

ONLINE STUDENT ATTENDANCE SYSTEM USING FACE RECOGNITION

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Abstract: Attendance management is important to every single organization; it can decide whether or not an organization such as educational institutions, public or private sectors will be successful in the future. Organizations will have to keep a track of people within the organization such as employees and students to maximize their performance. Managing student attendance during lecture periods has become a difficult challenge. The ability to compute the attendance percentage becomes a major task as manual computation produces errors, and wastes a lot of time. The system designed in a way that can differentiate the hours of theoretical and practical lessons since the rate of them is different for calculating the percentages of the students' absence. Insertions, deletions, and changes of data in the system can do straightforward via the designed GUI without interacting with the tables.

Keywords: Attendance, Face recognition, image processing.

INTRODUCTION

This chapter describes the term of Attendance and introduces the concept of Online Attendance System. It also gives the overview of the Online Student Attendance System which describes the deliverables of the project.

PURPOSE

The purpose of the online attendance software is to reduce the time that is consumed when attendance is taken manually. Unlike the manual process, an online system easily helps management to analyze student's attendance details as per requirement. Data storage and recovery is fast and secure. Additionally, graphic reports are available which makes interpretation of data simple and easy to grasp. Quick Report Generation: Various reports such as Student-wise attendance, Day-wise attendance, Class-wise attendance, Month-Wise, Class-Attendance, and much more.

EXISTING SYSTEM

Whole world and administrators of Educational institutions' in our country are concerned about regularity of student attendance. Student's overall academic performance is affected by the student's present in his institute. Mainly there are two conventional methods for attendance taking and they are by calling student names or by taking student sign on paper. They both were more time consuming and inefficient. Hence, there is a requirement of computer-based student attendance management system which will assist the faculty for maintaining attendance of presence. The paper reviews various computerized attendance management system. In this paper basic problem of student attendance management is defined which is traditionally taken manually by faculty. One alternative to make student attendance system automatic is provided by Computer Vision. In this paper we review the various computerized system which is being developed by using different techniques. Based on this review a new approach for student attendance recording and management is proposed to be used for various colleges or academic institutes.

PROPOSED SYSTEM

The proposed system explains the need of Attendance System and also describes the importance of high quality online Attendance System application. It introduces the basic concept of the Attendance System. Student attendance system helps teachers to mark online attendance of students during class reduce manual work. It is used to track student's attendance, absentee record, attendance history other related documents. Online Attendance Management System is an application developed for student's daily attendance in school/college. It helps to maintain the accurate record and generate summarized student attendance reports for the students by applying various criteria.

SYSTEM ARCHITECTURE

In the current scenario, there are the various hardware platforms available as shown above. Above these the Operating Systems reside. The application programming interfaces are above the Operating Systems and provide the interaction between the applications built on them and the underlying Operating System and the Hardware Platform. There layer above the API is occupied by the Online Student Attendance System framework on which the applications are proposed to be built. Following is the detailed description of each layer.

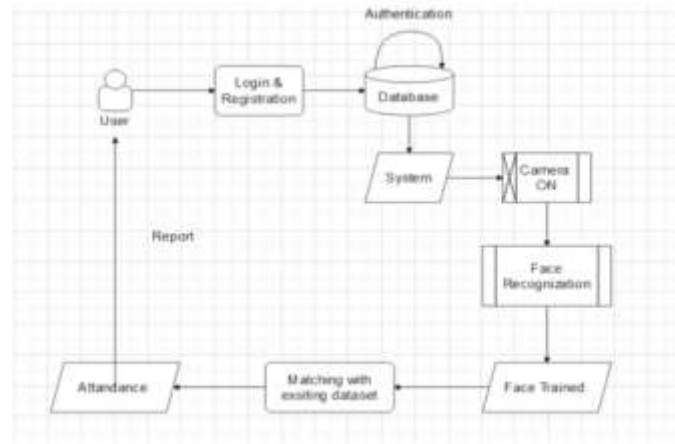


Figure 5.1: Online Student Attendance System Architecture

Fig -1: System Architecture Diagram

An operating system (OS) is a set of programs that manages computer hardware resources, and provides common services for application software. The operating system is the most important type of system software in a computer system. Without an operating system, a user cannot run an application program on their computer, unless the application program is self-booting.

An Application Programming Interface: (API) is a particular set of rules (code) and specifications that software programs can follow to communicate with each other. It serves as an interface between different software programs and facilitates their interaction, similar to the way the user interface facilitates interaction between humans and computers. An API can be created for applications, libraries, operating systems, etc., as a way of defining their vocabularies and resources request conventions (e.g. function calling conventions). It may include specifications for routines, data structures, object classes, and protocols used to communicate between the consumer program and the implementer program of the API. An API consist of a core set of packages and classes. As shown in the Figure 1 the applications will be built using the attendance system Framework. These applications will be built by importing the libraries, include files and the style sheets developed as a whole framework. The framework is developed considering the developer's point of view that is to be able to develop the applications by putting in less time and efforts. Thus the developer will access the API's present in the framework and develop the applications by writing small amount of code.

ADVANTAGES

- **Reliability:** The Online Student attendance applications built using the framewok should ensure that the SD card is mounted on the device. Internet facility must be available for using the feature of video streaming.
- **Availability:** The Online Student attendance shall be available and running in a stable state at all times.
- **Maintainability:** The Online Student attendance framework shall be available to the developers for developing their own online applications.
- **Portability:** The Online Student attendance application can be used regardless of the time and location constraints.

APPLICATION:

Online student attendance system can be used in

- Institutions for Student, Staff attendance
- Company for Employee attendance
- Hospitals for Staff attendance

DATA FLOW DIAGRAM

Online Student Attendance System Using Face Recognition

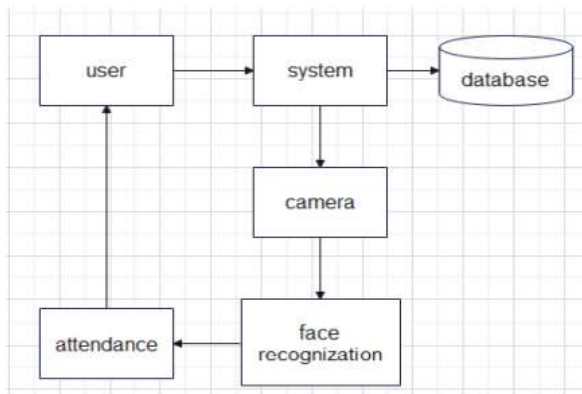


Figure 5.4: Data Flow 2 Diagram

METHODOLOGY

This section describes the various features of the Online Student Attendance application and also describes the implementation methods. Following are some of the features explained with their implementation details

- **Multilingual Application:**

The Multilingual feature is one of the most important features provided by the framework. The framework provides support for the English language which is a Official language. The framework can provide support for more languages if required. This is implemented using the language packs of the respective language. Using the Language button on the transparent bar the user can switch between the languages. The user input is recorded in a text file and depending upon the user language selection the typeface of the content titles is changed. The content like theory animations also can be changed to respective language if recorded in that language.

- **Android 5.1:**

Android 5.1 adds support for using more than one cellular carrier SIM card at a time. This feature lets users activate and use additional SIMs on devices that have two or more SIM card slots. You can access information about the currently active SIM through the Subscription Manager class, including whether or not the device is considered to be roaming on the current network. This information is useful for developers who want to throttle their apps' data access down or off for device users who are sensitive to data access charges.

- **Logger:**

The Logger is basically used for the keep track of the usage of the framework application. It logs the activities performed by the user to a text file on the SD card. It stores information like the Device Manufacturer, Device Name, Android Operating System version, Subject being consumed and the other activities performed during learning with date and time. The Logger can also be used for error detection and correction. By tracking through the log files the reason for the failure can be uncovered.

- **Application:**

The Application provide the user/student to assess the detailed information using the framework app. The user has to select login option and proceed to next option. At the end of the attendance result is displayed and also the user can verify the attendance date wise. The android version 5.1 is used for storing the data on sd card. By clicking on the next button the next option and associated options are retrieved.

- **Xampp:**

XAMPP is an abbreviation for cross-platform, Apache, MySQL, PHP and Perl, and it allows you to build WordPress site offline, on a local web server on your computer. This simple and lightweight solution works on Windows, Linux, and Mac – hence the “cross-platform” part.

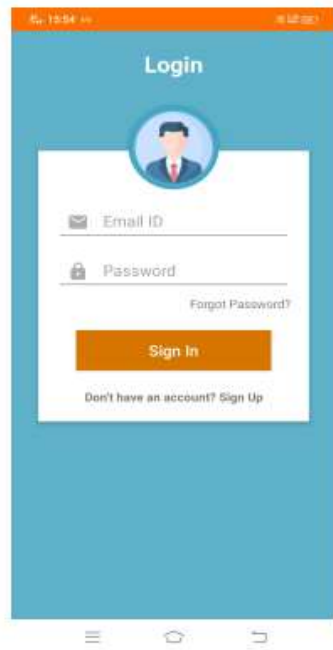


Figure 7.1: Login

Fig-1



Figure 7.2: Splash Screen

Fig-2

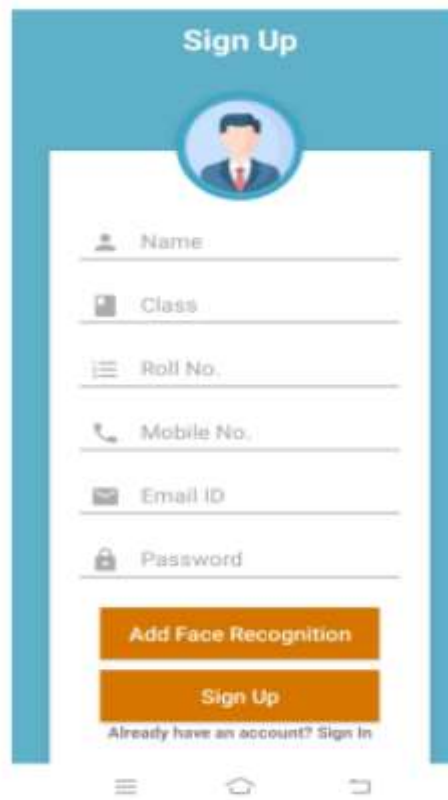


Figure 7.3: Registration

Fig - 3

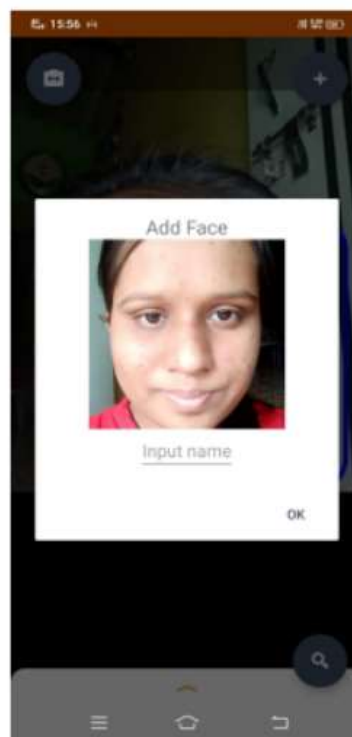


Figure 7.4: Photo Scan

Fig - 4



Figure 7.9: Teacher Panel

Fig - 5**CONCLUSION**

The propose system offers the process of monitoring attend students, it aims to help the teacher in the classroom or laboratories to manage and record students' presence electronically and directly without the need to list on paper so it will save time and effort. The system can analyze the data and displays statistics about the student's absences, printing report about absence percentages and students warnings for the specified period.

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