

Location Based Authentication System

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Abstract

This application is an alternative for marking attendance into college by staff. Now a day's Biometric machine are used to mark the attendance which can be time consuming when there is more number of staff standing in a queue at a same time. This application will make it easy by just login to the system from anywhere in the college. Also teachers can view their schedule on particular day, can send note to student, mark their attendance and can see the number of student in a class.

Keywords: Biometric, alternative, staff standing

I. INTRODUCTION

Many numbers of colleges use biometric machine to mark the attendance which is time consuming when there is more number of staff, biometric machine does not work efficiently in all whether and it has a purchase cost. Our group has planned to develop this android application which will overcome most of the above limitations.

Using biometric machine for attendance marking in a college has some problem as follows:

- Staff has to stand in a queue, which is time consuming
- Biometric machine does not recognize finger print in winter when skin of a person gets shrink or wet in raining season
- It has no surveillance on the person
- It's hardware component gets failed after certain time, it has aging problem
- It is costly

Biometric machine is not able to resolve this problem as stated above because it uses the finger print authentication for security which it does not recognize the person in winter and raining season. Staff has to stand in a queue for marking their attendance which is again a time consuming process and it does not have any surveillance on the person, because once the person marked his attendance he can move to anywhere. It has some purchase cost and aging problem.

Why colleges should not use the biometric machine for attendance marking, because it does not have any surveillance on the person also has some other limitation as stated above. Biometric machine is just for attendance marking which provide any schedule information for staff at the particular day. Because of all this limitation, there are need to have an alternative which our application can be.

Our group has planned to develop an android application which can be used to mark attendance in college by staff instead of using biometric machine. This application uses a mobile device hence it can be easily tracked and the continuous surveillance can be maintained on each staff person who has logged in to the system. The application has some other feature which makes it more beneficial for the college system. Teachers can view their schedule on that particular day. They can mark the attendance of the students on their application and they can send notes to every student of a particular class, they also can view the strength of a class that is how many students are there in a particular class.

This is an android application which work on GPS technology (location based authentication). The administrator of a college will assign a userid and password to a staff person who is registered to the college system. As soon as staff enters into the college (i.e. in the specified range) he logged into the system and his attendance will be marked and stored on the college database server with his userid and login time. But person can only log into the system if that person is in the college (i.e. in range) otherwise he cannot log in to the system. Once the person is logged in, a continuous surveillance is made to make sure that person remain in the college only, if the person moves outside the college (i.e. range) then that person will automatically logged out. After login a teacher staff can view the schedule on a particular day on their device, they can view the detail of student (i.e. number of students) and also they can mark their (students) attendance on their device and can send notes (i.e. email) to all the students. Staffs can also logout through the device if they want.

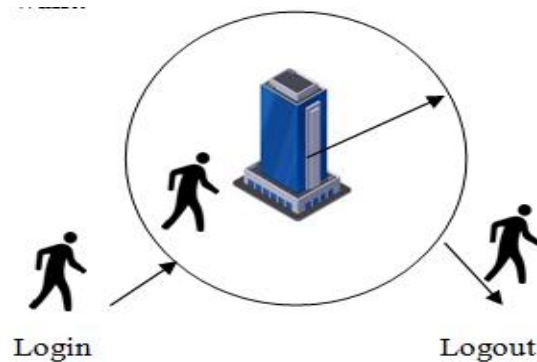


Fig. 1: User Range

II. BACKGROUND

A. GPS Technology:

GPS technology is used in our system to track the user location. When user try to log in to the system, then latitude and longitude of the device will be sends to the sever through GPS and then its gets verified by matching the co-ordinate receive from mobile device and specified co-ordinate on server.

GPS technology is also used to continuously check the user position and if user moves outside the college then the co-ordinate (i.e. latitude&longitude) of the device gets change and the user will automatically logged out.

B. Android Operating System:

Android operating system is used to run the android activity. Our application is an Android application which require android platform to run android activity. Android is a low cost, light weight operating system that can be used on high tech devices. Hence making the application more useful and no cost. These android activities are used as an interactive interface on the user device (i.e. mobile device).

C. PHP and MySQL:

PHP and Mysql are used to build the database server where all the information of every staff will be stored and processed.PHP is used to create dynamic content which interact with the database. It is used for the connectivity between the Android application and the database server.

III.DESIGN OF THE SYSTEM

A. Flow Diagram:

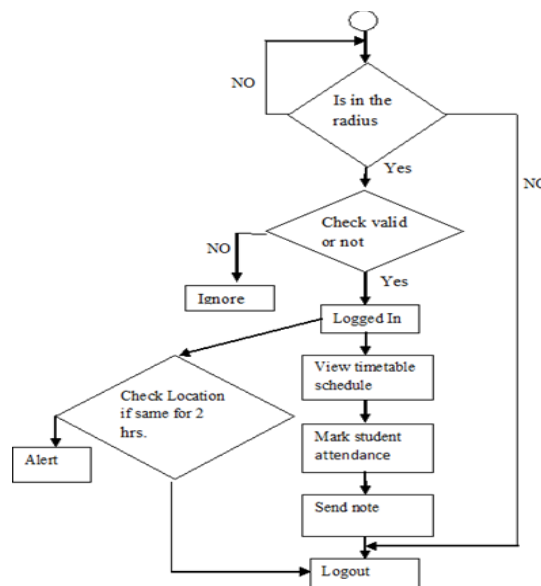


Fig. 2: Flow Chart of System

System flow diagram shows the flow of information. When user try to login to the location will be verified to check whether person is in range or not. If the person is in the range then the person can successfully login otherwise not. Once the person is logged in to the system, a continuous surveillance is maintained to make sure person cannot misuse it (i.e. after login person cannot go out of the college).Is person moves out of the range of the college then that person will be automatically logout. The teacher staff can view the schedule on a particular day; person can mark the student's attendance and can send note to the students. If the person wants to logout he cans logout by pressing logout button.

B. System Diagram:

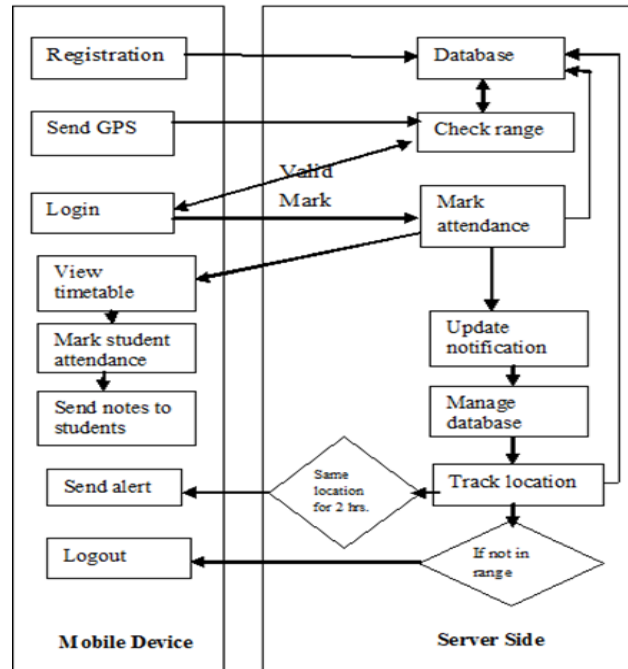


Fig. 3: System Diagram

1) Mobile Equipment:

In the system the user first need to register .user id will be authenticated from the server and user will be registered successfully (as shown in figure 3.2).while login the user id and password will be verified on the serve and if the user is valid user successful logged in and also when the user logged in location information of the user (latitude and longitude) will be send to the server and also using this system will display alert if user is spending more time at the same location (i.e. same latitude & longitude).the staff can view his/her schedule of a particular day. If the user goes outside of the specified range (i.e. latitude & longitude) then he automatically logged out or user can log out by on his own.

2) Server side Component:

On the server side its store the user information into database. The server have database of registration, login information's& logout information. The communication between the applications is done using client server communication model (HttpRequest, HttpResponse).when the user login in to the system the information is retrieve from the database &authenticated. The login time information is saved into the database. If the users are location remains same for specified time which is on the server, then server sends an alert. If user moves away from the range (minimum distance) then server automatically logged out the user.

IV. CONCLUSION

This application will prove to be a time saving applications. It marks the check-in and check-out time of the teachers. Teachers can view the time table and can mark attendance of the particular class. Notes and all the data can also be sent to the students. This will make the students get update of their regular lectures. Even the notifications are updated. Meeting dates and important events are updated too. Everyday data are sent to the administrator. Admin manages the data and stores in a proper format. Session management is maintained accordingly.

V. FUTURE WORK

We are planning to integrate the module to generate the salary of the employee on the basis of no of hours they have within a months. This application can be scale further for the bigger organization having more no of employees.

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