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SMART ATTENDANCE SYSTEM USING VOICE RECOGNITION

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ABSTRACT:

As seen from earlier conventional method the attendance for students /employees in educational institutes/office follow the manual way of taking the attendance by calling perspective name or permanent ID number.This leads to time consumption and students cheat by saying proxy of the other student's attendance.It is risky process to maintain a daily manual record for employees about their status in office. In order to tackle these disadvantages there is an alternative solution proposed by the project is about biometric technology which is an authentication technique that recognizes features in human beings include voice, face, signature, finger print, DNA, etc. The project introduces the attendance system based on voice recognition that can be used to record the attendance of students & employees because each person has unique characteristic in voice with frequency.This unique character can be recognized and analyzed to store in internal database.The python application would be developed to store the internal database in firebase. The voice recognizer compares the voice with the voice template stored in internal database through microphone and gives the output indication depends upon the accurate threshold percentage whether the voice is matched to that person or not.If the threshold percentage is accurate it will indicate the display system that the attendance is logged and automatically updates Excel attendence sheet or MS Office .

INTRODUCTION

Along with the growing number of smartphone users, the number of applications available on smartphones also increased. But there has been no application for attendance system on a smartphone that is easy to use and integrated with the management attendance system tool controlled by the personnel department. On the other hand, there are many disadvantage in attendance systems currently available such as a long queuing in front of the attendance machine at the time come to work and after work, monitoring employees who work out side of office, the organization has to spend on the

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device as well as badges, and difficult to maintain and repair the devices.

Some companies also need to monitor their employee who working outside the office or out of town. In order to calculate the employee's salary who work outside the office, the personnel and finance department need to know how many hours the employee come to work. The problem is there is no tool that can monitor working hour of employee outside the office. Most of the time the employee just feel the sheet of paper to write down name and time by their self without any control or monitor. Therefore an automatic attendance system using voice recognition and fingerprint on smartphone would provide the new solution.

In this paper, we developed attendance system that integrated with system payroll so that overtime can be calculated automatically, while also providing feature to monitoring employee who working out of office. Our attendance system also can generate reports and monitor the employee who late and leave work early. We developed an application that can be installed on smartphone for client and an application that can be installed on PC for admin. The information of date, time, unique number of android system, smartphone number, and GPS (Global Position System) coordinate will be sent by smart phone to database server along with the fingerprint of employee. The employee must login to their account before sending the information. The process of login or authentication process can be done either by voice recognition or by fingerprint.

We used minutiae and texture features algorithm for matching the fingerprint in authentication process [1]. The minutiae features are ridge ending, bifurcation, and short ridge. The number of these minutiae features are unique for each person. In fingerprint matching algorithm for authentication process, we compared the number of minutiae features of employee. We took the fingerprints of employee who participate in our research and we save the number of minutiae features in a server as a template

At this time not all smartphones have the fingerprint sensor, therefore we also developed voice recognition technique for authentication process. The algorithm for matching voice is random alphabet. We record 26 alphabet characters for every person who has participated as a template and we save them in server. The five characters will be generated randomly at the time the employee do the authentication process. They have to read clearly the five characters on their smartphone. If the frequency match with the template then the employee pass authentication process.

Literature Survey:

1 Fingerprint Matching Using Minuate and Texture. International Conference on Image Processing The advent of solid-state fingerprint sensors presents a fresh challenge to traditional fingerprint matching algorithms. These sensors

provide a small contact area (≈0.6"×0.6") for the fingertip and, therefore, sense only a limited portion of the fingerprint. Thus multiple impressions of the same fingerprint may have only a small region of overlap. Minutiae-based matching algorithms, which consider ridge activity only in the vicinity of minutiae points, are not likely to perform well on these images due to the insufficient number of corresponding points in the input and template images. We present a hybrid matching algorithm that uses both minutiae (point) information and texture (region) information for matching the fingerprints. Results obtained on the MSU-VERIDICOM database shows that a combination of the texture-based and minutiae-based matching scores leads to a substantial improvement in the overall matching performance

2 An identity authentication system using fingerprints, Fingerprint verification is an important biometric technique for personal identification. We describe the design and implementation of a prototype automatic identity-authentication system that uses fingerprints to authenticate the identity of an individual. We have developed an improved minutiae-extraction algorithm that is faster and more accurate than our earlier algorithm (1995). An alignment-based minutiae-matching algorithm has been proposed. This algorithm is capable of finding the correspondences between input minutiae and the stored template without resorting to exhaustive search and has the ability to compensate adaptively for the nonlinear deformations and inexact transformations between an input and a template. To establish an objective assessment of our system, both the Michigan State University and the National Institute of Standards and Technology NIST 9 fingerprint data bases have been used to estimate the performance numbers. The experimental results reveal that our system can achieve a good performance on these data bases. We also have demonstrated that our system satisfies the response-time requirement. A complete authentication procedure, on average, takes about 1.4 seconds on a Sun ULTRA I workstation (it is expected to run as fast or faster on a 200 HMz Pentium).

3 Development of Attendance Management System using Biometrics, lately, there has been a high level of impersonation experienced on a daily basis in private and public sectors. Biometrics is anything and everything that can be measured in a human being. Fingerprints are a form of biometrics identification which is unique and does not change in one's entire lifetime. This paper presents an enhanced attendance management system using fingerprint system in a university environment. It was developed using the waterfall methodology. This system consists of two procedures; enrolment and identification. During the enrollment, the fingerprint of a person is captured and its unique features extracted and stored in the database along with the user's data as template for the subject. During identification, the fingerprint of

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the person is again captured and the extracted feature is compared with the template in the database in a ratio 1: N-templates, to identify a match (a user) before attendance is made. The enhanced attendance management system was implemented with Java programming language on a Net Beans IDE framework. The identification mode operates each day of attendance, the fingerprint image is extracted from an individual and the system conducts a one-to-many comparison to establish an individual identity (or fails if the subject is not enrolled in the system database) with the subject having to claim an identity. The results of the system show that the proposed method is secured, reliable, and capable of averting impersonation.

4 An Attendance Monitoring System Using Biometrics Authentication, In this paper we propose a new student attendance system based on biometric authentication protocol. This system is basically using the face detection and the recognition protocols to facilitate checking students' attendance in the classroom. In the proposed system, the classroom's camera is capturing the students' photo, directly the face detection and recognition processes will be implemented to produce the instructor attendance report. Actually, this system is more efficient than others student attendance methods since the detection and the recognition are considered to be the best and fastest method for biometric attendance system. Regarding to the students and instructor sides, the system is working without any preparation and with no more effort.

IMPLEMENTATION

1.Admin Module:

In this project admin can login to application by using username 'admin' and password 'admin' and then after login, admin can add new employees/student details and will record their voice and store in MYSQL database, admin can view all users attendence

2.USERS Module:

Can come to application and then record their voice and then application will take their voice and then predict the employee/students names and mark their attendence

Home Page

Admin Page

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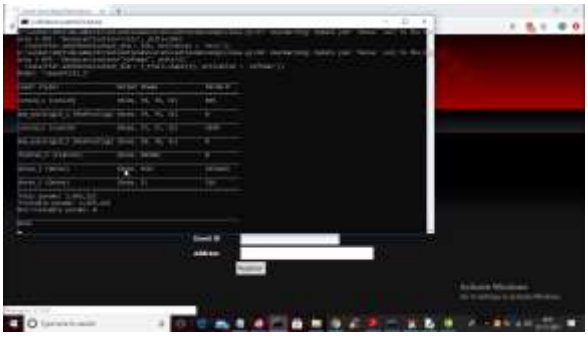
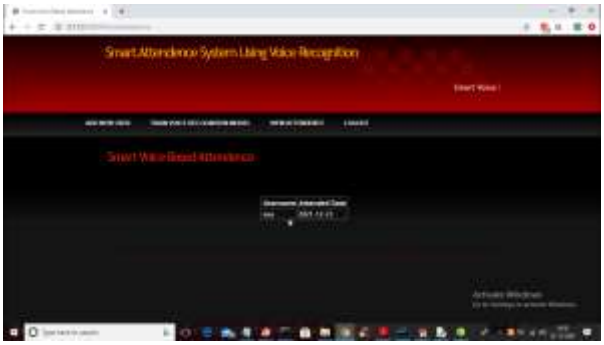
New User

Trainign mOdel



User

Adding User



CONCLUSION

The result expected from the proposed system promises an efficient, convenient

and time-saving alternative for the students and teachers of schools, colleges etc. The proposed system is to reduce the effort for attendance, to save the time of taking attendance, to provide security for attendance. For these the system features and required research can be improved.

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