Wi-Fi Based Attendance Application using Hotspot

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Abstract: The attendance tracking using traditional 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, provide an alternative way in this direction. The project emphasize on the development of a standalone system that can track the attendance of the students with the help of Wi-Fi. Communication between teachers and the parent is also an important issue that should also be considered, because parent can only get the information about their ward after the interaction with teachers. So, we also tried to bring the system which enables parent to receive the information of their ward of regularity on daily basis.

Keywords: Wi-Fi, Hotspot, Attendance, Android Application

I. INTRODUCTION

The process of manual attendance has been carried out across almost all educational institutions. 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. We have proposed an attendance monitoring application 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. The application will be installed on the user smart phone. It intends to provide an interface to the teacher who will require minimal details to input for marking of attendance of a particular class of students. Apart from that, the application would support strong user authentication and quick transmission of data via the Wi-Fi service. Lecturers will login to the mobile application and get connected to the server. After login, they will take attendance using mobile phone. In his mobile application student can also register his name, branch, year and with the roll 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]

Objectives : The main objectives of this system are listed below as follows :

1. The system can be integrated in institute for the automatic manipulation of attendance.
2. The functionality can be modifying for crowd calculation.
3. The system can be improved for tracking the student locations in campus.
4. Simplified attendance with respect to traditional method.
5. Enhanced Attendance Evaluation.
6. Time saving.
7. No needs to maintain several separate records and manual calculations.
8. A step towards the futuristic e-schools.

II. LITERATURE SURVEY

Existing System:
In olden days generally, the attendance is taken by using the pen and paper to sign the attendance register or timesheet, or the staff needs to spell out the student's names to get the attendance of the student to get the presence. By using the Smartphone, it saves more time and consumes less energy and also helps to reduce the wastage of paper RFID based Participation Framework utilizes RFID peruse to get the understudy data through understudy lattice card. In the wake

of getting the understudy data, it will send it to the PC in that class or lab. From that point forward, the person in control (educator, staff, and understudy) must associate with the PC utilizing Bluetooth to make his/her see the understudy specialist in that class. An exploration on Close Field Correspondence based frameworks for participation stamping has been done, yet there were sure constraints in it. There are a few deficiencies in this framework. The participation checking process is tedious and dreary. To evade intermediary of understudy, manual head check additionally requires to be performed. To defeat the above inadequacies, joining capable highlights of android OS and Wi-Fi would be extremely useful. In the current framework the designers or scientists are build up the idea that is made for just the android application which runs just on the android cell phone however in the proposed framework will take a shot at any working framework with the assistance of Wireless association.

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 student. We are trying to make an application that can help the teacher to take attendance of the students through their own mobile device. The problem is that guardians or parents are not able to get the status of their child time to time or we can say on monthly basis. The application that we are building can allow teacher to take the attendance through their mobile devices, manage records, and inform their parents or guardians about the status of their ward.

III. SYSTEM REQUIREMENTS

● **RAM 4GB :** Random-access memory may be a variety of laptop information storage that stores information and computer code presently getting used. A random-access storage device permits information things to be browse or written in nearly a similar quantity of your time regardless of the physical location of information within the memory. In distinction, with other direct-access data storage media such as hard disks, CD-RWs, DVD-RW and the older magnetic tapes and drum memory, the time required to read and write data things varies considerably betting on their physical locations on the recording medium, due to mechanical limitations such as media rotation speeds and arm movement.

● **Processor core i3 6th Generation :** Intel intended the Core i3 as the new low end of the performance processor line from Intel, following the retirement of the Core 2 brand. The first Core i3 processors were launched on January 7, 2010. The first Nehalem based Core i3 was Clarkdale-based, with an integrated GPU and two cores. The same processor is also available as Core i5 and Pentium, with slightly different configurations. Intel supposed the Core i3 because the new low finishes of the performance processor line from Intel, following the retirement of the Core 2 brand. The first Core i3 processors were launched on January seven, 2010. The first Nehalem primarily based Core i3 was Clarkdale-based, with an integrated GPU and two cores. The same processor is additionally obtainable as Core i5 and Pentium, with slightly different configurations. The Core i3-3xxM processors area unit supported Arrandale, the mobile version of the Clarkdale desktop processor.

● **Hard Disk :** A hard Winchester drive (HDD), hard disk, hard drive, or fixed disk, is an electromechanical data storage device that uses magnetic storage to store and retrieve digital information using one or more rigid quickly rotating disks (platters) coated with magnetic material. The platters area unit paired with magnetic heads, typically organized on a moving mechanism arm, which read and write data to the platter surfaces. Data is accessed during a random-access manner, that means that individual blocks of information may be hold on or retrieved in any order and not solely consecutive. HDDs area unit a kind of memory, holding hold on information even once battery powered off.

● **Eclipse :** Eclipse is an integrated development surroundings (IDE) employed in computer programming, and is that the most generally used java IDE. It contains a base space and an extensile plug-in system for customizing the surroundings. Eclipse is written largely in Java and its primary use is for developing Java Application, however it should even be wont to develop applications in different programming languages via plug-in including Ada, ABAP, C, C++, C#, JavaScript, NATURAL, Perl, Prolog, Python, R, Ruby, Rust and Scheme. It can be used to developed document with Latex and package software for the software Mathematic. Development environment including the Eclipse Java development tool for Java and Scale, Eclipse CDT for C/C++ and Eclipse PDT for PHP among together.

● **Jdk 6.0 :** The Java Development Kit (JDK) is an implementation of either one of the Java Platform, Standard Edition, Java Platform, Enterprise Edition, or Java Platform, Micro Edition platforms released by Oracle Corporation within the variety of a binary product aimed toward Java developers on Solaris, Linux, macOS or Windows. JDK (Java SE Development Kit) includes an entire JRE (Java Runtime Environment) and tools for developing, debugging, and watching Java applications. JDK is needed to create and run Java applications and applets.

- **XAMPP Server :** XAMPP may be a free and ASCII text file cross-platform internet server resolution stack package developed by Apache friends, consisting mainly of the Apache HTTP server, MariaDB database and interpreters for scripts written in the PHP and Perl programming languages. Since most actual internet server deployments use similar parts as XAMPP, it makes transitioning from a local test server to a live server possible. The most obvious characteristic of XAMPP is that the ease at that a WAMP internet server stack may be deployed and instantiated. Later some common prepackaged applications that might be simply put in were provided by Bitnami. Officially, XAMPP's designers supposed it to be used solely as a development tool, to permit web site designers and programmers to check their work on their own computers with none access to the Internet.

- **Mysql :** MySQL is an open-source relational database management system (RDBMS). Its name may be a combination of "My", the name of co-founders Michael Widenius's daughter, and "SQL", the abbreviation for Structured Query Language. MySQL is free and ASCII text file code below the terms of the wildebeest General Public License, and is also available under a variety of proprietary licenses. MySQL was closely-held and sponsored by the Swedish company MySQL AB, which was bought by Sun Microsystems (now Oracle Corporation). In 2010, once Oracle nonheritable Sun, Widenius forked the ASCII text file MySQL project to form MariaDB.

- **Burth Force Algorithm :** In computing, brute-force search or through search, additionally called generate and check, may be a terribly general determination technique and algorithm paradigm that consists of consistently enumerating all doable candidates for the answer and checking whether or not every candidate satisfies the problem's statement.
A brute-force formula to seek out the divisors of a number n would enumerate all integers from one to n, and check whether each of them divides n without remainder. A brute-force approach for the eight queens puzzle would examine all doable arrangements of eight items on the 64-square checkerboard, and, for each arrangement, check whether each (queen) piece can attack any other. The brute-force method is then expressed by the algorithm

```
c ← first(P)
while c≠ Λ do
if valid(P,c) then output(P,c)
c← next(P,c)
end while
```
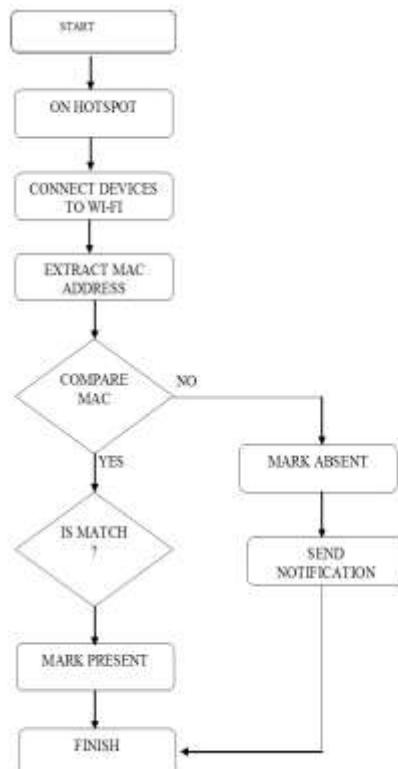
IV. DESIGN PHASE

Figure 1 Working of Attendance Application

Description:
Step 1: Start application.
Step 2: On hotspot of faculty and Wi-Fi of student.
Step3: After connection is established Mac address extracted from database as well hotspot manager.
Step4: Verify students Mac address with database.
Step 5: If Mac address is found then marked as present else absent and send alerts their parents
Step 6: Confirm by faculty and turn off the application.

V. FUTURE SCOPE

We are trying to implement a system which overcomes the limitations of the existing system 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 the students. We are trying to make an applicant that can help the teacher to take attendance of the students through their own mobile device.

VI. CONCLUSION

This proposed technique is used to change the system for maintaining the student's attendance and also saves the time and man power. Wi-Fi based Attendance Application using Hotspot will significantly develop the conventional procedure of student attendance framework in university/college/school surroundings. Wi-Fi based Attendance Application using Hotspot is a computerized information accumulation technology, which leads to more precise data entry. The stored student attendance data are framed and investigate inevitably without any loss of data, compared to a traditional recording method.SMS and Email messages are sent via the system automatically to inform parents so that they can get notified about their child's progress in the institution.

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