Smart Portal Application
A Complete App For Student And Staff Management

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Article Info	ABSTRACT
	In this article I am introducing a new model of Attendance which is very compactable for and useful for attendance management. Today is the generation of "Smart class", "e-learning", "Videoconferencing", "social networking", "Skype", "Facebook", "Whatsapp". All class activities are done and carried out in system and web, Wi-Fi. The main core idea of this paper is to convert these activities into our Smart phones as Applications. The Application is nothing but a mobile app that can be installed in any Smartphone and use it through Wi-Fi.

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1. INTRODUCTION

This system is has very advance functions that of in a usual attendance management maintained in most of the technical universities. Today we need not maintain pen and paper for marking attendance and enter marks for all students in a class. According this thought I have developed an application which performs all these class activities in any Smart phones. Here the application installed on gadgets will connect to a specific classroom router which is assigned to a specific staff. This way each room has a router which is assigned to that staff at a particular instant of time. Then the connected routers will be shown "connected" with the room number where it is installed or kept. By doing this each department initiates a network where the position of each staff can be analyzed.

This application also has connectivity to the main institute database which contains all information about staffs and student administrative details. This Smart phone application requires connectivity to net or Wi-Fi. The students need not have a stress of making any mistake in marking attendance. The other compatibility feature provides a mode in which only the respective staff or lecturer can only mark the attendance of their assigned class. Initially each staff is assigned with respective class according with the scheduled timetable of each class.

1.2. Implementing Routers

In an organization each class room is installed with routers for Internet access purpose. So we need to register the routers with the respective classroom number. So in a network the routers status will be shown as room number.

Each router installed in each class will be connected to university network.

Figure 1. Basic Router

1.2. Gadget Interface

The staffs and students will be having their mobile phones, laptops or any other smart devices to get connect with the Internet. Respective staffs will be responsible for a particular subject hour in a class. When each staff enters into a class he need to get connected to the unique router installed in that classroom.

In order to access the Internet he need to login to the university portal using his unique ID. As soon as he get logged in his attendance for the particular hour is marked. Same way each staff need mark his/her attendance in their respective subject hours.

The staffs who do not have a subject hour on a respective day, then he/she can mark the attendance after login to university portal by connecting to the usual router installed in the office or staff room.

Figure 2. Gadget Interface

The smart phones along with the students are connected to the Internet access by login to the university portal. The staff need to mark the respective students attendance with in the same subject hour. The register numbers of each student will be identified in the unique classroom router network.

So problems like marking wrong attendance will not be carried out.

2. RELATED WORK

There are plenty of android applications for the purpose of attendance management various institutions and industries. Some have the functionality of using biometrics where as others have biometric sensors. But all these functionalities are attached to the online services which can be maintained by the organization easily.

In the proposed system, I introduce a new system which manages attendance as well as all other daily activities in an institution. In other words the overall institution portal activities and some additional functionalities that can be maintained in an android application easily.

Here we use routers and smart gadgets instead of biometrics.

3.   PROJECT DESCRIPTION

In this we using router and smart gadgets as our main devices for implementing the portal applications. Each staff must have a unique login ID and Password for accessing the university internet, through which they can login to their portal which in turns automatically mark his/her attendance. This attendance will be marked at each hour when they enter into the respective classes as per the timetable. On the day when they have free hours they can mark the attendance by using other routers installed in the office or staff rooms. The staff can also take attendance of each student present in that particular class.

Simultaneously the students can also login to their portal and get their notes and circulars, but they have a separate functionality than the staffs.

3.1. Database Description

The university database contains all information about the staffs and students. Staffs are authorized with special authentication rights that of the students.

Each department HOD's have superior authorization over respective staffs. Respective notification about each student regarding his attendance will be sent to their parents with the mutual understanding between university database and internet.

Figure 3. University Database

4.   CONNECTIVITY WITH MAIN NETWORK

All routers installed in each class will be mutually connected with the university network and database. These routers will be organized on the basis of university departments which can be easily maintained by the authorized admin head.
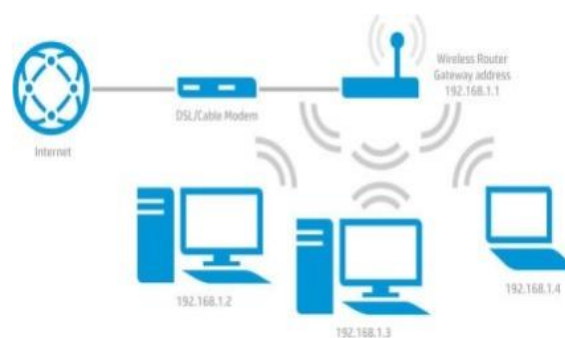

Figure 4. Main Network

The additional features implemented are:

4.1 Graphical user interface

The application is designed in such a way that, it provides a very user friendly interface to the users. All available functions will be listed aside in the initial page of the portal.

Every important notification regarding the device capability will be shown to the user periodically.

4.2. Chat Options with Other Members

This is a unique functionality which cannot be found in other portal management applications.

Each staff can send and messages to other staffs who can login into the university portal. Regular notification will be given, whether the particular staff is being logged in the portal or not. Circulars to each staff regarding the university can be sent to them with in this application.

4.3. Position Analysis

This is another unique functionality that the position of each staff will be showed as a status to other staffs who are logged in to the portal.

This is done by, initially each router is registered with the room number where it is installed so that staff's position will be shown along with the room number.

This helps us to analyze where the particular staff is.

Figure 5. Position Analysis

4.4. Email functionality

This application also contains email options with in the application for easy sending and receiving mails to the students as well as other staffs.

He/she can register his/her email ID with this application initially during the configuration of the android application.

Due to this he/she need not open email tab separately for sending and receiving mails.

4.5. Platform Independent

This application can be installed in Android, Windows as well as ios platforms.

Through this, ones interest on using particular OS smart phones is not disturbed.
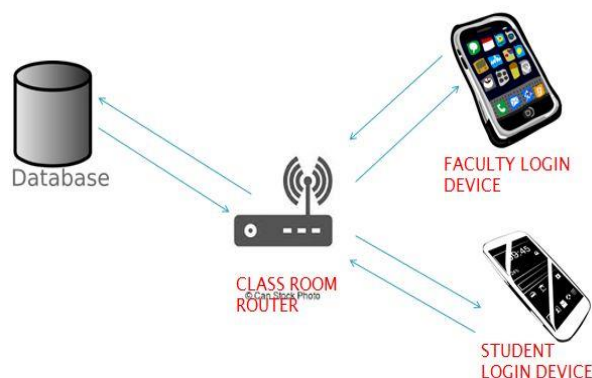

Figure 6. System Architecture

This representation shows how various devices are interconnected with each other devices and the database. The router plays an intermediate role between the user devices and university database.

5. APPLICATION ON ANDROID PLATFORM

Android is an open source which works under Linux platform. It is specially designed for mobile phones and other gadgets. This smart portal application will be very easy to install and run in android phones and gadgets.

Also android is very widely used operating system in which we can develop many applications using java, and C++.

6. CONCLUSION

By implementing this advanced application the difficult and exhausting task of managing university portal and attendance becomes very easy and comfortable.

7. FUTURE SCOPE

This particular application can be made much more advanced and user comfortable by RFID technology, automatic iris (eye) scanner. Also it may include the functionality of managing the health status of each student and staff.

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