

Android Attendances System Using Wifi

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Abstract— In the recent years, many companies and organizations are using traditional biometric attendance system for taking attendance of it's workers or employees. This will keep track of employee's attendance i.e he has logged into the office or not but it will not keep track of whether the employee is present at the workplace or not. In this modern era, it is seen that after giving attendance many employees fly away from their workplace to escape from doing work. This paper focuses on Android Attendance system where an Android device will be used instead of Biometric Attendance System. Here, the entire workplace will be a wifi zone. An android application will be developed in java and android and installed into employee mobile phone which connects to wifi whenever the employee enters the wifi zone. So connection or disconnection of mobile phone to the wifi will determine whether the employee is present in the workplace or not.

Keywords—Server,wifi,android attendances,admin,mobile phone

I. INTRODUCTION

In this digital era,biometric attendance system has become more efficient to measure employees attendance.It measures employees physical or biological feature such as your finger print for identity verification and allows you to login into the office without manually entering your login details in the register which is time consuming.Biometrics provide added security.Biometric attendance system use advanced technology to scan fingerprints. With a biometric attendance system you can prevent time theft and attendance abuse. The entrance and exit door of the office or organization are set up with fingerprint sensors to record each employee login details.The disadvantage of Biometric Attendance system is an employee uses his own fingerprint to open the door for his colleague to leave.So, the fingerprint sensor can't ensure the physical presence of an employee in the workplace.To reduce this misuse of Biometric attendance system an android application is developed in java which can track the presence of employee.Nowadays mobile phones has become a part of human body and we cannot imagine our lives without it.so,we have developed an andriod application which should be installed in the employee's mobile phone.The mobile phone alone with an android application cannot detect the physical presence of employee in the work place.So,we have made the entire workplace into a wifi zone.whenever the employee enters the workplace he should connect his mobile to that specific wifi and then login into the app using his userid,password and fingerprint .These details are cross-checked with the database. If details entered by the employee and the details present in the database are same then the employee has successfully logged in.The

connection or disconnection of the android device to the wifi will determine whether the employee is present in the workplace or not.

The rest of the paper is organized as follows. The introduction of the paper is present in Section I.The Related work of our work is presented in Section II. In Section III, we will be discussing the methodology of our work and In section VI and V we will discuss the existing system and proposed system respectively.The Working model along with use case diagrams are briefly explained in section VI.Section VII concludes research work with future directions.

II. RELATED WORK

The traditional Biometric Attendance system are not 100% accurate. D. K. Sarker, N. I. Hossain, and I. A. Jamil[1] designed and implemented smart attendance system in multiple steps authentication.In most of the schools and colleges ,the teachers take attendance by calling the name of the student or his roll number.With increase in the number of students every year,this traditional attendance system has become time-consuming and some of the students may give proxy whole taking the attendance.To overcome all these problems they developed a smart attendance system using paper radio frequency identification,biometric fingerprint sensor and password based technologies.An application is developed in C# language to monitor the attendance system. M.K.Yeop,M.Z.A.Abdul Aziz,M.S.R.Mohd Shah,M.F.Abd Kadir[2]developed a smart attendance system by using information that is present in the RFID database for taking attendance.Both the database and smart attendance system

must be integrated with RFID database. The appropriate data from RFID database should be fetched for the execution of attendance taking process. Siti Aisah Mohd Noor, Norliza Zaini, Mohd Fuad Abdul Latip Nabilah Hamzah [3] developed an android application for taking attendance. The android app must be installed to download the list of students from the web server. The device in which the app is installed acts like a scanner to scan the students id cards to verify their presence. The sensor in the device will scan the barcode on the student id card and updates the students attendance list and uploads it on online database. Shota Noguchi, Michitoshi Niibori, Erjing Zhou, Masaru Kamada [4] developed an attendance management system that scans id cards of the students present in the class. To avoid students illegal attendance from outside the class room we deploy a Bluetooth Low Energy (BLE) device for registration within the classroom.

III. METHODOLOGY

- Android Technology
- Fingerprint comparison
- MVC Architecture for web application
- Mobile Wi-Fi

IV. EXISTING SYSTEM

In existing system focused on the attendance system using biometric fingerprint authentication. It is a micro-controller based prototype which used fingerprint sensor to take the fingerprint to identify the employee. In this system security is very less.

A. Disadvantages of Existing System:

- Centralized system
- Uses Fingerprint but it is not tracking the employee whether he is in campus or not.
- Micro control based system and consumes more time to compare fingerprint if number of employees are large.
- Less Efficient
- Security is more

V. DESIGN OF THE PROPOSED SYSTEM

There are four modules in the proposed system:

1. **Admin web application:** admin can login using user id and password. Admin can be able to add employee details with their fingerprint.
2. **Extracting Features:** When admin will add fingerprint it will extract the features from images and it will store in to the database.

3. **Employee Android Application:** Employee can login using there emp_id.
4. **Web server:** From android mobile employee has to upload there fingerprint, via web server it will check into database fingerprint is matching or not.

Hardware & Software Requirements:

A. Hardware Requirements:

- System : Pentium IV 2.4 GHz.
- Hard Disk : 500 GB.
- Ram : 4 GB

Any desktop / Laptop system with above configuration or higher level

B. Software Requirements:

- Operating system : Windows XP Professional / Windows 7
- Coding Language : Java (Jdk 1.7),
- Database : My-SQL 5.0
- Database GUI : SQLYog
- Elipse tool : Eclipse Indigo
- Android : ADT bundle
- One smart phone

C. System Design:-

There are two main actors

- HR-Manager (Admin)
- Employee

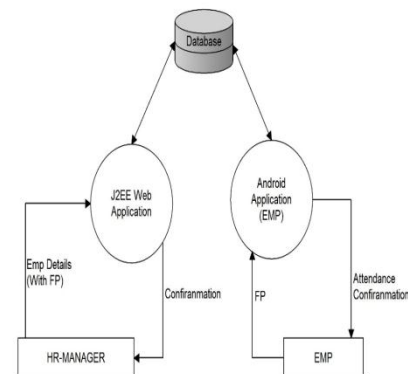


Figure 1: system design

Figure 1: The admin can login into system using his/her user ID and password to view employee attendance details or to add the details of the new employee and fingerprint into database.

Firstly the employee has to connect his Android device (Mobile) to the Wifi of the Company. The employee can login into Android app using his user id, password and fingerprint. If the details present in the database and details entered by the employee are matched then the employee has logged in successfully.

VI. USE CASE DIAGRAMS

A. Use case diagram of admin:-

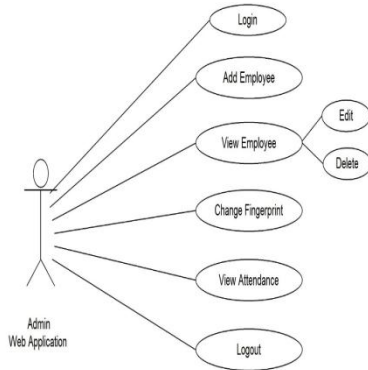


Figure2:Use case diagram of admin

The steps involved in figure2:

Web Application:-

- Login
- Employee Registration
 - Fill Employee Details
 - Emp-No must unique
 - Upload Finger Print of Employee
- Employee Management
 - View Employee Details
 - Edit Employee Details
 - Change Finger Print
 - Delete Employee Record
- View Per Day Attendance
 - Select a Date
 - Display IN-Time and Out-time of all employees
- Logout

B. Use-case diagram of user:-

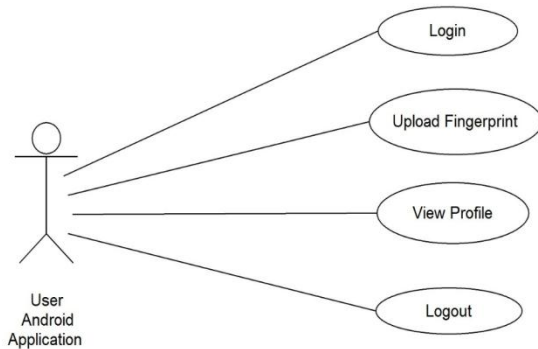


Figure3:Use case diagram of user

The steps involved in figure2:

Andriod application:-

- Login

- Enter userId
- Enter password
- Upload fingerprint
- Cross-check with database

C. Android App Functionality during connecting with Wi-Fi

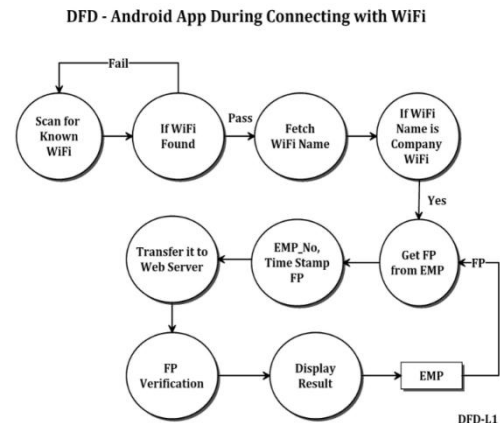


Figure4.Android app during connecting with wifi

The steps involved in figure2:

- Wait and Scan for Known Wifi connection
- If known Wifi is there connect with it and get the WiFi_Name
- If WiFi_Name <> Company_Wifi_Name then stop
- Ask Employee to upload the Finger print (FP) Image
- Fetch the Emp_No from mobile DB
- Send FP Image, Emp_no and TimeStamp to Web Server
- Wait for Acknowledgement msg from server
- Display to the Employee.

D. Andriod app during disconnection of wifi:-

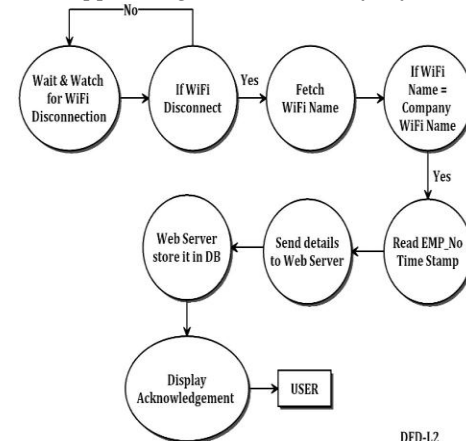


Fig. 5

VII. CONCLUSION AND FUTURE SCOPE

The proposed system is more secured than conventional mode of attendance. The system is capable of tracking location of the employee device. If the device is connected to the Wifi then the employee is present within the company premises. If the employee leaves office premises then the device will get disconnected to the wifi. So, the employees cannot give their attendance from outside the company premises. The system is user friendly and efficient. Attendance information can be accessed at any time by the admin. The easily accessible data allows the employees to check their attendance details.

Here we have developed an android app which helps to detect the presence of an employee in the office and view his attendance details. By using this Android attendance system we cannot detect the location of an employee. So, we can add an additional feature in this android app which can detect the location of an employee and all his activities.

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