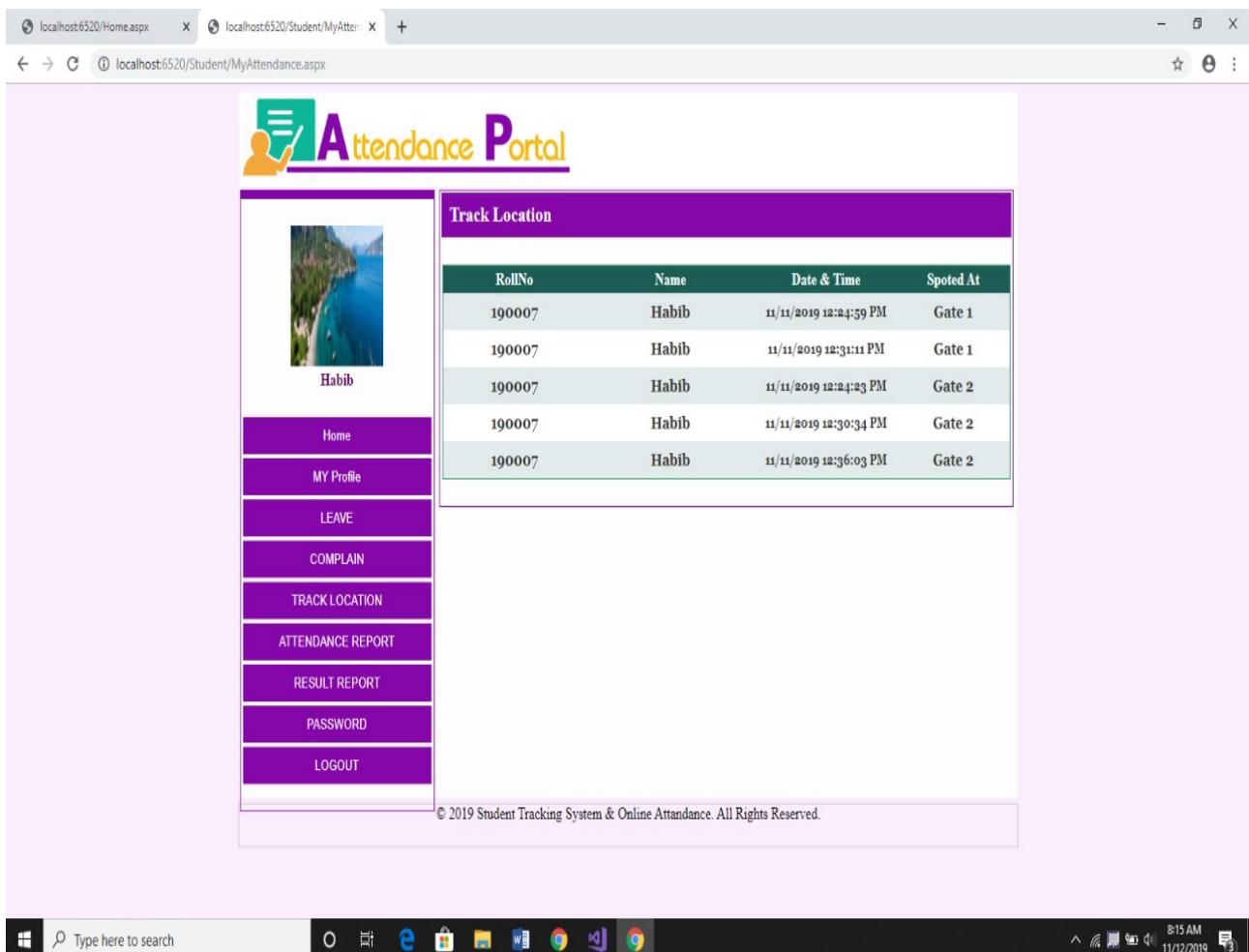


Figure 7.34: Track Location Form

The screenshot shows a web browser window with two tabs open: 'localhost:6520/Home.aspx' and 'localhost:6520/Student/StdAttendance.aspx'. The second tab is active, displaying the 'Attendance Portal' interface. The main content area is titled 'My Attendance Report'. It includes a dropdown menu 'Select Month : SELECT' and a 'Report' button. Below this, a table lists attendance records for student 'Habib'. The table has columns: RollNo, Name, Email Id, Date, and Status. The data shows 12 entries from November 1st to November 12th, with most records showing 'Absent' status except for one 'Present' record on November 11th. A sidebar on the left contains links for Home, MY Profile, LEAVE, COMPLAIN, TRACK LOCATION, ATTENDANCE REPORT (which is highlighted in blue), RESULT REPORT, PASSWORD, and LOGOUT. At the bottom of the report table, there is a copyright notice: '© 2019 Student Tracking System & Online Attendance. All Rights Reserved.'

RollNo	Name	Email Id	Date	Status
190007	Habib	habibyousuf94.hk@gmail.com	01-11-2019	Absent
190007	Habib	habibyousuf94.hk@gmail.com	02-11-2019	Absent
190007	Habib	habibyousuf94.hk@gmail.com	03-11-2019	Holiday
190007	Habib	habibyousuf94.hk@gmail.com	04-11-2019	Absent
190007	Habib	habibyousuf94.hk@gmail.com	05-11-2019	Absent
190007	Habib	habibyousuf94.hk@gmail.com	06-11-2019	Absent
190007	Habib	habibyousuf94.hk@gmail.com	07-11-2019	Absent
190007	Habib	habibyousuf94.hk@gmail.com	08-11-2019	Absent
190007	Habib	habibyousuf94.hk@gmail.com	09-11-2019	Absent
190007	Habib	habibyousuf94.hk@gmail.com	10-11-2019	Holiday
190007	Habib	habibyousuf94.hk@gmail.com	11-11-2019	Present
190007	Habib	habibyousuf94.hk@gmail.com	12-11-2019	Absent

Figure 7.35: Attendance Report Form

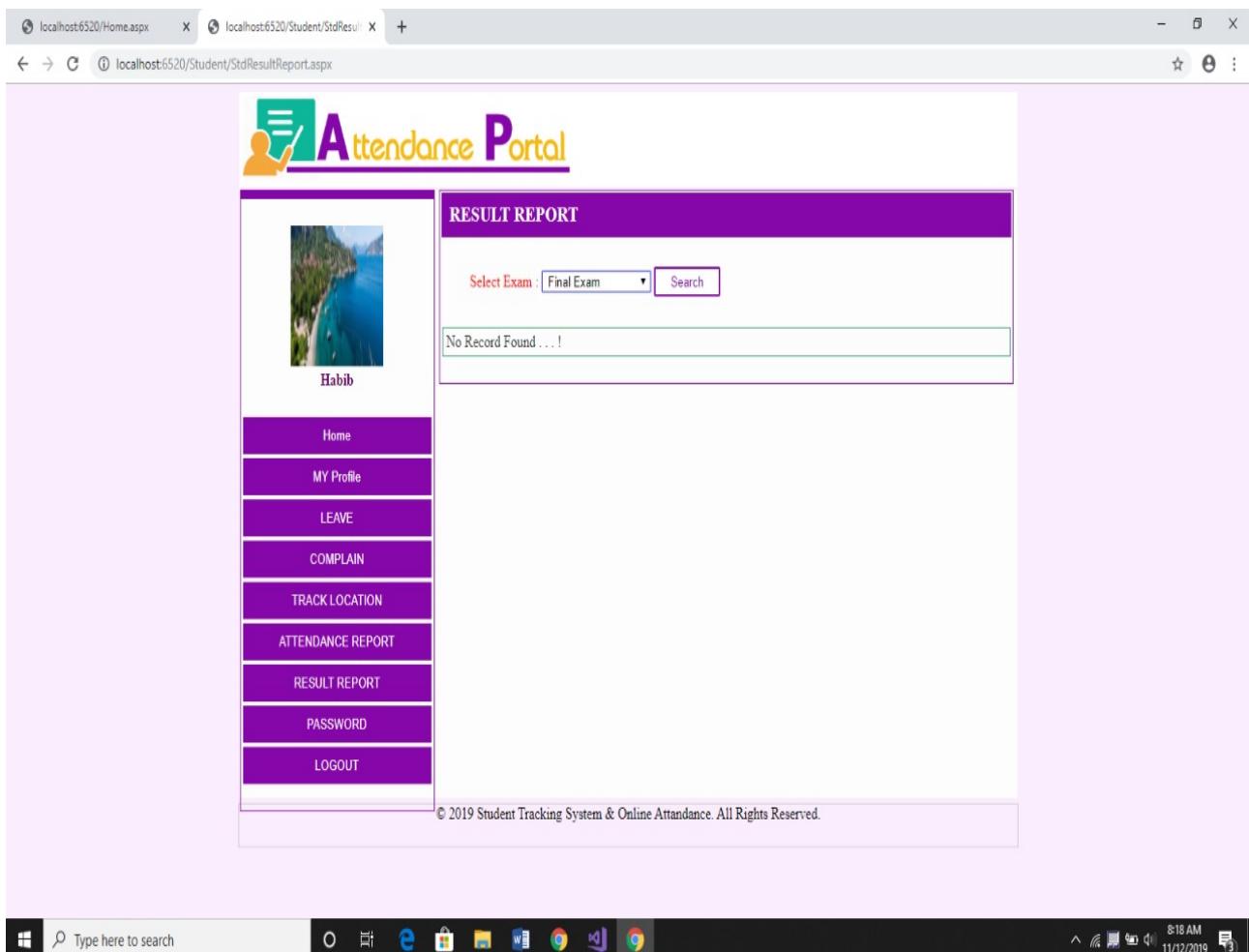


Figure 7.36: Result Report Form

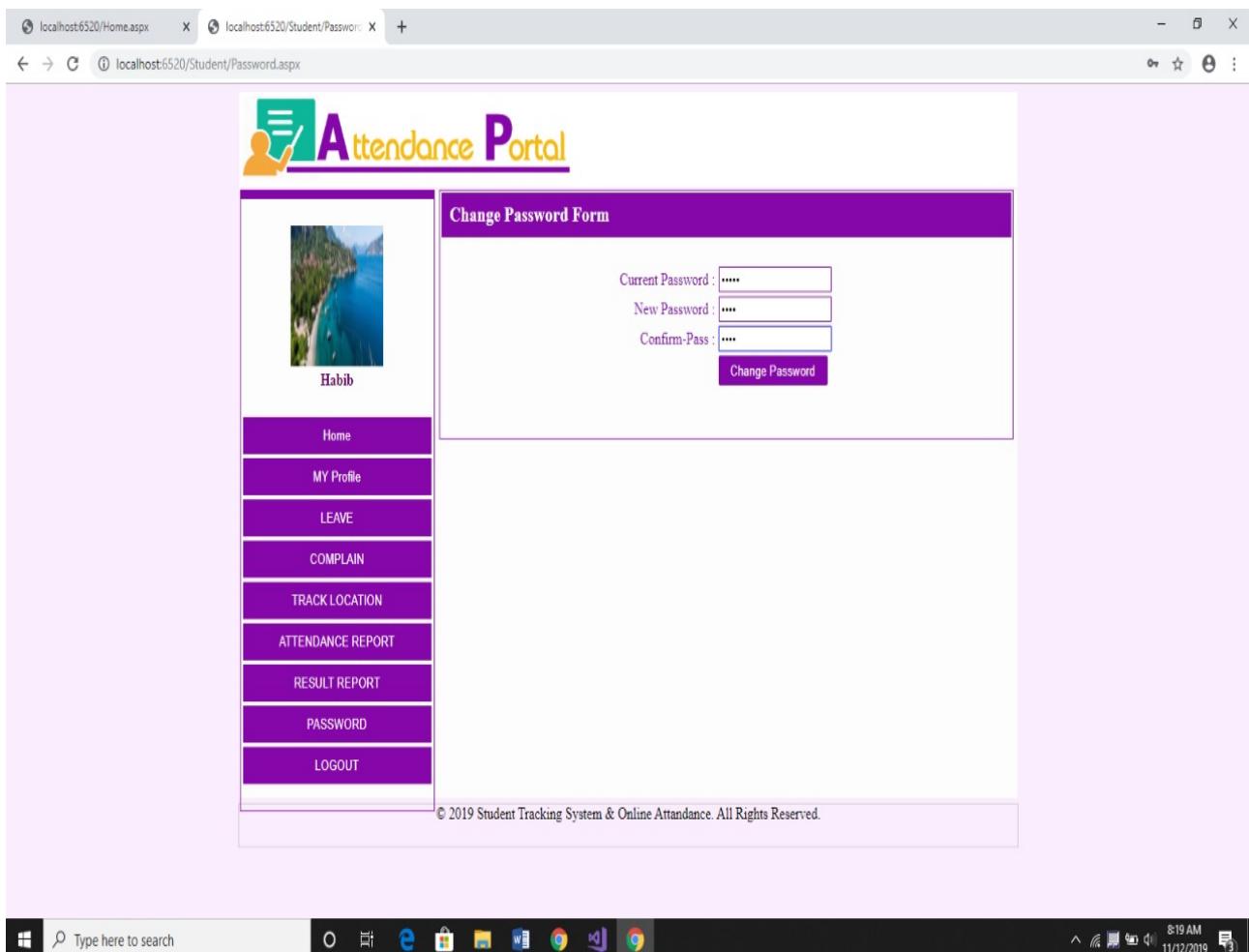


Figure 7.37: Change Password Form

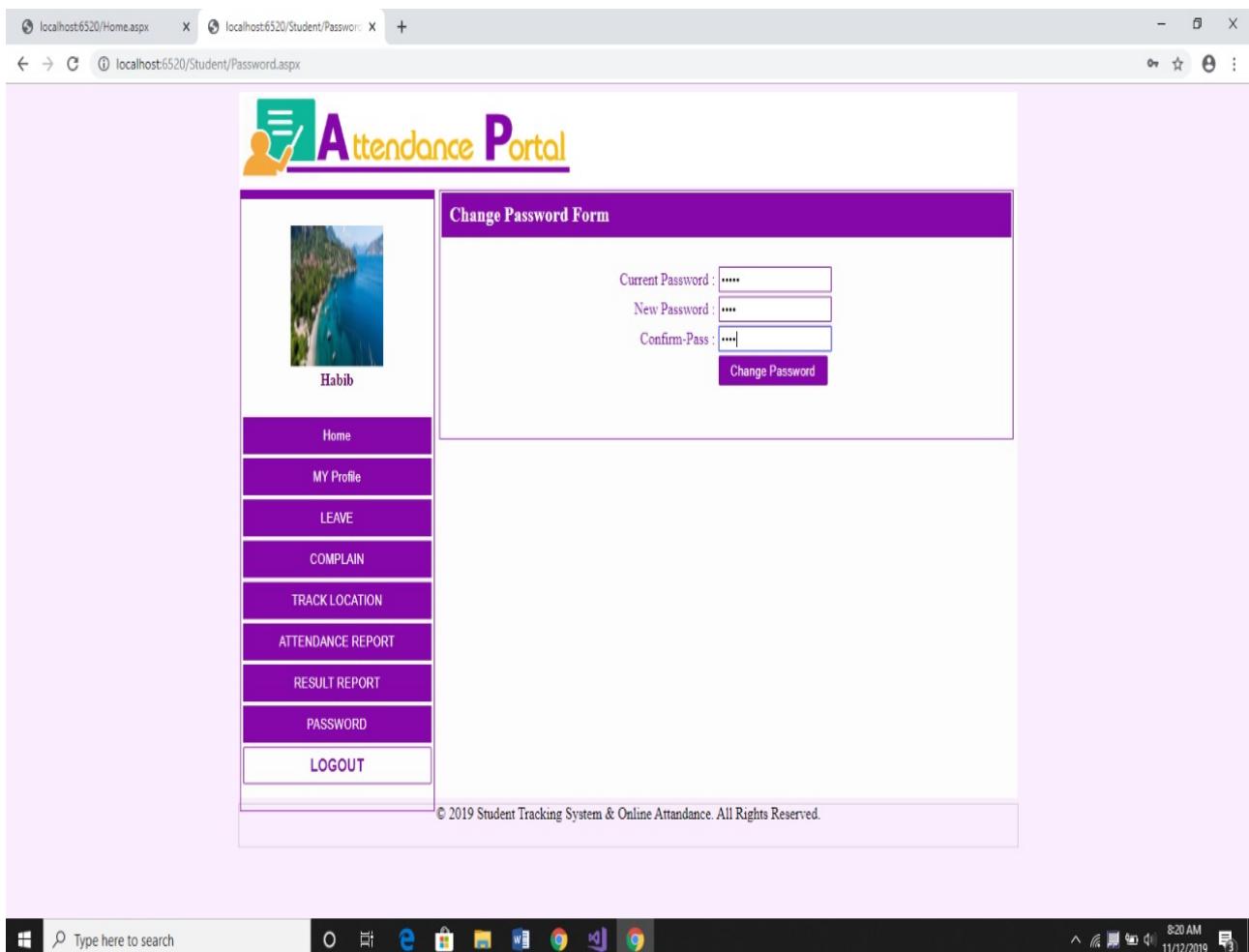


Figure 7.38: Logout Form

Chapter 8

Conclusion And Future Enhancements

8.1 Conclusion

In conclusion, the objective to build an automatic attendance system using RFID was successfully achieved. In terms of performance and efficiency, this project has provided a convenient method of attendance marking compared to the traditional method of attendance system. By using databases, the data is more organized. This system is also a user friendly system as data manipulation and retrieval can be done via the interface, making it a universal attendance system.

In this era of fast and high-tech technology there is a need for every organization to update their usual systems and make it potent and decisive. This Web-based application system is working well and is prepared to serve any educational organization. Thus, it can be implemented in either an academic institution or in organizations.

8.2 Future Enhancement

Since, our system is well developed using the emerging technology of RFID (Radio Frequency Identification) but there are some other options also on which the work can be done in future to make it extra active and efficient like face recognition and NFC mobile devices.

Some further improvements can be made on this RFID in order to increase its reliability and effectiveness.

- By incorporated an indicator or an LCD screen in the system to indicate when an unregistered card is scanned.
- An IP camera can be integrated into this system to enable the monitor to view the person who makes the transaction to avoid a problem of a person scanning in for another person.
- A reminder alert also can be developed to effectively track any ID that has been absent for an unacceptable times in a row.
- Finally, this attendance system can be improved by adding a feature where the attendance system indicates when an employee or a student is late for work or classes as the case maybe.

Chapter 9

Appendices

9.1 Appendix A

Details of Conference

We send our research paper into the ICSET International Conference On Science, Engineering and Technology and our research paper has been successfully accepted by the international conference. Here is the invitation of the conference to attend and present the paper.

We are happy to inform you that your paper has been selected for ICSET on 25th- 26th September, 2019 at Johannesburg, South Africa after peer review process which will be organized by Researchfora for presentation (oral presentation) at the Conference. Conference Proceeding having ISBN (International Standard Book Number) and certificates of paper presentation will be given.

UNIVERTIAL PAPER ID

ACCEPTANCE LETTER Inbox star

R **Researchfora Org** Sep 11
to me ▾ ◀ ⏹

Dear Researcher,
We have accepted your research paper.
Herewith we have attached the Acceptance Letter.
Please find it and proceed for registration.

—
Thank You
Sajita
Conference Coordinator
Call/whatsapp: +918895188531
Mail: info@researchfora.com
Web: www.researchfora.com
Fax-(0674) 235-0480

International Conference on Science, Engineering & Technology ICSET
Johannesburg, South Africa EVENT ACCEPTANCE LETTER

We are happy to inform you that your paper has been selected for ICSET on 25th- 26th September, 2019 at Johannesburg, South Africa after peer review process which will be organized by Researchfora for presentation (oral presentation) at the Conference. Conference Proceeding having ISBN (International Standard Book Number) and certificates of paper presentation will be given.

UNIVERTIAL PAPER ID <small>(Leave blank for registration)</small>	PAPER TITLE	AUTHOR'S NAME	CO-AUTHOR'S NAME
Author's signature here _____ Date _____			

9.1.1 Details of Conference Paper/Competition

International Conference on Science, Engineering & Technology – ICSET Johannesburg, South Africa 25th- 26th September, 2019 EVENT ACCEPTANCE LETTER			
<p>We are happy to inform you that your paper has been selected for ICSET on 25th- 26th September, 2019 at Johannesburg, South Africa after peer review process which will be organized by Researchfora for presentation (oral presentation) at the Conference. Conference Proceeding having ISBN (International Standard Book Number) and certificates of paper presentation will be given.</p>			
UNIVERTIAL PAPER ID (Must use in future Communication)	PAPER TITLE	AUTHOR'S NAME	CO-AUTHOR'S NAME
RF-ICSETJOHA-25099-6361	Online Student Tracking and Attendance System	Saba Ahsan	Bushra Alam, ShumailJaved, Muhammad Habib Yousuf, Sved Qasim Athar
<i>Kindly confirm your Registration and Event Participation by following links.</i>			
OFFICIAL PAGE OF EVENT: http://researchfora.com/Conference2019/SouthAfrica/2/ICSET/			
FOR REGISTRATION GUIDELINES: http://researchfora.com/Conference2019/SouthAfrica/2/ICSET/Registration.php			
Register now Online by clicking below(By Using Credit Card/Debit Card/Net Banking)			
http://researchfora.com/PAYMENT/			
Or Bank Details(For Offline payment)			
OPTION-1			
ACCOUNT NAME : Institute For Technology and Research ACCOUNT TYPE : Current Account BANK NAME : State Bank of India ACCOUNT NO : 32764752761 IFSC CODE : SBIN0010927 SWIFT CODE : SBININBB270 (For foreign MONEY transfer) ADDRESS : Khandagiri,Bhubaneswar,Odisha-751030			
* After the payment via credit card or debit card Kindly mail us the transaction details along with the scan copy of the Identity proof of the card holder. ** For any query related to payment you can mail us to- info@researchfora.com ***The registration fee received by Researchfora is not refundable. Registration fee includes charges for conference participation only (Day 01). Arrangements and costs of visa, travelling and accommodation are not the responsibility of our organization; they will be borne by the author him/herself.			
Last date of Registration	9th September, 2019 (Kindly confirm your registration process before this date)		

Note: Kindly send us the details regarding payment and Registration form to the official mail Id of the Event before last date of registration.

All Selected and registered papers will also be forwarded for publication in any one of the following International Journals after the conference.

Page 1 of 2

Figure 9.1: Screen Short of Acceptance Letter

9.1.2 Research Paper

Online Student Tracking and Attendance System

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Abstract- Attendance Management is a key tool to determine any organization success and performance. Considering this, it is very difficult for an organization to maintain large records manually. The ability to compute the attendance percentage becomes a major task as manual computation produces errors, and wastes a lot of time. Moreover, the under age students easily gets involved in unwanted activities and bunk their classes. For the proposed reason, a systematized Web-Based application for students is designed to manage and track student's attendance and their activity in the class. The system is implemented using The Asp.Net framework. In addition, CSharp provides dynamicity to the application. The database used is SQL Server. Here the software using a microcontroller controls all the hardware components. In this system students are able to mark their attendance online by the use of a card. With the same card their location will be tracked and they can be easily monitored inside the school. This is possible by the use of latest technology i.e. RFID (Radio Frequency Identification). This online system is designed in a way that the students attendance, tracking, result records and all the important notices will be uploaded on to the application as well as into the database. Therefore, parents will not be bothered for non-pertinent meetings with the teachers as they are already aware. Through the test case it is proved that the system is working efficiently and prepared to serve its benefits to any organization.

Keywords: Attendance Management, Web-Based Application, RFID (Radio Frequency Identification), location tracked, monitored.

I. INTRODUCTION

Many institutions today, face problems of keeping large attendance records because the sheets in which they keep the attendance and other students records may lost. It has become very difficult to maintain it manually. Further, to keep students record manually is time taking and proportional of taking a chance with it. Attendance

record in most of the institutions is required in assessments. This becomes the challenge for teachers as well as students who can claim of short attendance at any point. Students result records and important notices often expose to the parents after they have met their due dates. The solution doesn't lie in being more optimistic and present for such activities, again wasting time and effort instead, to get the things done automatically.

Hence, Student tracking system and online attendance is a great replacement of usual systems in which all the records are updated and stored on to the application as well as the database. It minimizes all kinds of risks that were possible before.

This Web-based application system will mark attendance and start tracking students location on entering the school. Also helps in generating online reports. Thus, it saves time, work load and material resources by improving students learning and buildout.

II. RELATED WORK

As our project is concerned there are many related works done in the past. Some of which include RFID based attendance system. They design a prototype system to facilitate the authority by the automation of attendance using RFID technology[1].

According to [2] Face Recognition Based Attendance System Using Machine Learning in which students roll is called through face recognition. This system uses Viola and Jones framework which makes use of Integral Image and AdaBoost learning algorithm as classifier that gives better results in different lighting conditions.

Attendance Management System Using Barcode Identification. They develop a system that uses barcodes. Student attendance will be taken by swiping the card on barcode reader. The barcodes would be attached at the back of each student's ID card and the information that would be embedded in the barcodes will contain unique data of the student and all the necessary information about the student[3].

Attendance recording and consolidation system using Arduino and Raspberry Pi. This system is implemented using Arduino and Raspberry Pi microcontroller boards. Arduino is used to implement the attendance recording device Raspberry Pi is used as a Web server. ZigBee technology is used for transmitting the attendance from the ARD to the server. A web page is also created to display the aggregate percentage of attendance of each student[4].

A system in which input data is taken through cameras capable of rotating in all the directions. They capture the facial images to mark the attendance and also helps to predict the behavior of students. The efficient system was capable of generating reports to the teachers and students both. However, the success rate in recognizing the facial expressions was 85%, though it needs improvements in it but at the same time very coherent system [5]. Another efficient fingerprint recognition system works by processing and verifying the fingerprints very fast for biometric identification [6]. A wireless system using RFID, Biometrics, and GSM Modem is an automated and well designed approach to detect and maintain the attendance and location of a student. The system provides authenticity in such a way that the students Radio-frequency identification (RFID) card is matched against the database and only finalized once his fingerprint is verified using the biometric fingerprint scanner. Also, the sms will be sent through the GSM. Attendance records of both the students and staff members will be maintained through this applied system [7].

III. DESIGN AND IMPLEMENTATION

Student tracking system and online attendance is designed and implemented using the RFID technology, CSharp and Asp.Net framework. For the application to be more appealing HTML and CSS languages are also used.

IV. DATABASE

VI. GRAPH

The two systems i.e. (the manual and the automatic attendance and tracking system) comparison is illustrated

MYSQL language along with the SQL Server is used for the system.

V. SYSTEM FEATURES

The innumerable features of the web application include Online attendance, monitoring through tracking and records updation. In wide it contains Admin, Staff and Student functionalities. For attendance students have to swipe their RFID cards on to the reader and instantly attendance notification will be send on to the server and web application. Thus, it saves the time and inaccuracy. Students safety is the most important and tracking is the solution. To avail this feature students have to swipe their RFID cards again on to the reader placed at the entrance of school and their tracking will start. Thus, parents will remain well aware about their children. All course related and foremost considerations will be displayed onto the website.

When it comes to functionalities:

The Admin is a person who run and manage the system, in this project the owner or director of the school has rights of admin. Admin can Add standard, Division/Classroom and can also add staff. He will manage all the complains and reports and also leave reports.

The main aim of the attendance system is fulfilled by staff. Staff can add student detail and fill the attendance daily for his division. The staff can only fill attendance for his division students and he can manage leaves and complains made by only his division student.

All students have unique username and password to access the system. After login into system student can view his attendance reports and manage his account. If any student has any problem regarding education, he can directly make complain to his class teacher using this system. Student can apply for leave through the system and he can get reply from his class teacher about his leave status.

As in the case of forgetting the password, there is an option of change password for the Staff and the Student.

The system is designed in a way that it saves the time and inaccuracy. Both parents and students will be benefited by the use of this application. Also, parents will not be bothered for irrelevant meetings with the teachers as they are already aware.

by the following graph. In graph, it is clearly seen that Automatic system works more efficiently and has come out with far better results than the manual system.

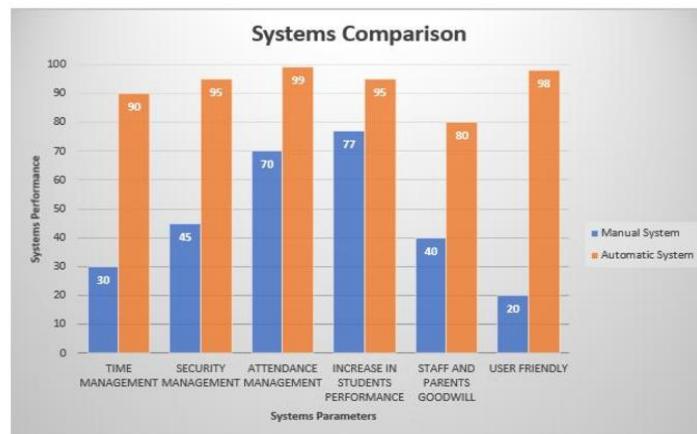


Fig-1: Systems Comparison Graph

VII. INTERFACE

The application is designed by using the software interface along with Menu driven and GUI(Graphical user interface) user interfaces. The system uses ASP.Net

framework within it to increase instinct approach to the user.

VIII. SYSTEM DIAGRAM

Students swipe their RFID cards onto the reader, on swiping the card, their attendance is marked online which get saved into the system and application.

As the student walks into the school, he again has to swipe his card from where his location will be tracked and uploaded onto the application so the parents can remain aware of their activities. School

staff can upload important notices and result updates onto the application which is visible by both the parents and the students.

Other important activities are also performed by the staff, Admin and Students on the application.

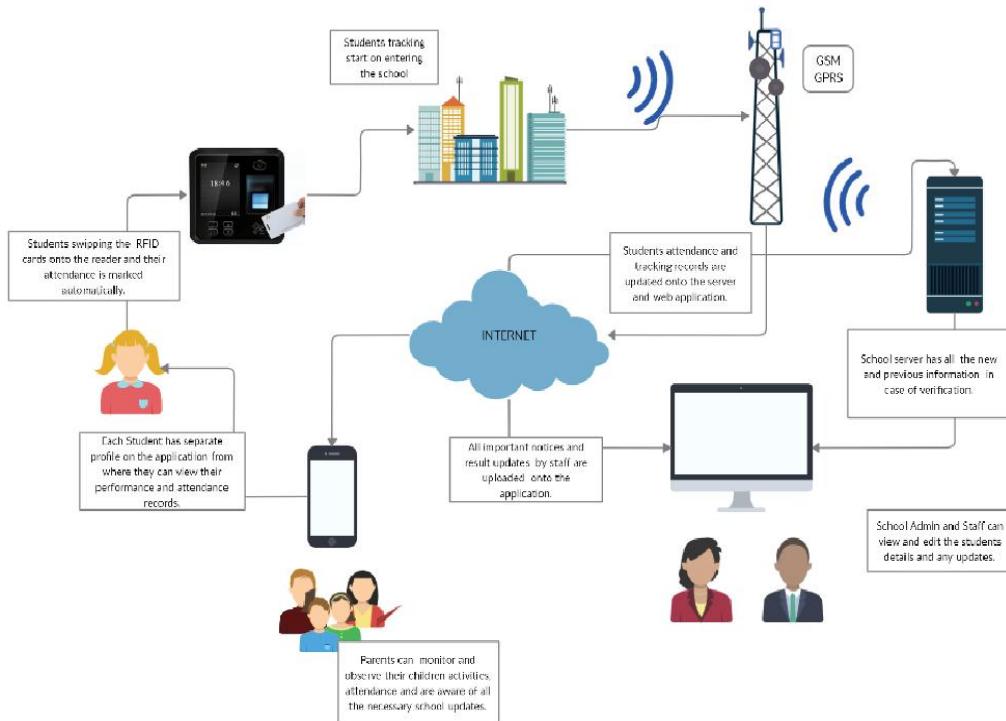


Fig-2: System Diagram

IX. CORE OF THE SYSTEM

The system is mainly divided into three sections i.e. Admin, Staff and Student.

A. Admin

The Admin has all the main rights of the system. Admin can add division/classroom and standard of students, staff, and has authority to reply to all the coming complains and leaves.

B. Add Division

While adding the division Admin can fill the student section name, seat number and select the standard.

C. Add Staff

Admin can add staff in which all the needed details of staff (email, qualification, cell #, address, city) are required. Staff username and password are also allocated by the Admin.

D. Display Panel

All the added or sent details are visible onto the Staff report, complain, Leave, Student reports, and feedback menus.

E. Staff

The staff can edit and handle details for his division students only as the requirement of the system. From the home page of the web application Staff can login by entering their username and password. As they login, their profile is displayed on the front which they can also edit. Staff menu also has multiple required options.

F. Add Student

Students along with their complete bio-data can be filled in by the Staff as they have authority to add student of their division only.

G. Attendance Report

Students attendance of each day, month and year is properly visible here. Staff can view which student is absent or present on which date of his division only.

H. Complain

In complain menu Staff can view the number of complains arrived.

I. Leave

From new leave report menu all the coming leaves can be viewed. Staff also has the right to approve or reject any leave.

J. Student

As the Student login into the system, his/her attendance, leaves and complains are shown on the home page automatically without selecting any option.

K. Apply for Leave

The Student can apply for leave after selecting leave from the menu and from the Leave Reason menu student can define his/her reason of the leave and also leave days. From the status bar student can check that whether his/her leave is approved or not.

L. Complain

If the student has any complain regarding his studies or school, he can directly send complain message with its title to the admin. Student can also view and receive the reply from admin.

M. Attendance Report

From Attendance report portal students can check their attendance of any month. Hence, it also helps them to avoid further absences if they have already reached the limit.

X. CONCLUSION

The significance of this system for our society lies as under: When students enter into school their location is tracked and their parents can observe their activity. By online attendance through RFID (Radio Frequency Identification) cards and readers, staff don't need to be worry about attendance accuracy any more. Online student record updates, important notices i.e. parents will remain well-informed about their children status. This system can be used in any educational institution. However, anywhere this system will be applied, it will surely serve benefits.

All necessary modifications like updation, insertion, deletion can be done very easily without disturbing the system architecture. To make the system user friendly and easy to handle, Csharp, HTML, CSS and ASP.Net framework is used.

In this era of fast and high-tech technology there is a need for every organization to update their usual systems and make it potent and decisive. This Web-based application system is working well and is prepared to serve any educational organization. Any organization can become popular and well efficient by employing this system.

XI. Future Work

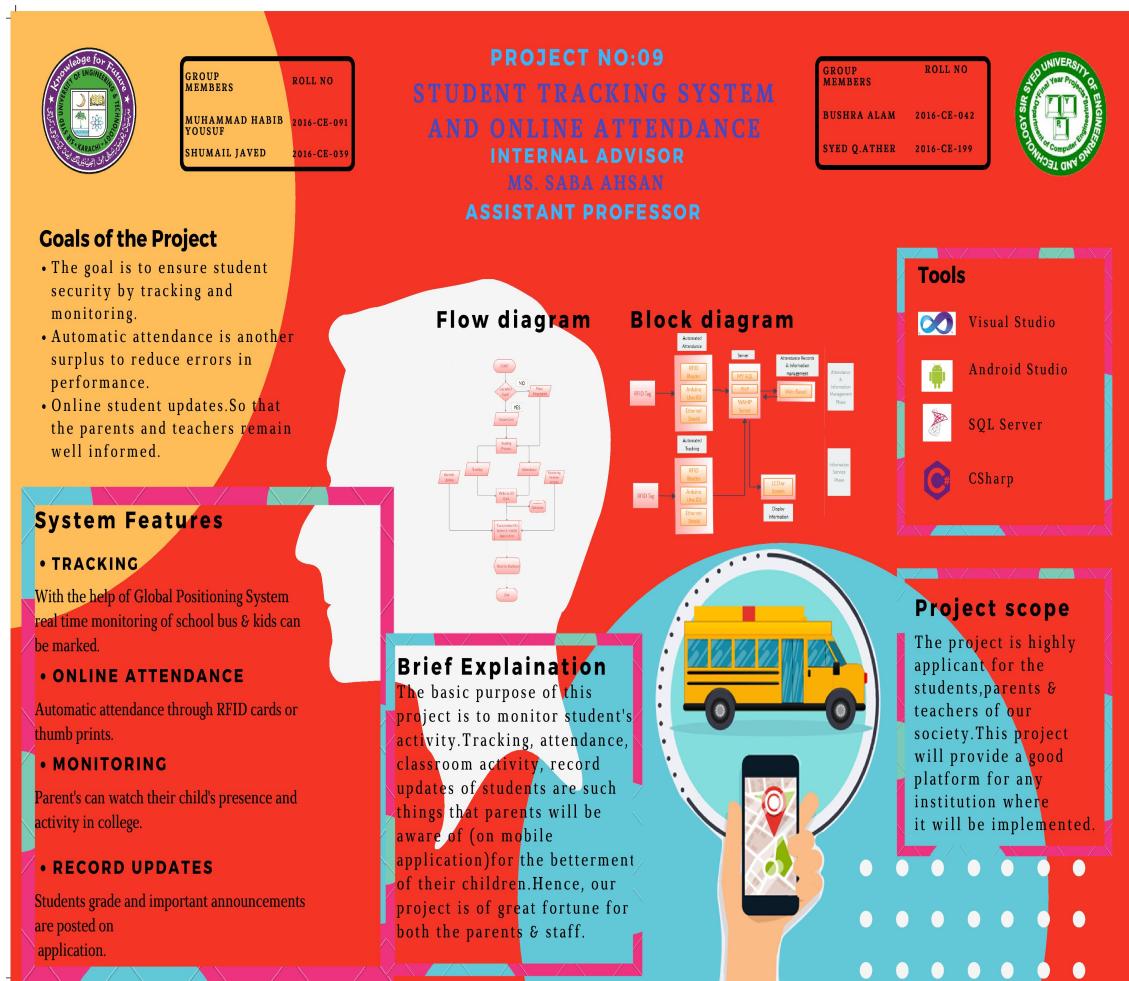
Since, our system is well developed using the emerging technology of RFID (Radio Frequency Identification) but there are some other options also on which the work can be done in future to make it extra active and efficient like face recognition and NFC mobile devices.

XII. REFERENCES

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9.2 Appendix B

9.2.1 Poster



9.2.2 Standee



Figure 9.3: Standee

9.2.3 Brochure

Concept And Outline

The main objective of this system is to enhance the college /school monitoring system taking into account factors such as reliability, time saving, and easy control.The proposed system consists of a mobile RFID solution in a logical context.

Block Diagram

```

graph LR
    A[RFID Tag] --> B[RFID Reader]
    B --> C[Attendance]
    C --> D[Server]
    D --> E[Attendance Process & Information Management]
    E --> F[Web Server]
    F --> G[Attendance & Information Management Plan]
    H[RFID Tag] --> I[RFID Reader]
    I --> J[Attendance Tracking]
    J --> K[Server]
    K --> L[Attendance & Information Management Plan]
    M[LCD Screen] <--> N[Diversity Information]
    
```

Project Scope

The project is highly applicant for the students,parents & teachers of our society.This project will provide a good platform for any institution where it will be implemented.

"We are changing the world with technology".

- Bill Gates

Project Features

- **ONLINE ATTENDANCE**
Automatic attendance through RFID cards or thumb prints.
- **MONITORING**
Parent's can watch their child's presence and activity in college.
- **RECORD UPDATES**
Students grade and important announcements are posted on application.
- **MOBILE APPLICATION**

Project Goals

- The goal is to ensure student security by tracking and monitoring.
- Automatic attendance is another surplus to reduce errors in performance.
- Online student updates. So that the parents and teachers remain well informed.

Figure 9.4: Brochure Front



FEATURE RICH SOFTWARE

Enhance the prestige of our school by adapting this efficient and feature-rich software.



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Student Tracking System And Online Attendance

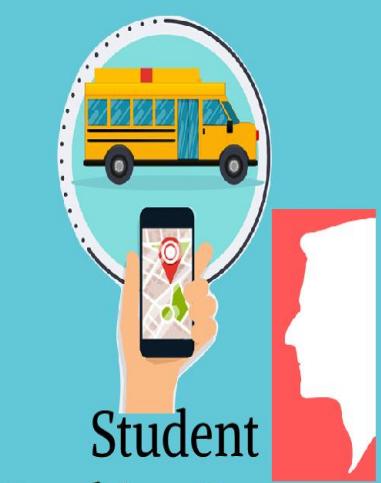



Figure 9.5: Brochure Back

Chapter 10

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