Smart Attendance Monitoring System using Cloud Computing

S.Delfin, Chinta Rohith Reddy, Akshat Sharma, Ria Nair

Abstract: If we talk about the current scenario of our education system, we have a lot of technologies for attendance system, but now also some of theschools, colleges are following the traditional attendance system. now also in some institutions and universities, they do the work manually. Lecturers took the attendance and update in the database manually, but there are many tools through which we can overcome this and save a lot of time. RFID can be used and if we combine it with IoT(Internet of Things) then the attendance can be recorded automatically. We are using the cloud for storage so that we can get better performance. Since we are using cloud and IoT we can access it anywhere and anytime which will provide us the better proficiency and flexibility.

Keyword:- RFID, cloud computing, biometrics, smart classrooms, smart attendance system.

I. INTRODUCTION

Safety of the child is the main concern for today's parents because of the increase in crime rate against the children in our country. Almost one lakh of children are missing in our country while they are travelling to go to school or from school to their home. Most of them are kidnapped for ransom. So, for the safety of their students the institutions, 'Smart Attendance Monitoring System' is used. We can use RFID(Radio frequency identification) for this process as it uses electromagnetic fields which automatically identifies and tracks the tags attached to the students. The RFID is placed in the entrance of each and every classroom which identify the images of the students who enters into the class. There are cameras also which are placed in different angles in the class room which take images and send the data to the RFID which matches and compares the image with the reference image. With the use of camera we can also monitor the actions of students inside the class and can make the classroom a smart classroom. It can reduce the burden of teachers because they do not have to manually enter the attendance in the ERP, the data will automatically be saved and the absent messages will be sent to the parents.

II. LITERATURE SURVEY

"Web Student Information Management", S.R.Bharamagoudar ., this paper was taken into reference to improve the existing system. The proposed system can be controlled remotely and provides accurate information. All the year old information saved, can be accessed anytime anywhere. The purpose is to design a system with proper management and accessibility. That in turn should improve attendance system."Attendance checking System", G.Gangagowri et al., this system was referenced for SMS software. This software is used to send SMS automatically and to respective home numbers. This system can store there cord about the students absent or present details. It is aconvenient way as well as less efforts are required than the manual entering.

III. SYSTEM DESIGN

Attendance management system is a necessary tool for taking attendance in any environment where attendance is critical. However, most of the existing approaches are time consuming, it requires manual work from the users. This research is aimed at developing a less intrusive, cost effective and more efficient automated student attendance management system using face recognition that leverages on cloud computing camera mounted in front of a classroom, to acquire images of the entire class. It detects the faces in the image and compares it with the enrolled faces in the database. On identification of a registered face on the acquired image collections, the attendance register is marked as present otherwise absent.

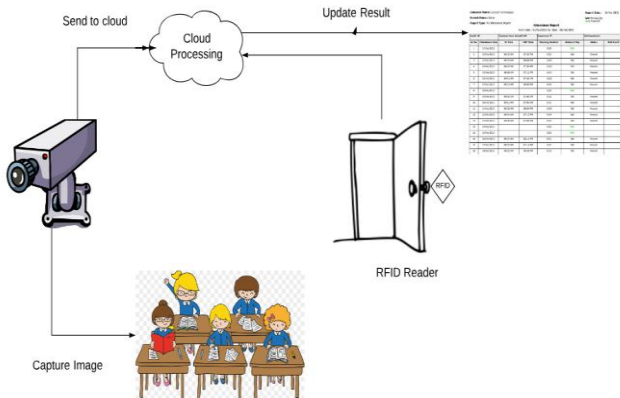**A.Algorithm for Image Comparison**

1. Calculate the signature of the image which has to be compared.

2. Get the all other previously captured files in the component list with whom we have to compare the reference image.

3. For each image calculate the signature.

4. Calculate the difference between the previously captured image signature with the reference image signature.

5. Return difference.

IV. WORKING PRINCIPLE

In this system we get student's information from the captured image which is captured from multiple angles, thus getting more details.

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From this further validation has to be done. Student's details include name and registration number. Here registration number acts as the Unique Identity Number. These details are uploaded to the cloud. Now RFID (Radio Frequency Identification) reader comes into play. RFID reader compares the already stored images to the reference image. The unique identity number will be compared from the database If unique identity number and the reference image matches with the student details that is stored in database then that specific register number is marked present else absent which can be calculated as the difference. The architecture diagram for the proposed method is given below:

This proposed system can solve many problems. As in all colleges it is mandatory to bring ID cards, one can easily get the register number and can bypass face scan by a picture of the respective person. This system solves this by putting multiple cameras to get multiple angles so 2D picture can not bypass it. Then implementing this we can propose many rules like if anyone tries to bypass it a message or mail will be sent to the respective authority and actions will be taken accordingly. Input: Video consisting of multiple framesOutput: Difference between the frames

V.   RESULT

When students are entering into their respective classes, the cameras which are placed in the walls of the classroom take 3D pictures of the student, so that proxies can be avoided. The image captured by the camera is then sent to the RFID reader which scans the chip inside the unique ID cards of the student and will update the ERP and in the database as well. It makes the work more easy and efficient. Once the database and ERP are updated message is sent to the parents of students who are absent to that period or for that class. Hence, it is a good practice for the development of our country and it will be a turning point for the institutions towards a better, innovative and smart classrooms. And this attendance monitoring system is very important for the safety of each and every child, as many students are getting missing while going to school or coming from school. So this will inform the parents of those students who didn't came to class. And we can further make many changes to the system and can bring many updates in the future.

VI.   CONCLUSION

This system will overcome many limitations incorporatedin attendance system,it saves a great amount of time and reduces errors which may occur duringattendance calculation.The system that has been developed is fully responsive which can be used in mobile, tablets anddifferent operating systems. Some other benefits are,

1. Automated and web-based for easy accessibility.

2.It is a dynamic and flexible system.

3. It excludes paperwork and the possibility of making mistakes while using paper is less.

4. It is very user friendly and handy.

5. The records of current and previous can be available in prompt and an immediate

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AUTHORS PROFILE

Ms.S.Delfin is an Assistant Professor in Department of CSE,SRMIST, Ramapuram. She hs attended various workshops, Seminars, Presentations and has been an Academic topper. Her research interests are in Data Structures and Wireless sensor networks.

Akshat Sharma is an Undergraduate Scholar pursuing Computer Science & Engineering from SRM Institute of Science and Technology.He is working under the guidance of Ms.S.Delfin.

Ria Nairis an Undergraduate Scholar pursuing Computer Science & Engineering from SRM Institute of Science and Technology.She is working under the guidance of Ms.S.Delfin.

Chinta Rohith Reddyis an Undergraduate Scholar pursuing Computer Science & Engineering from SRM Institute of Science and Technology.He is working under the guidance of Ms.S.Delfin.

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