

Multinomial attendance management system

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Abstract

In this paper we propose a Multinomial attendance management system. This system detect the face, NFC cards and fingerprint recognition of the students when they enter the class room and ensure the presence of the students .In this paper the architecture and algorithms of the system used in each stage are described. The performance of various face and fingerprint recognition are evaluated by considering different real time scenarios .The techniques are proposed to be used in order to handle the threats . When compared to existing attendance monitoring system this system saves time and also helps to generate the attendance report of the students at any time.

Keywords- Face Recognition, Finger Print, RFID, DATA, MAIL

I. INTRODUCTION

In this computer world of automation many scientific promotion and projects have taken place to save employee and labour, increase the accuracy and to enhance our lives. Multinomial Attendance System is the development that has taken place in the place of automation replacing ancient attendance marking activity. Multinomial Attendance Systems are generally image-processing, NFC based and fingerprint scanner. Ancient method of attendance marking is very time sinking and becomes intricate when the strength is more. Automation of Attendance System has cross over ancient method as it preserve time and also can be used for security things. This also helps to prevent illegal or proxy attendance.

The attendance management system working in the stages like biometric, image processing, face recognition, NFC, pre-processing, extraction saved in the database structure. Frontal faces captured first and loaded in the database for the identification and reference for the system. All information, data,

Details of the students are loaded in the cloud for identification of the student by the system.



Fig: 1- Block Diagram

In the existing system raspberry-pi is used for identification. It has some identification dis-advantages [1], other than raspberry-pi the finger print sensor used for identification. Even though finger print sensor is quiet accurate it has some dis-

advantages like sweat fingers [2], In the RFID based system it is easily misuse able by proxy attendance card can breakable[3],image processing less accuracy gollop high processing time[4]. This paper get over these problems.

II. PROPOSED SYSTEM

The proposed Multinomial attendance management system is based on face, fingerprint and RFID recognition algorithm. When a student enters the class room his image is captured, fingerprint is sensed and ID card is tapped in the machine. Face region and fingerprint region is then extracted and pre-processed for further procedures. Only one person can be sensed at a time. A student should do tapping card process, fingerprint and face recognition to prove the concerned student is present. When the student’s face is recognized it is fed for editing data capture by camera while taking the photo to enhance the image. The system algorithm is discussed. The stages in the proposed Multinomial Attendance Management System are as shown in the Figure 1.

A. Image Capture

The Camera is put up at a place from the entrance to capture the frontal images of the students. The quality of the scanned image is the certain or final factor for automatic apperception purposes [5].

1. It is more important to get a well certain fingerprint sensor for high quality sensing even though there are obstacles.
2. Image quality improvement is done by scanning sensor and it get the high quality image in the system for checking
3. Fingerprint sensing gives accurate identification of the student by sensing and no one can get same fingerprint and so it is quite accurate.

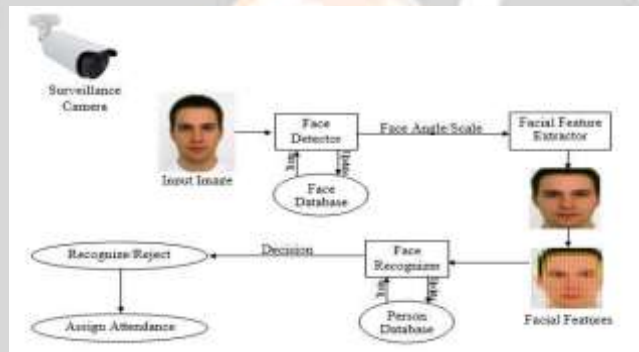


Fig: 2-Image Processing

B. Face and Fingerprint detection

In the context of the term "identification through fingerprint and face images ", Fingerprints are generally take up as human fingerprint images.

- Fingerprint scanning,
- Fingerprint classification
- Fingerprint comparison

Fig: 3-Finger print processing

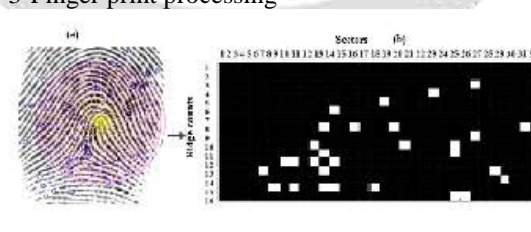


Fig: 4-Thumb matching

To get the face recognition first the face is spotted. The face is checked in the database and checked whether two faces matches each other. For the face recognition, [7] the faces are corroborated one by one using the provided face recognition service.

Frontal faces captured first and loaded in the database for the identification and reference for the system. All information and details of the students are loaded in the cloud for identification of the student by the system.

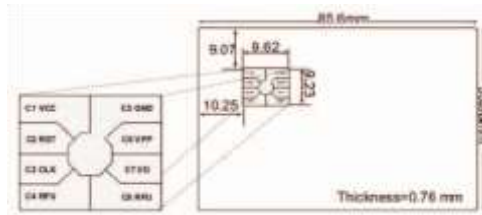


Fig: 5- RFID Card

Reader – a scanning device that is present in the system the antenna to realise the tags transmits signals at a certain frequencies to sense the tags.

Backend database – a depot of information, which is programmed specific to the application. The individual tag is stored individually and the respective details are stored for the respective tag [9].

C. Figures and Tables

The following output, block diagram, recognition images are given below:

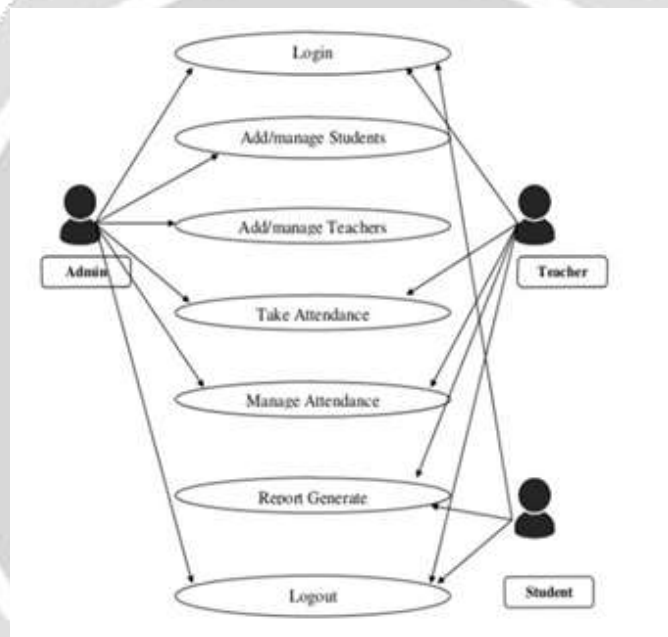


Fig: 6-Data flow Diagram

S. No	Name	In Time	Out Time	Status	Late In	Early Out
1	Ajay	8.12	3.50	Present	-	-
2	Babu	10.02	3.50	present	10.02	-
3	Calvin	-	-	Absent	-	-
4	Durai	8.00	2.15	present	-	2.15

Table no:1-Student Table

III. CONCLUSIONS

The system provides a user-friendly interface to assist the retrieval and management of the student attendance easily .The report are going to be generated automatically at the end of every day in the portable document format (PDF). In this paper, GSM Module is employed to interface students, mentors and parents. When the student is not

regular to the institution and who has low percentage of attendance, the mail will be sent to the mentor as well as student .This method is implemented as smart and secure applications. It lessen the manual error.

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