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# Survey on GPS Based Staff Attendance System using Geo-Fence Technique

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**ABSTRACT:** This is a survey paper on GPS Based Staff Attendance System Using Geo-Fence Technique. GPS Attendance systems is developed for Staff . The conventional system is accepted method to keep track the attendance of the staff. The process of biometrics and manual attendance tracking is one of the highly regarded and researched for modifications and improvement. With the emergence of the GPS enabled device in smart phone, there is a need to introduce a smart phone as a medium to clock in and clock out for staff attendance,. This paper will discuss the geo-fence technique and its implementation for mobile attendance android based application. The technique is suitable for analysing the location and boundaries of a GPS mobile . From the implementation conducted the application functions well to keep track staff attendance records.

**KEYWORDS:** GPS, mobile attendance, Geo-fence technique.

## I. INTRODUCTION

In many institutions and organizations, attendance is a very important factor for various purposes and its one of the important criteria that is to follow by staff. The usual practice is that staff are given sheets of paper to write down their names, number and signature or their names are written in the record book. This method of taking attendance is not effective. It is very time consuming and a waste of human and material resources. Impersonation as absentee can be on the list through their friends. So it is very difficult to manage the attendance and regulate whether each staff member actually made seventy percent of attendance.

As a result, of these flaws in the classical method of taking staff attendance, there is a need for a quicker, easier, more precise and essential method, using modern technology. Many modern methods have been used to solve this problem like radio frequency identification system, Bluetooth , biometrics etc..

## II. RELATED WORK

[1]Isha Goel and Dilip Kumar have introduced. The GPS is based on a global navigation satellite system to determine speed, position, direction and time. It makes use of a constellation of 24/32 active satellites in earth orbit that transfer a correct microwave signal and enable GPS receiver. A GPS receiver needs at least 3 or 4 satellites to calculate the distance and figure out its two dimensions or 3 dimensions. [2]A system that applies user id and password of a person for authentication was designed and implemented by Cheng et al. [3]. Geolocationing is the first way to provide loca-tion based service. The widely used location technologies are like Global Posi-tioning System (GPS). The proposed system introduces an attendance system using GPS (Global Positioning System) on android smartphone [3] . If the location of an employee and an organization is approximately same, then it should mark as present. This paper use location as a proof of attendance [3]. [4]The smartphone is built-in with a GPS receiver, which can receive signals from GPS satellites. The widely used location technologies are like Global Posi-tioning System (GPS). [5]This system authenticates authorized user but also time and location of the authorized user in both way i.e. through GSM & GPS [5].Managing attendance of employees with time and location constraint to avoid proxy attendance. [6]Each employee's location can be identified by the GPS installed in their individual Smartphone. This location is defined as a key of time and attendance tracking . [7]Location-based authentication has the effect of physical locations of network entities can be reliably determined. In [8], student information tracking system is being developed in Android to manage student attendance on mobile. [9]With real time clock capability of the system, attendance taken will be more appropriate since the time for the attendance taken will be recorded. [10] The purpose of developing attendance management system is to computerized the tradition way of taking attendance. Another purpose for developing this software is to generate the report automatically. [11]In[11] The design and implementation of the system is to provide service in institute and

colleges. The system is to provide comprehensive student information system and user interface is to replace the current paper records. In [12] In this paper basic problem of student attendance management is defined which is traditionally taken manually by faculty. [13] The first attendance machine was very simple, the employees just inserting the attendance paper or called timesheet into the machine, and the time will be printed on the timesheet. [14] In general, digital attendance machine has a few buttons (number and alphabet) and a digital display that shows the time or the text displayed. [15] This application will take the information about user, such as the user position through the GPS coordinate that available on the android device [15]. [16] and [17] We choose android smartphone because the number of android user is very huge in the world.

### III. METHODOLOGY

In proposed system one of the major factor is user authentication. Employee has a unique identification number based on authentication. This number is saved in employee's device. To use this they have to first install the required system APK files into their android device. The GPS in the mobile has to be on when system is running. If the GPS is off the attendance will not be marked and process will not go further because the GPS helps to trace the location of employee/staff. When employee/staff enters the gate of college/office area, the system automatically tracks the employee/staff location with time and attendance is recorded in the system as the login time. When the employee/staff leaves the college/office area the data with employee/staff id and time will be stored in system as logout time.

### IV. CONCLUSION

The GPS based staff attendance system using GEO-fence attendance system is developed using android studio. It fully meets the objectives of the application which it has been developed. The application has reached a steady state where all bugs are eliminated.

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