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Employee Monitoring and Management System Using GPS and Android

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Abstract - *With the increase in growth of android applications in the market the people get its direct impression on their lives. The aim of this research Employee tracking and management system using android based mobile is, to automatically process the employee's activity outside the office premises by using Employee's office cell phone and also improvise the organizational growth of the company. Through this paper, we also discuss about the development and Implementation of admin application, employee application and Centralized server for vigil records of company employee's using android technology. This system is helpful in providing dynamic database utility. The role of centralized server is to provide data or information the proposed system. The proposed android application in smart phone consists of all information about the employee phone uses like their all Employee SMS history, Employee call Logs, Employee Locations and battery percentage. All communication between the Employee phone and the admin is done through web network technology. This proposed application is quite user-friendly as it contributes in giving accurate digits in managing employees of the company by saving time, reducing manager efforts; avoids the unnecessary use of company phones which provides to the Employee for their official work during working hours. The proposed android application connects the centralized server with employee phones. The main idea of our paper is to provide an aid to Managers to navigate their all company Employees through mobile phones and know the employee behavior.*

Key Words: **Smart phone, Android application, GPS, dynamic database.**

1.INTRODUCTION

Employee tracking system adopts a smart phone network. Based on the previous experiences such as inconsistency in the data and loss of data, we are implementing a new generation Employee tracking system called as proposed system. This proposed system has the five requirements respectively. For Easy to implement and add no. of functions, ability to manage many employees efficiently, tracking of employee easily for checking either who is present approved area or unapproved area. Very secured and Low cost also. To satisfy the above all requirements, the proposed employee monitoring system adopts 3G communication network function between Android mobile terminals, and collects user's information using Global positioning system(GPS). In additional we are use one new module such as know the employee behavioral and also use cloud technique for storing and retrieving related employee details such as incoming call, outgoing calls, and text message. The proposed employee monitoring system consists of telephony manager for getting the information about the employee. In this application, the terminals which is at employee side is Android mobile and

the centralized server which is used to stores employee tracking Information. The Collected all information in this system contain the unauthorized use of websites, data uses in MBs, position of employee and time information of android mobile terminals. When the employee crosses the approved area of the company then an immediate alert message will be sent to the manager's mobile phone in the form of text format. By using this system, it is possible for the manager in organization to calculate the behavioral of the employee by using K-means clustering algorithm which can help for improving the organizational growth.

2. RELATED WORK

Several techniques and methods have been carried out effectively to monitor employee attendance. Lawson et al. proposed a cost-effective computer based embedded attendance management system by which authority electrically monitors the attendance for verification using an improvised electronic card. These cards contain necessary information of an individual. These are inserted in an electronic machine which will record the time and other information to a server system. Password based authentication and verification of attendance monitoring system of any individuals has also been carried out in the literature. A system that applies user id and password of a person for authentication was designed and implemented by Cheng et al. However, an issue with these electronic cards or password based system allows for imposture since cards or passwords can be shared or someone can ask another person to insert his/her card or password. This problem can be addressed by using biometric recognition system which includes finger print or iris recognition. A system was proposed and implemented by authors fingerprints to identify and calculate the attendance and generate the reports after a fixed time duration. Individuals simply put their fingerprints on the fingerprint reader which scans the finger print and verifies that person. M. Smaili et al solved the problem by proposing a wireless attendance management system where iris of an individual is used for authentication. It is also like fingerprint where no two people can have the same eyes. A scanner will scan the eyes and automatically log the person in. Unlike fingerprint, iris is more preserved from the external environment. But both the fingerprint and iris recognition based approach needs some extra devices or scanner which can be connected to the server computation system. In our work, we addressed the problem utilizing smartphones internet connectivity for monitoring the presence or attendance of an individual. Smartphone based monitoring system reduces the surplus cost of additional scanning device because now a day almost each employee possesses a smartphone of his own. An area is fixed for every employee when an employee enters or exits that area, that time stamp is saved and the time duration of any particular employee residing within its area is calculated by the system.

3. PROPOSED SYSTEM ARCHITECTURE

The problem which is occurred in the existing that are overcome in proposed system. In this application, we are implemented some functionality by using android phone for manager to handling of the company employee to avoid the misuse of their office phone. In this tracking system also uses one important part such as telephony manager which is used to track all incoming, outgoing calls and text messages multimedia messages etc. The Android mobile terminal in the hand of employee has internet data pack on which app works effectively and transfers data between two mobile terminals. So, the manager can track the employee using the app depending on the internet speed data will be received by the admin. This system is very secured and reliable as compared to the existing system because of the good internet service provided and also provides web service security to this application. The employee tracking system use centralized server for retrieving of the detailed information of the employee phones uses like for the incoming and outgoing

calls the centralized server stores its call date, time and duration. For messages stores its date and time and the actual content. So, whenever manager wants detailed information about the related employee he will login on to the app which will then get connected to the centralized sever, it is very beneficial for the organization in case of business improvement purpose, because if any employee will misuse the company phone it will immediately inform to manager in the form of text and manager will take appropriate action on that employee. In this system by using latitudinal and longitudinal values, GPS admin can know the location of person or mobile. Signals which are obtained from the let/long values from satellite send data to the earth giving the exact location of the employee.

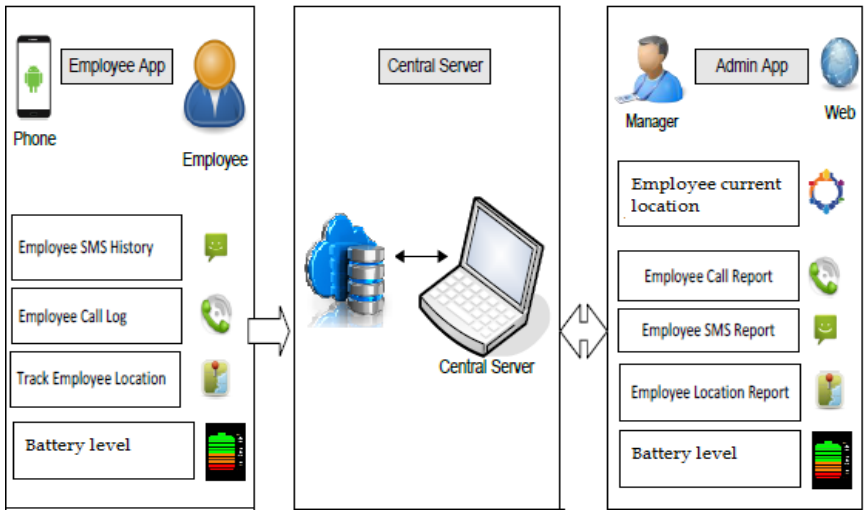

Fig 1. System Architecture

4. SYSTEM DESIGN

The application can use Android based cell phones for running the implemented software. In this system, we can use different modules, and main two apps are employee app and admin app. And whole employee phone uses data will be stored in centralized server app. Mobile device which is with Employee and admin should be an Android device as it is an android app. For detailed data, it can be stored in the centralized server like the details of incoming call, text and multimedia messages and the timely location update of their Employee. Managers may later login to view the details of their Employee. When a mobile terminal communicates with another mobile terminal, it is necessary to establish pairing between two mobile terminals before their communication occurs between two terminals. When the employee mobile enters the blackout area i.e. area with no cellular towers no internet service in such situation admin will not receive any employee information only he will get is the info which is successfully in server. Data stored is secured.

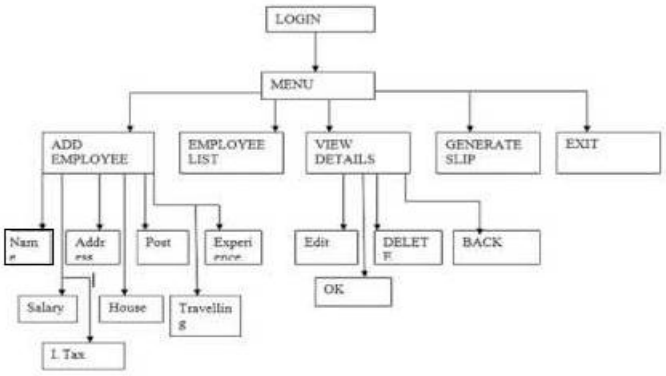

Fig. 2 System Design

4.1 USER TABLE

4.1.1. This table is made for the use of normal employee which works in the organization.

4.1.2. In the side of user consist of android phone contain call log, SMS, web browser features.

4.1.3. They will be enabled with the internet service.

4.2 MANAGER'S TABLE

4.2.1 Admin's cell or desktops are especially for the use of the employee monitoring.

4.2.2 The manager should be able to control the function of whole organization from a single app.

4.2.3 He can access any employee's phone and uses the Information and should be able to take decision on that.

4.3 SUB MODULES

4.3.1. Call Logs

Employees should not use their company phone for personal use, if they call to an unapproved number from employee list; it will be logged on to server. Calls Logs should show the details of incoming and outgoing calls history from employee's phone like date, time, and phone number.

4.3.2 Message History

Manager should get the message history from employee cell phone like text messages (inbox/sent/draft) and multimedia message with date and time.

4.3.3 Battery Level

The module should show the battery level of the employee's mobile phone. So, that employee can't cheat by reasoning battery level was down.

4.3.4 Track Employee Location

Employee location is obtained by using the GPS. After specific number of kilometers' employee's route can be traced and also his current location can be obtained.

4.3.5 Know the employee Behavioral

After getting every detail of employee as his messages, call logs, location, route travelled admin can come to know that, is employee cheating or not.

5. SYSTEM SPECIFICATION

The technologies which are used to implement the system are:

1. The Android mobile terminal is Google Dev. Phone 1.

2. The operating system for the terminal is Android, we develop mobile ad hoc network

3. Java programming language and android SDK, JDK is used to develop the software.

4. JSP/SERVLET is used for Database Access from the central server.

5. MY SQL it is a light weight Database which is going to be used for database access from the server.

6. CONCLUSION

In this paper, we have implemented the new generation employee monitoring system and system features to meet the organization requirements. By using this system, it is possible for the manager to track an employee in the organization and calculate the behavior of the employee. In this application, it is also possible for the manager to know all the incoming calls, outgoing calls and text messages sent by an unknown person to the employee. Using telephony manager technique, the proposed employee monitoring

system can get detailed information about mobility of employee by adjusting network.

7. REFERENCES

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