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Abstract

Android Based Attendance System is an innovative tool to take the attendance of the students by the use of Android smartphone. Up till now in many colleges and universities of our India are found to use the basic methods of taking the attendance like calling their names, passing the attendance sheet or taking sign of student but it seems to be very time consuming and leading to proxy attendance in the larger classrooms. Therefore network connectivity based attendance system for android device is described in this paper. This application once installed will take all the information of the student which will be transferred to main server which will be divided by subjects and their teachers. This tool needs permission to access the network connectivity of the android [i.e. to on-off Wi-Fi, Hotspot, and Bluetooth]. This application will be installed on the Android device of Teacher as well as student where the specific ID of the student as well as teacher will be made and the data will be transferable to the database of that institute/college. In this application the Wi-Fi of the students will be connected to the hotspot created by teacher's smartphone for a short span of time in which the students have to mark their present. As the specific ID of the student added to Teacher's Id and at the end of this short span the attendance data will be stored and the student who is not able to mark its present will be marked as absent. The updated list will be uploaded to database and transferred to PC later on. At the same time it will be environment friendly as it will eliminate the use of paper and the problems described above. This application will be installed to their android devices hence, no other extra hardware cost is required.

Index Terms: Connectivity based attendance, Attendance, specific Identification, environment friendly, time saving, prevents cheating, cloud storage.

1. INTRODUCTION

In the current situation "Attendance and its management is the crucial task for any institution." The methods used nowadays for taking attendance are now outdated and at the same time it is a type of burden for teachers to handle and update the attendance regularly. The process followed by generations is like teacher takes attendance in the classroom and mentions it in the logbook which he maintains regularly.

Then one desktop application created by the administration where the teachers update the attendance by their logbook data this process runs daily and it is continuous therefore the attendance is to be updated regularly. This process is very systematic and proper but it needs very much effort therefore the chances of leading towards the errors is the massive drawback of this system. Apart from this sometimes the teachers take attendance on piece of papers and then enters it into logbook later therefore it have chances to be misplaced and this results in inaccurate data upload.

In order to reduce human effort this connectivity based android application can be very helpful for the upcoming generation. This application can take

attendance store it, maintain it regularly for each and every subject and requires very less time.

In this android based application it has four levels (student mode, teacher mode, administration mode, and student direct access mode.)

The developed project which is connectivity based requires biometric recognition for staff members and administration to check, edit the data which is uploaded.

1.1 Objectives of the Application

-To develop this network connectivity application based on android which can take, record and maintain attendance as well as student information.

- To reduce human effort and errors.

1.2 Development and access

-This application will be developed in an android studio where the java programming is used

-This application needs an access to connectivity that is Wi-Fi Hotspot, Bluetooth and location

2. METHODOLOGY

This project is developed in java applications, it is totally based on network connectivity. It has four modes

a) Administration Mode.

b) Teachers Mode.

c) Student Mode.

d) Student direct access Mode.

As mentioned above it works on a network connectivity principle. Here at the time of attendance the teachers and the students have their application installed, when they will open the application, the teacher will have teachers mode and students will have student mode. In teachers mode the application will access to the hotspot and when student opens his application the application will access to the portal of teacher by switching on its Wi-Fi, this application will now totally work on the principle of Wi-Fi direct.

What is Wi-Fi direct?

Wi-Fi direct is a Wi-F standard that enables devices to easily connect with each other without requiring wireless access point. It is enable to everything for internet browsing to file transfer and to communicate with more than one devices simultaneously at typical Wi-Fi speeds.

It also connect devices from different manufacturers. Only one of the Wi-Fi devices needs to be complaint with Wi-Fi direct to establish peer to peer connection that transfer data directly between them faster than any other available medium.

When the teachers portal will be open all the devices will be connected to the teachers device and perform their process and all the data will be stored in the form of report and further transferred to database of the institution.

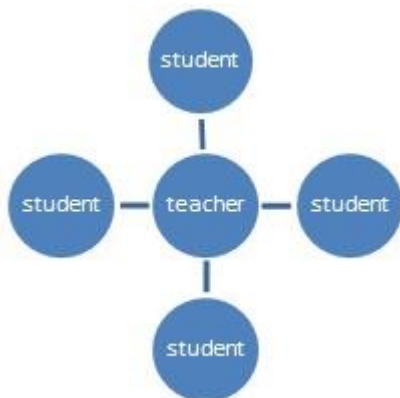


Fig. 1: How Wi-Fi direct works?

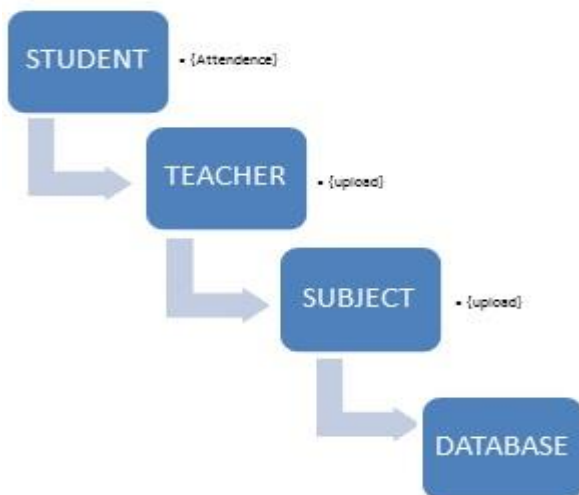


Fig. 2: Working Flowchart from Application to Institute Attendance system

2.1 MODES DESCRIPTION

This application contains 4 modes for the use for student’s teachers and administration at the same time

2.1.1) ADMINISTRATOR MODE/ DATABASE

In this module the administration have direct access to Database of the system who can change, rewrite, monitor and manage the information.

The administrator have the following rights:-

- Control the access
- Rewrite the changes
- Monitor the attendance
- Management



2.2.2) STUDENT MODE

When the app is installed the IP is noted down as the application have access to location. The first step for student is to register in the application with phone number and give correct personal details then the next step is to login using the password and id provided by application and after logging in the user cannot log out till the semester ends and multiple login is not allowed. If any multiple login be find then the ID will be terminated.



2.2.3) TEACHER MODE

The teacher’s data is fully filled by the administration in the application and hence for taking attendance the further Wi-Fi direct principle is used where the portal is created and all the students in the range get connected to it. The portal will be active for



a short span of time and after attendance is done the portal will be closed.

2.2.4). STUDENT DIRECT ACCESS MODE



It could be a drawback when any person lost his/her smartphone or forgot it somewhere, then he/she could not be able to give his/her attendance but this can be prevented by direct student access mode the administration have rights to access to all the accounts and hence by this accessibility function the students presence in the classroom is granted.

2.2 SERVER/DATABASE DESCRIPTION

The database is the most vital component of this system where all the data of the students will be stored by the method of cloud storage. This database will be a website which will be made by php (programming language).

Php is a flexible language which has lots of innovative features available for database-enabled dynamic websites.

The bandwidth of the cloud storage will be made large so that large amount of data will be stored.

The data will be encrypted with biometric security with a backup password which enables editing in the database

2.3 CONNECTION WITH DATABASE

Since all the data from the android system is connected to the attendance system of the institution so we can consider the attendance system of the institution and the application in the same unit. Now they both are the same unit. Therefore to connect the database server we will use Structured Query Language (SQL).

SQL is used to communicate with the database. It is a standard language used for relational database management systems. SQL statements are used to perform the tasks such as update data on the database, retrieve data from the database. However SQL commands such as insert, update, and it can be used to accomplish almost everything that one needs to do with the database.

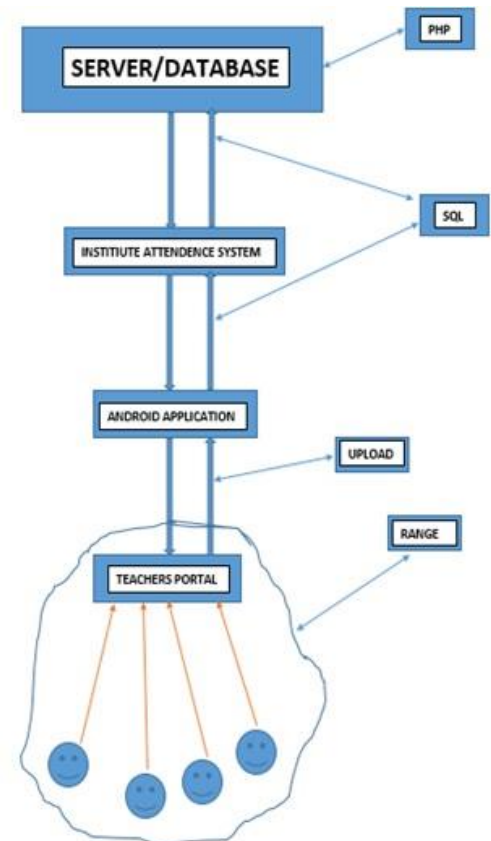
3. DRAWBACKS OF THE SYSTEM

1). Not every student can afford android smartphones but anyone who wants to use this application has to afford it hence the competition between the mobile phone companies is very large therefore one can get it at a cheap rate

2). There may be the issue over the range of the portal because if the range goes out of the class anyone can do their proxy attendance.

4) BENEFITS OF THE SYSTEM

- 1).The errors due to human work will be reduced in the attendance system.
- 2).Ultimately there will be less use of paper and hence it will be saved.
- 3).Anyone can check its attendance anywhere hence it will be time saving and accurate.



WORKING DIGRAM

5. CONCLUSION

This Project is for time saving purpose and for errorless data which is hard to understand but if taken in purpose then it can save so much time and provide us errorless data and mistakes done by human can affect student's attendance and hence attendance plays a vital role in the academics section of student's life. Further this work can be expanded as direct SMS system through this application if the student is absent or not present in the classroom while attendance, for the internal marks, semester and placement activities. Also further we can work on the range of the portal.

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