FINGERPRINT BASED ATTENDANCE SYSTEM USING RASPBERRY PI

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Abstract- Fingerprint authentication is one of the most popular and accurate technology. Our project is a fingerprint attendance system that records the attendance of students based on their fingerprint matches them against the database to mark their attendance. Fingerprint-based attendance system used for ensures that there is a minimal fault in gathering attendance and also reduce cost and time required to manage attendance via paper. It reduces human effort and making the process simpler by using raspberry pi. The fingerprint system is connected to the raspberry pi. The timing is set for the fingerprint sensor for student attendance. The student put into fingerprint the message is sent to the authorized person using through an e-mail.

Keywords: Authentication, Raspberry pi, Biometric sensor, e-mail.

1. INTRODUCTION

Attendance system plays a very important role in an education system. Irregularity of attendance makes the student's percentage decreases. This will finally make a problem of student life. Attendance indicates the presence of a person in school, college and working place. Nowadays attendance percentage is the major issue in the education system. Based on attendance only others can know other's presence. It only indicates the presence and percentage of attendance. To maintain perfect attendance, we go for an automatic mail processing system. In a day to day life, we are using a biometric sensor (Iris sensor, thumbprint sensor, brain mapping sensor) for the attendance or the presence of a person like in or out.

In schools, absent attendance lead to depression and also results in poor quality of education as a result of time lost while being away from school. It could also lead to moral degradation that unruly behaviour. We are using a biometric sensor as a thumbprint sensor.In working place attendance is very important for cooperation and learn the working details. According to the details of the education system if anything happens to the person at the time of working hours that will take it as a crime for that management. It will be cleared by the attendance system. The fingerprint-based attendance management system clearly defines when employees are supposed to show up work, especially with hourly or non-exempt employees. This is important for non-exempt employees, who frequently perform jobs that require a person to be there to serve customers.

To avoid the attendance confuse we are going for biometric sensor using an e-mail. This will reduce the time of humans. A Biometric system can collaborate with human traits and physical things. It compares the fingerprint with already dumped details of fingerprints. Dumped details are stored in a raspberry pi. After completing the attendance part (attendance time), it will send to the authorized person's mail automatically. It will mainly use for the attendance process and reducing the time of cost. So, we are going to build a fingerprint- based attendance system using raspberry pi which makes the process easy and efficient. An Embedded System is a controller with a function of the larger mechanical or electrical system, often with real-time computing constraints. It including hardware,

software, mechanical parts and embedded system is a part of complete device. Modern embedded systems are often based on microcontrollers and microprocessors. In this paper, we are going to discuss on the various sections as follows. Section II describes the Literature survey, section III proposed system, section IV gives us a conclusion and section V comprises of the references used.

2. LITERATURE SURVEY

For a beginning version of the attendance system is taking attendance through paper one class by one. This will lead to the cost of time, personal involvement and leads to confusion of the wrong attendance system.

The enrolment of student fingerprints is another type of attendance system. Enrolling is one-time process. The students' fingerprints are stored in a fingerprint sensor. After the thumb impression, it will compare with the present fingerprint. Then attendance of each student is displayed on LCD and at the same time, it will be updated in the database. It will maintain student records. This process is working through the Wi-Fi server. If a student attendance percentage goes below they will get a message to their mobile through SMS.In the research of the attendance system, raspberry pi is utilized to build an economic biometric system. Raspberry pi is a compactable microcomputer with abilities of PC. By utilizing biometric technology, IoT based biometrics was used. The encrypted biometric information is stored on the cloud and the authentication is created through biometric services as host on cloud.

But it does not give the printout automatically. RFID tag is an electronic tag. It is used to send the printer.RFID is based on the process of attendance system.This system does not take printout automatically. Our biometric sensor compares the digitized fingerprint and present fingerprint. And it will automatically send the document to the mail automatically to take printout. The attendance database will be stored on the server.

3.PROPOSED SYSTEM

Fingerprint authentication is one of the most popular and accurate technology. The fingerprint system is connected to the raspberry pi. The timing is set for fingerprint for student attendance. The student put into fingerprint the message is sent to the authorized person using e-mail.
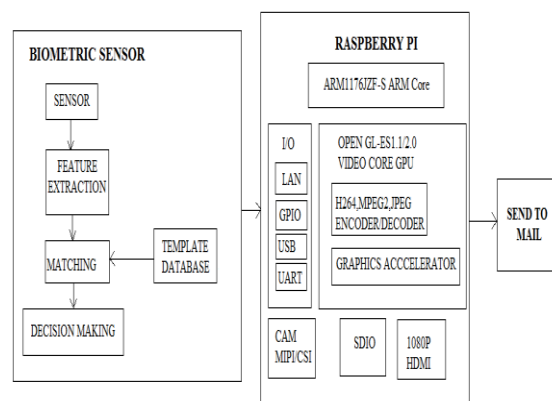
BLOCK DIAGRAM
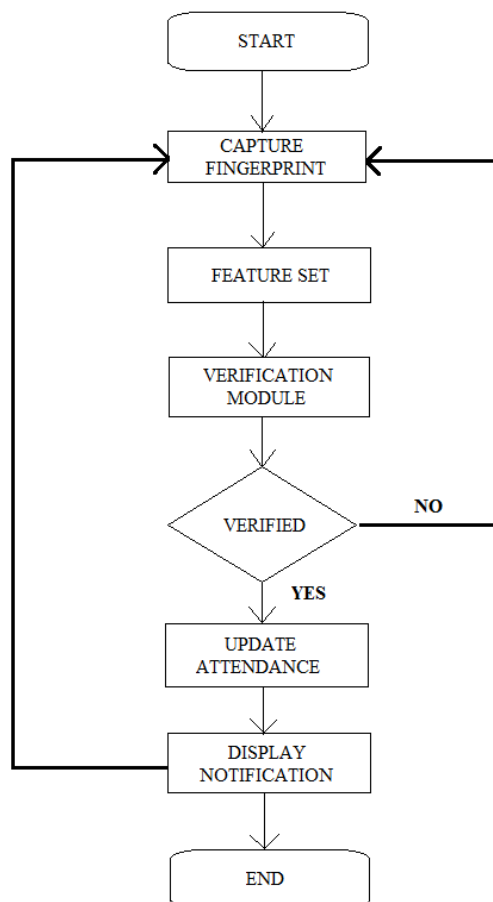

Fig: Block diagram of the proposed system

Raspberry pi contains the segmentation of storage and Bluetooth module. It contains the digitized information of the fingerprint of a person. Biometric sensor is used to digitize the information after thumb printing on the

sensor. Raspberry pi compares the thumbprint information with the present thumbprint. If the time is out for the attendance it considered as late attendance or not accepting the thumbprint. After five minutes, the document will send to the authorized person's e-mail.
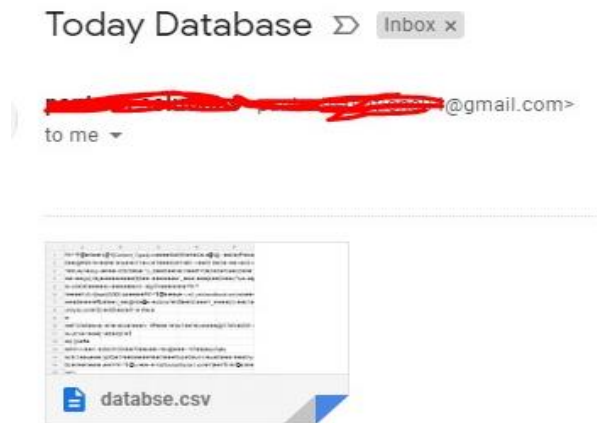

This device may be a security identification and authentication device . It involves the automated method of verifying the attendance of someone. The hardware device contains a biometric sensor which recognises the fingerprint and matches with the database programmed in it.

FLOW CHART:

The LED display shows the name of person, time in, data and day. The collected attendance information are sent to the most computer of the organization and that we can check it as email. The

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raspberry pi is that the microcontroller used which controllers the entire hardware component and python is employed because the software tool. Then after 5 minutes send the mail for authorized person.

CONCLUSION:

In the increased strength in an education system, it is not possible to take attendance manually. So that the automatic mailing method is used. It reduces the time of cost and manpower in an education system. This paper presents a smart solution for the attendance system and it reduces the risk of attendance. This proposed system can be deployed on a domestic scale in an education system and workplaces.

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