

## Student Fingerprint Attendance System

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**Abstract** - This paper is all about a system of recording student attendance using fingerprint scanner. Thus will help faculty to monitor student attendance electronically. It can reduce the presence of bogus students. Proxies can be avoided and reduce problems for the faculty. This system is going to overcome the old traditional way of maintaining attendance and replace it with a systematic and electronic way. This is going to be a welcome system for our 21st century students. Index Terms—Fingerprint detection, Fingerprint recognition, Android.

**Key Words:** Fingerprint detection, Fingerprint recognition, Android.

### 1. INTRODUCTION

Presently, attendance of students in most of the institutes is taken by the teachers in old traditional way i.e. using paper registers. There are many disadvantages to this approach such as it is a very old way of maintaining attendance which reduces the life of the data. Also data is not available for analysis because paper based registers are not uploaded to a centralized system. Time taken for data collection reduces the effective lecture time and proxy attendance by students. Fingerprint biometric is a reliable and legally accepted bio-metric technique. Therefore, Fingerprint based attendance system can be used for maintaining data of large number of students in institutes.

#### 1.1 Motivation

Educational institutions still use traditional way i.e. maintaining attendance in the registers. In most of the institutes teachers take attendance using calling out the names or the roll numbers of the students which waste the valuable time of the lecture. This system provides a systematic and effective solution for lecturer to manage the student's attendance record. Eliminates the time consuming of manually sign-in attendance by applied biometric technology.

#### 1.2 Need of the project

- Fingerprint based attendance system can be used in colleges and universities for maintaining attendance record of the students.
- It can also be used for avoiding fake attendance.

#### 1.3. Outcome

- Fingerprint Attendance Management helps to mark the Attendance of the Students as well as of the faculty.
- It'll help you to manage attendance of all the periods and also will be helpful for faculty to get the Defaulters.
- It will also manage the attendance when the faculty is absent.
- It'll save the efforts and also time of the faculty because of Fingerprint Attendance System.
- There is no need for faculty as well as of students to worry about Attendance.
- It is a comprehensive Attendance Management System solution for colleges which help to overcome the challenges in current system.

### 2. PREVIOUS TECHNOLOGIES FOR ATTENDANCE SYSTEM

#### a. Iris based Attendance System:-

It uses the images of iris which will be taken from the camera for the unique identification of the student. An iris recognition system provides an automatic recognition of a single student or employee who has inherent

characteristics possessed by the each person or single person. Iris is present inside the eye which is present inside the protected layers.

**b. Face based Attendance System:-**

A Face Recognition system is the technology capable of authenticating a person from a image or from a video source. There are several methods by which face recognition system works, Actually they work by analyzing selected facial looks from a given image with faces within a database. It is also describes as a Biometric Attendance System based application which will be useful to uniquely identify a person by evaluating patterns based on human's facial composition and shape.

**c. RFID based Attendance System:-**

Radio-frequency identification (RFID) uses electromagnetic fields to automatically analyze and track tags hooked up to the objects. An RFID tag consists of a small radio transponder; a radio receiver and a transmitter. RFID tags are used in several production units.

**d. Fingerprint based Attendance System:-**

A fingerprint is an impression given by the friction ridges of a human finger from which we can take the attendance. This is very useful for the teachers and also the students. By this we can avoid the proxies of the student. This will be useful to get the defaulters of the class

### 3. DIFFERENT COMPONENTS REQUIRED FOR FINGERPRINT ATTENDANCE

- GSM
- Android
- Fingerprint Scanner

**1. GSM:**

GSM stands for Global system for mobile Communication which is used in this system. GSM module is utilized to impart day by day present attendance report of each student for each subject alongside start time and end time of period to the leader of the department.

**Advantages:**

- a. Easy to use.
- b. Portable
- c. Additional function of GSM
- d. Low power consumption

**Disadvantages:**

- High Cost

**2. Android**

An android application is developed through which system can be accessed from any remote location. Every staff has a login and can add student of specific department. Staff can also check the record of any student. [3]

**Advantages:**

- More Secure
- Remote Access (Android Application)
- Modern way
- Avoid proxies.

**Disadvantages:**

- Complex Software
- Application development difficult

### 3. Fingerprint Scanner:

A portable fingerprint scanner is used in the system. Student can be added by the staff by scanning his/her thumb. The fingerprint scanner can be carried anywhere we want. The fingerprint scanner will be assigned to every teacher which will be used for scanning student's fingerprint. [5]

#### Advantages:

- Can be accessed from anywhere
- Easy to use
- Saves Time
- Fast Performance

#### Disadvantages:

- Costly hardware

## 4. PROPOSED WORK

- Fingerprint attendance is very useful because if use the face recognition system then the students can just show the photo of the students on the mobile phone and then and it can just mark the students attendance.
- In Iris scanner the student will need to just go in front of the scanner and stand still for some time then it mark the attendance. This process is very good but it is very time consuming but instead of the iris system the fingerprint attendance is very useful as the student when will get the entry of the class during that lecture only if the fingerprint is scanned then only the student's attendance is marked or else it will not be marked the attendance.

### 4.1 Application Details:-

- A fingerprint attendance app consists of different pages which will be useful to the end users.
- Apps description is as follows :-
- First Page is comprised of Registration Page, where the teacher is going to fill some basic information about themselves, designation, and department to create an account for teacher on the application.
- After registration is completed, username and password of that teacher is allocated. Here teacher is asked to fill a form which includes
  1. includes the branch, in which he/she is working,
  2. Semester and the subject Selection
- e. In the login Page the teacher fills the login details like username and password are compared to the registration details and if the username and password match from the database authentication is granted to the teacher.
- f. Then after logging in you will be sent to the home page where it would consist of different Departments and it would consist of a menu bar in which there would be different options from which you will be delivered to the selected page like Home, Record of students then Login Details, Settings and finally the Log out page
- When you click on the department you want it will redirect you to the page where there will options will be for marking attendance and for adding students. Then when you will click on Mark Attendance it will redirect you to the Page where there will be rows for First year, second year, third year then you can select the particular from which you will be redirected to the page which would have a column which would have names of the students and a button which would scan the fingerprint when you will click it.
- When you will click on 'Add Student' there will be various information of the student to be inserted like Students Name, Roll No, and button to accept the fingerprint then after your work is done you can log out from the application.

## 4.2 App to database Connectivity

- In this application we are going to use the SQL Lite database which is only used in android applications. With this we can store all the fields which will be useful to store all the details of the attendance or can store student names of the different classes or branches. With this database we can create, insert, update or also can delete the student details as per your concern.
- We can use the database to store the information of the students and by that we will be able to find the defaulters of the class. Hence SQLite is very useful in our project

## 5. SYSTEM ARCHITECTURE

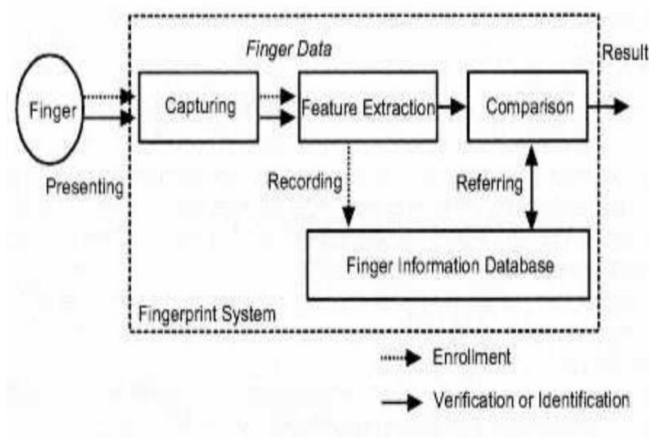


Fig -1: System Architecture

The proposed system comprises of two sections i.e. a portable fingerprint scanner and a mobile device. Fingerprint scanner is a hand-held device that can be carried to the classroom. A Graphical User Interface (GUI) application in the mobile device helps the faculty to manage the device and they can also perform tasks like add students, mark attendance data, etc. Faculty will need to add student's fingerprint by placing their finger, roll number and name of the student for the first time. From the second class onwards, they can mark their attendance. The attendance details can be updated using the GUI application.

## 6. ADVANTAGES

1. Improved way of maintaining attendance.
2. Avoids proxy attendance and errors in time and attendance entries.
3. Attendance can be marked quickly.
4. Saves time because of the application.

## 7. DISADVANTAGES

1. No OS Portability.
2. Cost of Hardware is expensive
3. Faulty Scanner can lead to faulty system
4. Faculty will need the fingerprint machine in every lecture.

## 8. FUTURE SCOPE

We can propose this project to election commission if found that it is working perfectly without any problem and institute is benefiting from it. At the institute level this application will be very useful. This will be very useful to remove the traditional method of the taking the attendance on the paper and maintaining the papers.

## 9. CONCLUSIONS

This Software uses different biometrics technics for taking attendance of the students. In this system attendance is going to be marked using biometric technique i.e. using fingerprint scanner. We have been taking attendance in traditional way i.e. using

paper and pen from decades which takes too much time of lecture. This has been replaced with automated system. This method will verify the student using his/her thumb print which will eliminate the proxy attendance. This software is very useful for saving time and also decreasing amount of work done by the administration.

## REFERENCES

- [1] P. Arunkumar, S. Gnanaselvan, J. Jenon Elison, "Fingerprint Based Students Attendance System using GSM" International Journal of Engineering Research & Technology (IJERT) ISSN: 2278-0181 Published by, www.ijert.org ICONNECT - 2k18 Conference Proceedings
- [2] Dr. B. Chellaprabha, S. Dhilipkumar, P. Ajesh, S. Giridhar "A Fingerprint based Attendance Management System using GSM" International Journal of Engineering Research & Technology (IJERT) ISSN: 2278-0181 Published by, www.ijert.org COCODANTR - 2016 Conference Proceedings
- [3] IRJET, May-2016: - Fingerprint Based Attendance Systems-A Review by Hitesh Walia, Neelu Jain International Research Journal of Engineering and Technology (IRJET) Volume: 03 Issue: 05 | May-2016
- [4] ISSN, December 2016- Study on Fingerprint Based Attendance System by Patel Abhijeet Harshadbhai, Sukhwinder Singh
- [5] Annual IEEE, December 2012: - Fingerprint attendance system for classroom needs by Mohamed Basheer, C.V. Raghu