1. INTRODUCTION

The design and implementation of a student management system and user interface is to replace the current paper records. College Staff are able to directly access all aspects of a student's details through a secure, online interface. The system utilizes user authentication, displaying only information necessary for an individual's duties. Additionally, each sub-system has authentication allowing authorized users to create or update information in that subsystem. All data is stored securely on MySQL servers managed by the college administrator and ensures highest possible level of security. The system features a complex logging system to track all users access and ensure conformity to data access guidelines and is expected to increase the efficiency of the college's record management thereby decreasing the work hours needed to access and deliver student records to users.

Previously, the college relied heavily on paper records for this initiative. While paper records are a traditional way of managing student data there are several drawbacks to this method. Paper records are difficult to manage and track. This system provides a simple interface for the maintenance of student information. It can be used by educational institutes or colleges to maintain the records of students easily. Achieving this objective is difficult using a manual system as the information is scattered, can be redundant and collecting relevant information may be very time consuming. All these problems are solved using online student management system. The paper focuses on presenting information in an easy manner.

1.1 Purpose

The purpose is to design a college website which contains up to date information of the Student records. That should improve efficiency of college record management.

1.2 Scope

The scope of the project is to provide a hassle free environment for the students as well as faculty to easily manage student records such as attendance and marks

1.3 Project Description

The project is a Student management system which automates the task of marking attendance by implementing face recognition which automatically marks the student's attendance.

The system also stores information about the student's marks.

2. LITERATURE REVIEW

2.1 EXISTING SYSTEM

In the existing system there are a lot of disadvantages. Some of them are,

i) Takes Up a Lot of Space

ii) Prone to Damage

iii) Being Misplaced

iv) Hard to Make Change

v) Lack of Security

vi) Higher cost

2.2 PROPOSED SYSTEM

The proposed system uses Face Recognition that will detect a given face, it uses advanced face recognition algorithms to detect a student's face and mark the attendance automatically, hence eliminating the hassle of a teacher going through the attendance list in a notebook which is prone to error as well as a waste of time.

The proposed system will also maintain all the information in a secure online database which is safe from being mishandled by giving administrative privileges to only authorized users unlike a attendance register which anybody can have physical access to.

3. HARDWARE AND SOFTWARE REQUIREMENTS

3.1 Hardware Requirements

Processor	:	Intel i3 5th gen
RAM	:	4 GB
Hard Disk	:	100 GB

3.2 Software Requirements

Operating System	:	Windows/MacOS/Linux
Back end	:	Python, mySQL
Front end	:	JavaScript, CSS, HTML

4. REQUIREMENTS SPECIFICATIONS

USERS

- Faculty
- Student
- College Administration

FUNCTIONAL REQUIREMENTS

- A user must be able to manage student records.
- Only Authorized members must be able to access the system.
- The system must be attached to a camera and face recognition must be smooth.
- The administrator who will be given the access to the system must login first before using it.
- The information must be entered and managed properly.

5. DESIGN

5.1 ER MODEL

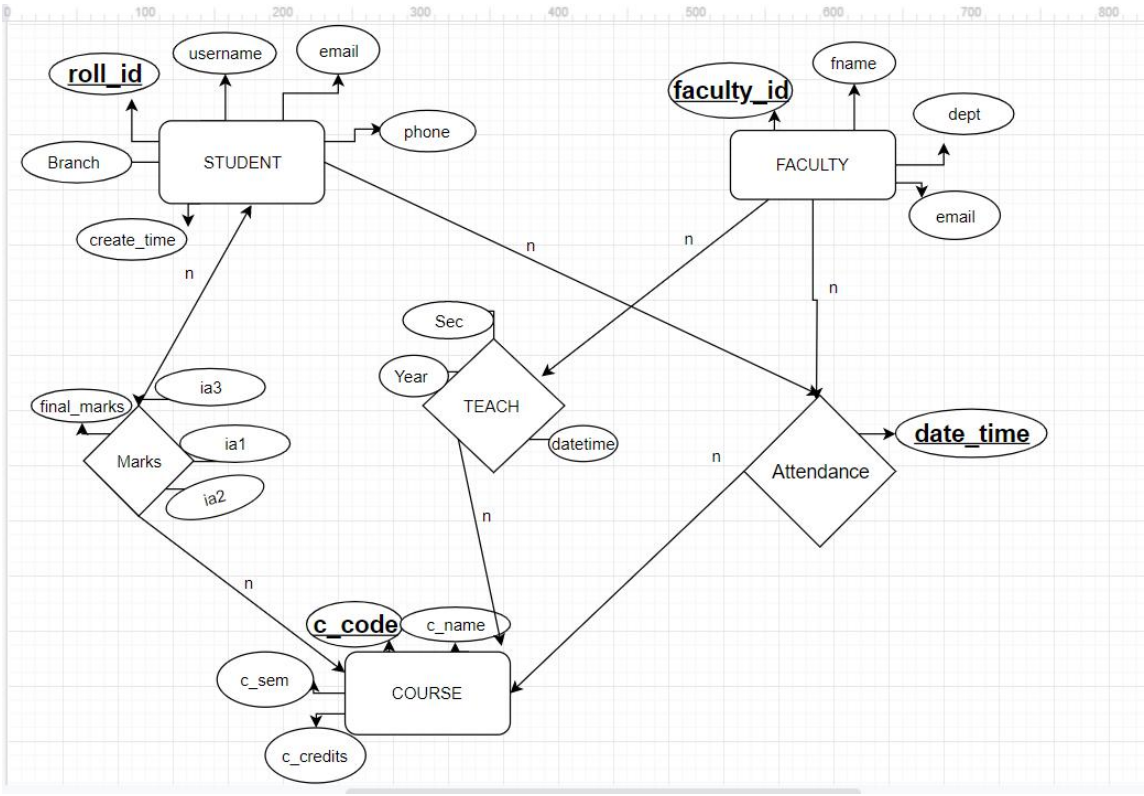


Fig: 5.1 ER Model

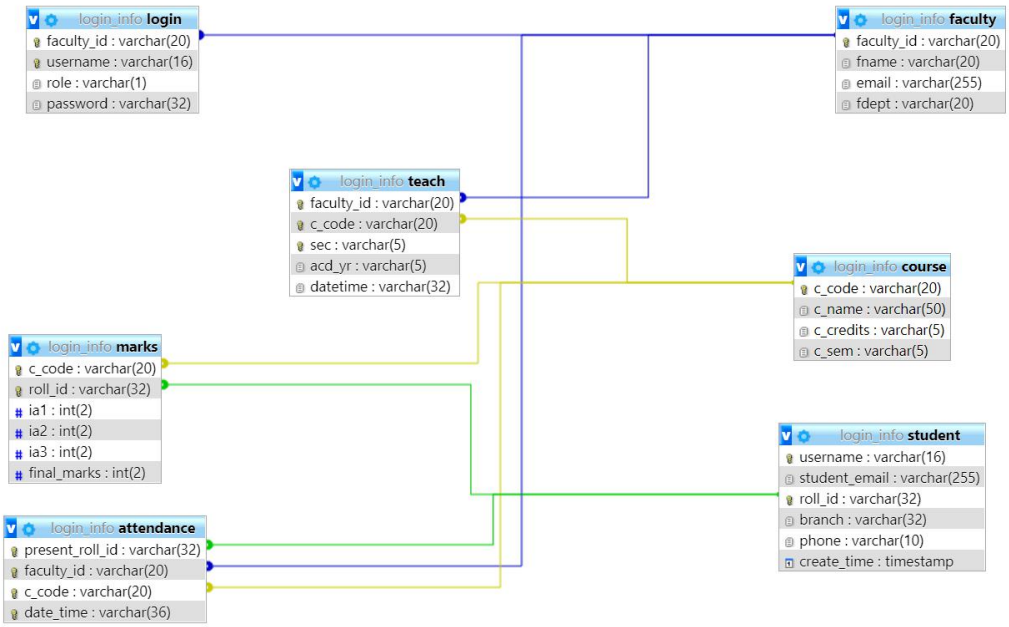


Fig: 5.2 Relational Schema

6. IMPLEMENTATION

6.1 Screen Shots

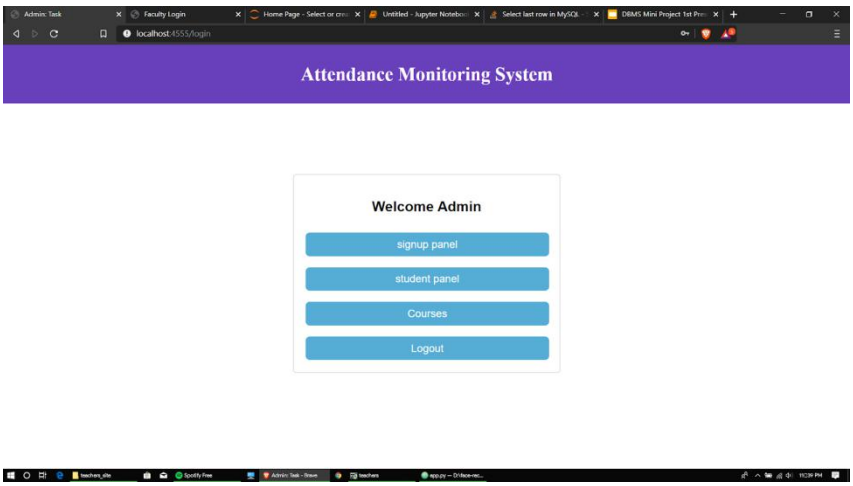


Fig:6.1 Admin Page

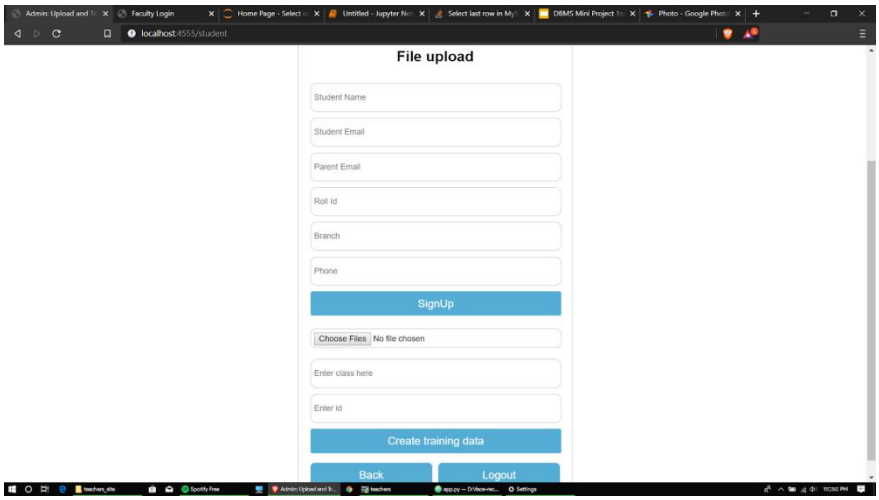
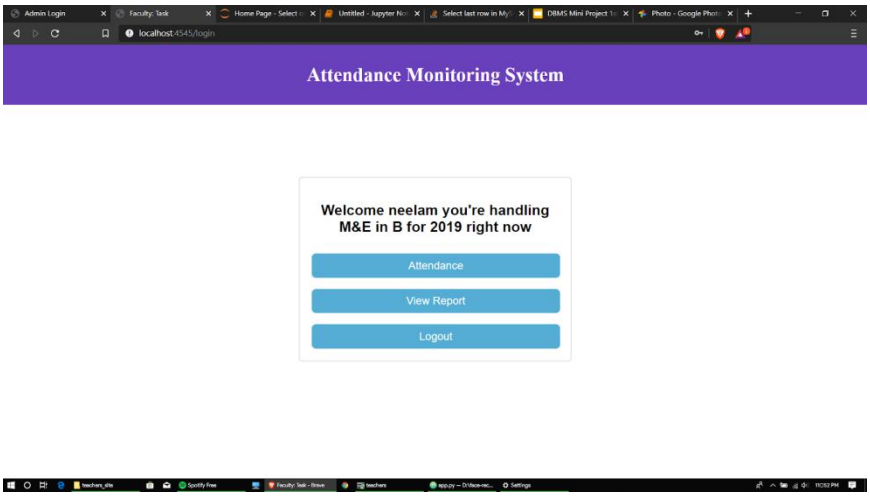


Fig: 6.2 Upload Student



6.3 Teacher Login page

6.4 Stored Procedure

Stored procedure calculates the average marks and displays it.

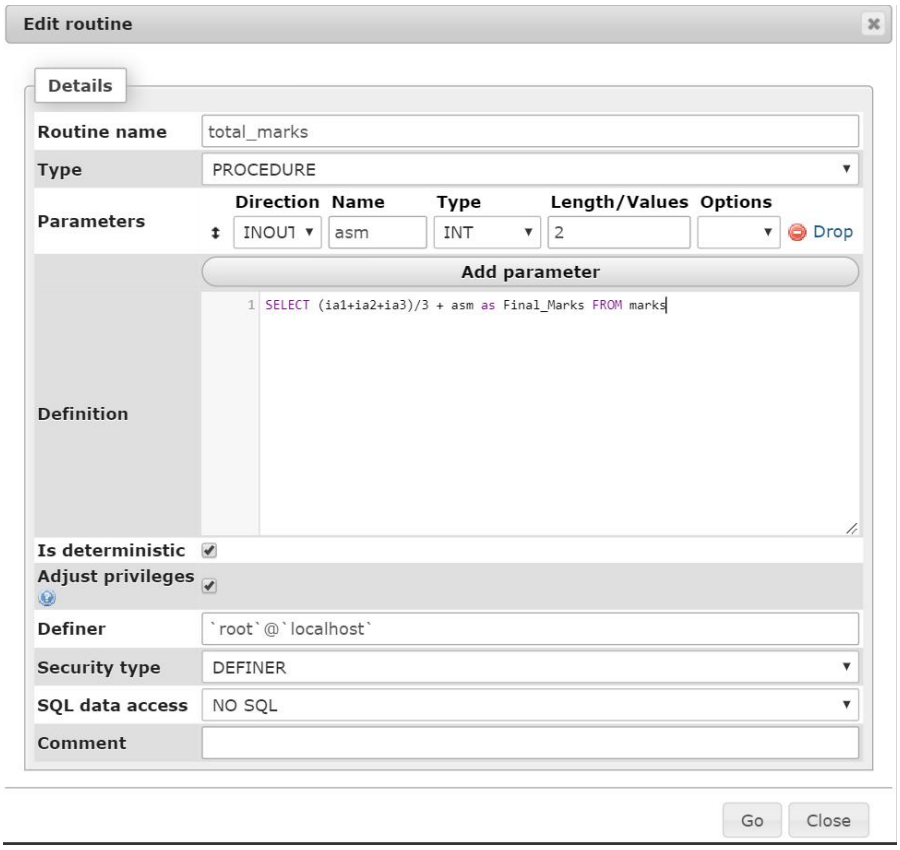


Fig: 6.4 Stored Procedure

The trigger deletes the generated login fields.

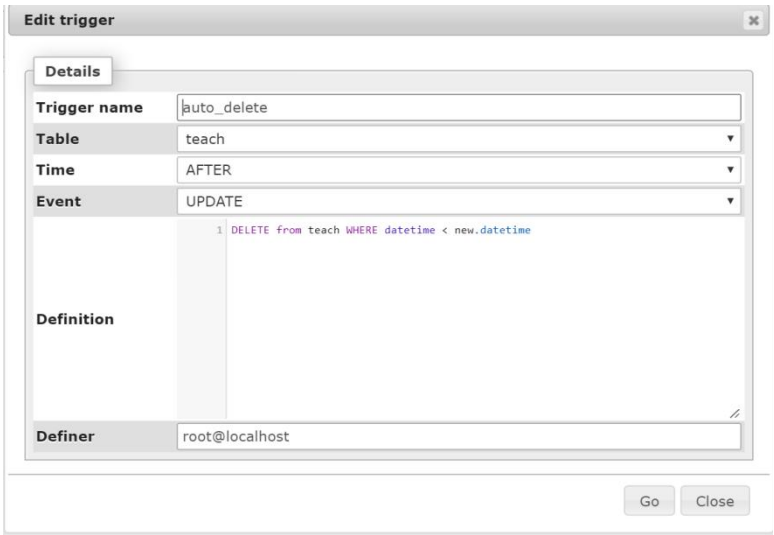


Fig: 6.5 Trigger

7. TESTING

Each Module has been tested individually before integrating them to complete a system

Sl no.	Test Cases	Expected Result	Obtained Result	Remarks
1	Face recognized with roll number	If success : Attendance marked for that roll no	Mark attendance for that roll no	pass
2	Face and roll no. do not match	404 is marked in the attendance	Mark 404 in the attendance	pass
3	Face is not properly captured	Display : “ face not found capture again”	Display : “ face not found capture again”	pass
4	Teacher login	Display “welcome Teacher name ”	Display “ welcome Teacher name “	pass
5	Teacher login failed	Display “ enter proper credentials “	Display “ enter proper credentials “	pass
6	If marks does not exist for given roll number	No mark displayed	No marks displayed	pass

8. CONCLUSION

Student management system is a necessary tool for taking attendance in any environment where attendance is critical. Most of the existing approaches are time consuming, intrusive and require manual work from the users. On identification of a registered student face on the acquired image collections, the attendance register is marked as present otherwise absent. Hence the system is more efficient than existing means and is a great approach to accomplish the required objective.

9. FUTURE ENHANCEMENTS

Further work can be done on this project to alert the student by sending SMS regarding the attendance. For this purpose GSM module can be used. SMS alert can be given to the parent of the student.

BIBLIOGRAPHY

The project has been completed from references of the following links

https://github.com/pallets/flask

https://stackoverflow.com/questions/10434599/get-the-data-received-in-a-flask-request

https://www.youtube.com/watch?v=Z1RJmh_OqeA&t=523s

https://www.youtube.com/watch?v=7S_tz1z_5bA