Attendance Tracking System Using Face Detection and IoT

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Abstract – *In this paper a system that automates the whole process of taking attendance and maintaining its records in an academic institute. Managing people is a difficult task for most of the organization, and maintaining the attendance record is important factor in people management. When considering academics and institutes, taking the attendance of students on daily basis and maintaining records is a major task. Now some faculties are not taking classes regularly. For this reason an efficient system is designed. This system takes attendance electronically with the help of face detection and all records are saved in IOT. The face detection device is placed at the entrance of the each room. In order to take the attendance, student should enter the class room. On identification student attendance record is updated in IOT and all the linking web site and if faculty does not enter the class in given timeslot it gives the information to the HOD and Principal. By using this system we made perfect attendance tracking of student.*
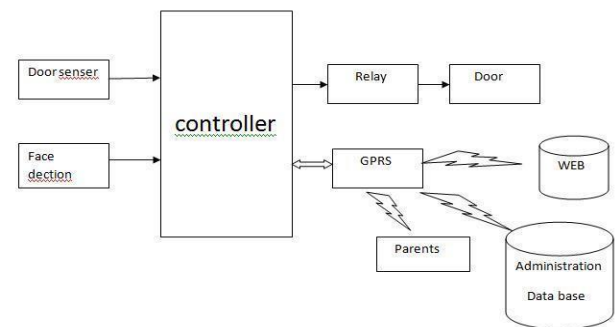
Key Words: *Face detection, controller, GPRS, IOT*

1. INTRODUCTION:

Every academic institute has certain criteria for student regarding their attendance in class. That is why keeping the accurate record of attendance is very important. At present attendance system is usually maintained using paper sheets and the old file system, this approach is being used from a long time. It becomes difficult for the management to regularly update the record and manually calculate the percentage of classes attendance. Keeping these issues in mind, a system is designed to overcome the problem associate with attendance system. Also faculty may skip the classes or delay in entering to class room and doesn't works in assigned time slot. To overcome this problems we are designing the new method of taking attendance of student and faulty presence in the class within assigned time, if the faculty fails to engage the class with in assigned timeslot the system informs the principal and HOD of the branch. In our project we use the face detection system to take the attendance of student automatically, whenever student enters the class or leaves the class. And it can also be used for security purpose, if any unauthorized person enters the class room it gives the signal to HOD or administration. If student fails to attend the class, system automatically updates the college web site and university web site, and sends the SMS to their parents. All the data is send to IOT by GPRS at a time, and this data is stored in IOT, by this the data can be stored permanently.

By using IOT the entire student attendance data is stored permanently in web which we can easily access at any point of time. This automatic system of attendance is helpful to maintain the attendance easily by this student are regular to the class, if the student not attend the classes regularly or if attendance is less than 75% the admission ticket will not generated by university, if garter then 75% the admission ticket will generated. This method of taking attendance is very useful to collage administration.

2. METHODOLOGY:

Fig : Block diagram

This is the new and automatic method of attendance taking, in this system we use the face detection system to identify and take the attendance by using IOT we store the data which can retrieved efficiently in later days.

Firstly all students and faculties details and particular class time slots will be updated on the website for particular class room. The door sensor is used to detect the person who enters the class room. This door sensor sends the signal to controller to capture the image using face detector.
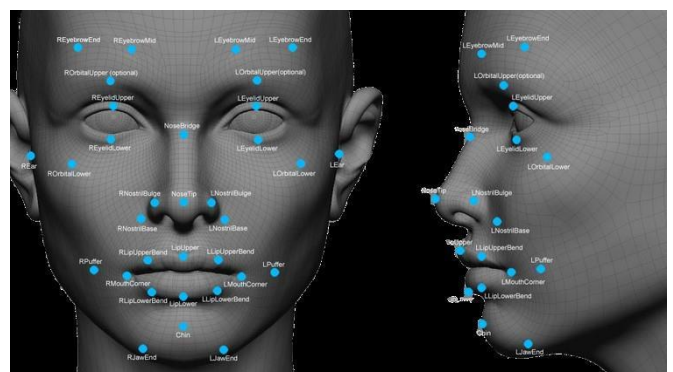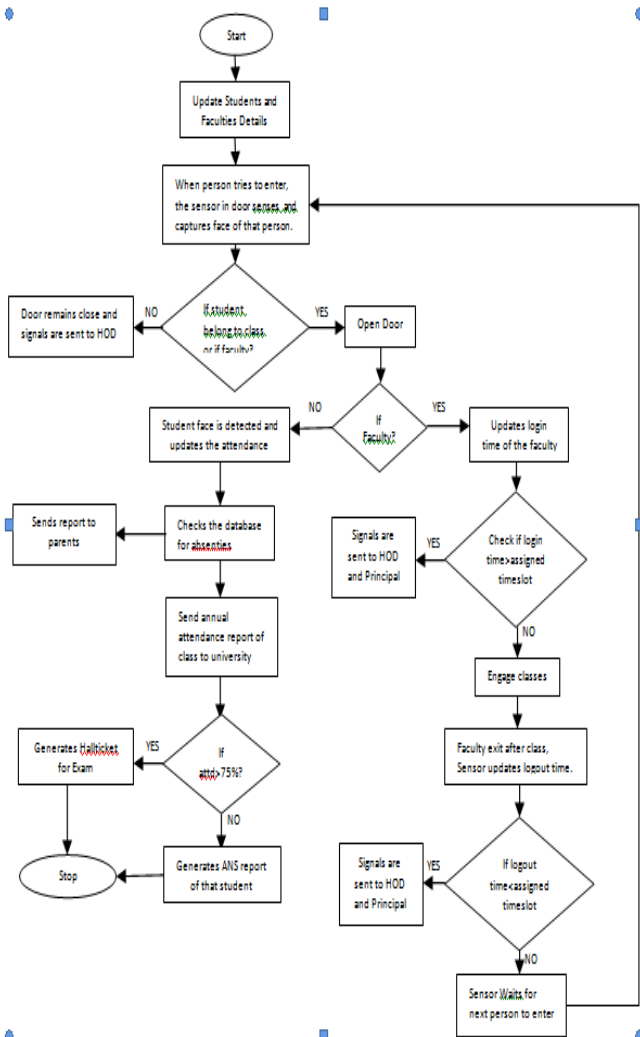

Fig: Face detection

The fig shows how the face is being detected and identified by this method. And the face detector is placed in the door of the class room. The face detector is used to identify whether the person belongs to respective class room or not, if he/she belongs to class the face detects and attendance will be update, if the student fails to attend the class , the system provides the information by updating on the web site and the SMS will sent to their parents. If any unauthorized person enters the class room system sends signal to HOD. If the faculty fails to take the class in the particular assigned time slot, this system sends the signal to the HOD and Principal. If the student's attendance is less than 75% the ANS report will be automatically generated in college and admission ticket will not generated by the university. The relay is used to drive door of the class room. The GPRS is used to send the detail and all the data to web IOT, and college web site and to inform the parents by sending the SMS, and all student attendance data will be daily updated to university, by using this, if student's attendance is greater than 75% admission ticket will be automatically generated by university. So it helps uniquely to identify and maintain the student details.

3. FLOWCHART

Algorithm steps:

Step1: Start.

Step2: Update all the details of students and Faculty.

Step3: Update the time slots of particular class room.

Step4: Assign the time to open or close of class room door

Step5: The door is closed above the timings.

Step6: Entry, face detection.

Step7: If student of that class enters, the attendance of that student will be updated. If unauthorized person tries to enter, the door keeps shut and signal are sent to HOD.

Step8: If Faculty fails to enter the class within assigned timeslot detector sends signal to HOD.

Step9: If student fails to attend the class, update the website administrator and sends SMS to parents.

Step10: If the student's attendance is greater than 75%, admission ticket will be generated automatically by University.

Step11: If the student's attendance is less than 75%, the ANS report is automatically generated by College and sends the SMS to parents.

4: Date Stored In Web (IOT).

SL\NO	Reg Number	Name	Number of class										Total Number of class attend	Percentage %
			1	2	3	4	5	6	7	8	9	10		
1	563CS16001	AKSHA.A	1	1	1	2	3	4	5	6	7	8	8	80
2	563CS16002	ANADHA.C	1	2	3	4	5	6	7	8	9	9	9	90
3	563CS16003	BINDHU.H	1	2	3	3	3	4	5	5	6	6	6	60
4	563CS16004	CHITRA.K	1	2	3	4	4	4	5	5	6	6	6	60
5	563CS16005	CHETHAN	1	2	3	4	4	4	5	5	6	7	7	70
6	563CS16006	KISHOR C	1	2	3	4	5	6	7	7	7	8	8	80
7	563CS16007	VINAY	1	2	3	4	5	6	7	8	9	10	10	100
8	563CS16008	VINAY M T	1	2	3	4	4	4	4	4	5	5	5	50

Chart -1: **Student attendance data sheet**

The Internet of Things (IOT) is the scenario in which object, animals or people are provided with unique identifiers, and the ability to transfer data over a network without requiring human to human or human to computer interaction. IOT revolves around increased machine to machine (M2M) communication and encompasses wireless embedded sensors and actuators that assist users in monitoring and controlling devices remotely and efficiently. IOT is used to store the data permanently. In this we used to store the student attendance data sheet. By using the IOT we can see the attendance record any place at any time by using login ID and password. This data is highly secured.
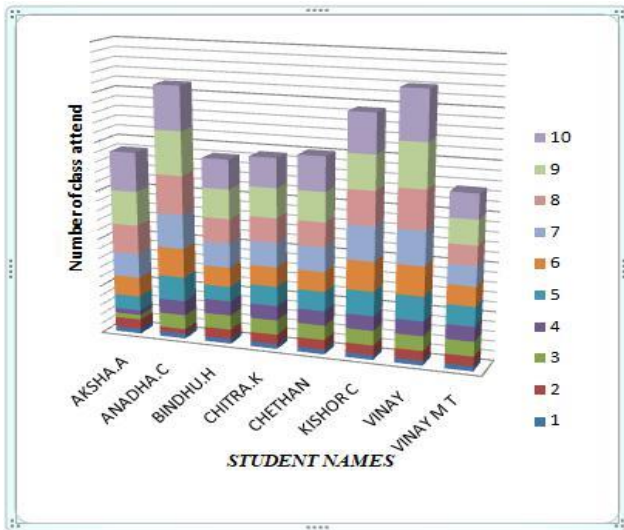
RESULT.

Table:

ANS report	
If < 75% of attends	Admission ticket not generated
f > 75% of attends	Admission ticket generated

The graph shows students attendance in variation of each student and table shows the student attendance ANS limit, if the student attends greater than 75% of class than student will eligible to attend the exam and admission ticket will generated, if student fails to attain 75% of attendance then that student is not eligible to attend the exam and ANS report will be generated.

5. CONCLUSION

It can be concluded from the above discussion that a reliable, secure, fast and efficient system has been developed by replacing a manual and unreliable system. Result has shown that this system can be implemented in a academic institutes for better result regarding the management of attendance. This system will save the time, reduce the amount of work the administration has to do and will replace the stationery material with electronic apparatus. Hence a system with expected result has been developed but there is still some room for improvement.

ACKNOWLEDGEMENT

REFERENCES

1. Tabassam nawaz ,Saim pervaiz "Development of attendance monitoring system using Fingerprint Identification" IJCSNS Vol.9 No.5, May 2009
2. D. maltioni, D. Maio, A.K. Jain, S. Prabhaker, "Hand of Fingerprint recognition", Springer New York, 2003
3. Anil k. Jain, Arun Ross and Salil prabhskar. "An introduction to biometric recognition", Circuot and system for video Technology, IEEE Transation on Volume 14,Issue 1, Jan. 2004

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