Wifi: An approachable computerized monitoring solution

Lavina Tolani ¹, Suvarna Hajare ²

¹Department of Computer science & Engineering, Jhulelal Institute Of Technology, Nagpur, India
Email: lavinatolani21@gmail.com

²Department of Computer science & Engineering, Jhulelal Institute Of Technology, Nagpur,
Email: suvarna.hajare@gmail.com

Abstract— The attendance tracking using manual approach is really a cumbersome process. The individual has to maintain the attendance record in registers and files using pen and paper. The problem with this approach is that it requires lots of paper which are the part of our non-renewable natural resources. We are in the age, where we have to think about sustainable development. Managing the attendance using mobile phones, wi-fi provide an alternative way in this direction. The project emphasize on the development of a standalone system that can track the attendance of the employees, students with the help of Wi-Fi. Communication between management, teachers and the parent is also an important issue that should also be considered. So, we also tried to bring the system which enables automated work to receive the information of their regularity on daily.

Keywords— data / record keeping, Monitoring, productivity, security, Wi-Fi, wireless medium.

I. INTRODUCTION

We have seen over the years that the process of manual attendance has been carried out across almost all educational institutions, offices, colleges etc. The process is not only time consuming but also sometimes inefficient resulting in the false marking of attendance. Today, we need not maintain pen and paper based attendance registers which was a manual process. Following this thought, we have proposed an attendance monitoring system based on the concept of Wi-Fi which is implemented as an Android mobile application that communicates with the database residing on a remote server. The mobile application would require connecting to the database using Wi-Fi technology. Our project is an efficient and user friendly Android mobile application for an Attendance Monitoring. The application will be installed on the user’s smart phone. It intends to provide an interface to the teacher, management who will require minimal details to input for marking of attendance. The HR will open a portal for the employees as soon as he enters the office, the employees mobile with the android application installed on it will mark the attendance if it is in the range of the Wi-Fi. Apart from that, the application would support strong user authentication and quick transmission of data via the Wi-Fi service. HR, employees, management will login to the phone application and get connected to the server. After login, the system will take attendance using mobile phone. In this mobile application employees can also register his name, gender, address, city, state, country, date of birth, designation, mobile number & most important IMEI number. If the student wants to see their attendance then they can see it by the application, after entering the authorized user id and the password.

1.1 BASIC CONCEPTS

Here the idea is to demonstrate small expenditure, reliable standalone system that is in contact with Android application connecting to the remote main server with an efficient wireless cum cable networking terminology. The data which is sent from employees mobile to the access point is encrypted first and then stored in the database. The rights for manipulating the data of the employees are with the administrator. The system is proposed to be transparent to maximum extent so that employees, management and HR can view the attendance respectively in a sorted manner.

II. LITERATURE SURVEY

The attendance tracking system is a tedious process. The system is used to track the attendance of the employees, students in a systematic manner automatically. The development of the application reduces the inefficiency of the attendance system. So Before developing the tool it is necessary to determine the time factor, integrity and security of the system with the IMEI number. Once these things are satisfied, then next step is to determine the operating system and language can be used for developing the tool. The deployment of the system
application is done in a systematic manner with the various software requirements. Before building the system the above considerations are taken into account for developing the proposed system.

Many systems and applications have been developed in this regard to solve the automating the process of attendance, but almost none of them fulfill the whole requirements. Many problems can be seen on those existing applications, some lack GUI, some lack automating the process of information. There are softwares available for automating such problem of attendance but being the fact that desktop consumes more energy or power than the mobile.

Nowadays, attendance is generally taken on the piece of paper in register. Using mobile for taking attendance, consumes not only less energy but also helps in reducing the wastage of paper and can serve as green way for taking the attendance. Use of paper, nowadays can be eliminated by the use of mobile or automating the process of attendance. As now generally every person has a mobile device.

Thus although there exists a system for implementing this feature as desktop application, but with the mobile, we get solution that is green and eco-friendly i.e. consume less energy and power and also provide a good interface and easy to use for taking the attendance. Mobile being portable can help employees, HR or any other user to take attendance on their mobile and view the various statistics to analyse the attendance record.

III. IMPLEMENTATION

The implementation phase of the project is the real hurdle in the proposed system. This project will be the platform independent, i.e.; project can run on any operating system. Because any one can access the project and upload it for their use.

Modules Implementation: It is designed especially for employees to keep track of their attendance level and get notified when attendance, It has two modules. They are-

1. HR Module: The main purpose of the HR module is to provide security. This module is specially designed for employees, which use mobile phone to take attendance. Each employee enter username and password before enter in to attendance list. If username and password match, he/she can enter in to attendance page.

1.1 Attendance Entry Module: The purpose of Attendance Entry Module is it will automatically calculate the in-time in of the office premises using cell phone. In this module the android application takes the attendance using the wifi.

1.2 Database Module: The first function of this module is to update the attendance list from the cell phone. When the attendance list from the cell phone receives, server automatically updates its database. The server updating the database whether any change from cell phone occurred

2. Employees Modules:

2.1 Add Details: Can fill all the profile details like name, gender, address, city, state, country, date of birth, designation, mobile number & most important IMEI number

2.2 Dashboard: You can view all required details from the dashboard. You'll be shown the dashboard every time the app runs.

2.3 View late marks, leaves: You can either view all late marks or the leaves taken in a month.

![Data Flow Diagram](image)

Figure 1: Data Flow Diagram.

IV. EXISTING SYSTEM

In the present system all work is done on paper. The whole month attendance is stored in register and at the end of the month the reports are generated.

Disadvantages of Present Working System:

1. Not User Friendly
2. Difficulty in report generation
4. Lots of paperwork
5. Time consuming

V. PROPOSED SYSTEM

We tried to implement a system which overcomes the limitations of the existing approach. Taking the attendance on mobile phones instead of traditional approach is one step forward to automated system. Doing the same work on mobile phones not only saves our resources but also enables the user to get easy and interactive access to the attendance records of employees.
We are trying to make an application that can help the HR, management to take attendance of the employees through their own mobile device.

VI. SYSTEM WORKFLOW
Real Time Workflow-The HR will manage the portal through the website where all the employees’ entry is done. As the attendance is marked automatically when the employee’s mobile interacts with the wifi inside the company premises. The attendance is marked with the help of a unique number send to the remote administrator. The data then will be stored at the server which is controlled by the administrator, manipulation of the information of the employee such as editing the name, mobile number, etc.

VII. ADVANTAGES
The advantages of our system are as follow:
1. Easy Analysis of data.
2. Better user interface.
3. Made access to the record of attendance available 24*7.
4. Reduced dependency on natural resources for paper.
5. Easy generation of summary of attendance.

VIII. LIMITATIONS
The limitations of our system are as follows:
1. If employee lend his/her mobile to someone else in the classroom then his/her attendance can be marked though the student is not present.
2. To avoid the above problem a partial and tedious alternative is to take a head count every time in the complete day

IX. CONCLUSIONS
The application offers reliability, time savings and easy control. It can be used as a base for creating similar applications for tracking attendance colleges and in schools. And seminar will help the lecturers to reduce their workload by reducing the time and calculations required to update the attendance manually. HR & Management will also view the attendance details using the website. And employee also see their attendance at any time. In this paper we have discussed about the problems caused due to the use of traditional approach in taking the attendance and solutions for that through the use of mobile and provide a new approach.

The goals achieved in following this approach: Automate the attendance management using mobile devices to reduce the dependencies on natural resources. Integrating the employee’s mobile phones with the application so that the application detects automatically the students that are present is a great thing to be added in the future. These are some future works which can be implemented further.

REFERENCES
Min Choi, Jong-Hyuk Park, and Gangman Yi, "Attendance Check System and Implementation for Wi-Fi Networks Supporting Unlimited Number of Concurrent Connections", Hindawi Publishing Corporation International Journal of Distributed Sensor Networks Volume 2015, Article ID 508698, 10 pages http://dx.doi.org/10.1155/2015/508698