

# Android based Campus Notification and Information System

Mr. Prashant Gaikwad<sup>1</sup> Mr. Lokesh Naik<sup>2</sup> Mr. Satish Ket<sup>3</sup>  
<sup>1, 2, 3</sup>Student

<sup>1, 2, 3</sup>Computer Engineering Department

<sup>1, 2, 3</sup>Rajiv Gandhi Institute of Technology, Mumbai, Maharashtra, India

**Abstract---** As mobile devices have become popular; there appears a new trend to release all kinds of campus information by intelligent mobile terminals. We describe a network for distributing campus information among lecturers and students. The concept of developing campus information system is to ensure that student can access information at any time, at any locations and ad-hoc basic. Information System helps the students and lecturers on campus to find and access information based on ad-hoc basic, which is of interest and relevant to students or lecturers through a smart phone. We will develop an Android application thereby providing a collaborative communication system within the campus aiding everyone participating in it. Thus we will be implementing the android application which promotes high usage of mobile phones by students into a system through which the students can learn and to present an informative tool which they can use to solve their queries and also receive the latest news running around the campus on their mobile phone devices.

**Keywords:** Android, mobile campus, notification, JSON.

## I. INTRODUCTION

India has the fastest growing telecom network in the world with many users moving towards Smart Phones and majority by students. Other than India all over the world has boom in mobile with many applications that are useful in day today life such as games apps, video calls, photograph apps, shopping apps, easy search options etc. We introduce a novel approach to share information via an Android application between students and lecturers in order to enhance quality of information in campus environment. We describe a network for distributing campus information among lecturers and students.

Android is Open Google mobile platform which provide greater flexibility, Rapid Application Development and Easy to Develop User Interface with rich API collection. It is mixture of C, C++ and java. Android being a relatively new technology, the future scope in the project is immense. Scalability would be the biggest scope. The application can be made available off campus as well whereby only certain services would be made available to the user. Information security plays a vital role in the system work model for ensuring confidentiality and integrity, smooth functioning and reduced misuse of the system. Advanced security features can be employed for enhanced functioning of the application.

The idea is to enable the user to find and access all information that is of relevance to him. All he needs is a smart phone which enables the execution of an android application. All used techniques are in themselves not new or unique, but the combination of instant messaging. On top of that, the system based on a platform made purely for research is in the stage of evolving into a product and is

even now being utilized as a public service on-campus. Altogether we find a situation on Campus, where students use their mobile device for learning and interacting.

## II. PROPOSED SYSTEM AND ARCHITECTURE

### A. Functionalities

In our proposed system we provide sharing of information between students and lecturers in order to enhance quality of information in campus environment. We describe a mobile application for distributing campus information among students. The concept of developing campus information is to ensure that student can access information at any time, at any locations which is of interest and relevant to them.

- **Alerts/Notification:** - Alerts are to be send to all the students in the college.
- **File Sharing:** - In this admin can also share the file suppose assignment so the file will be uploaded on in respective format.
- **Fest Information:** - Students can view details of schedules for various events. This will help students keep better track of extracurricular activities and events.
- **Post Request:** - If the student wants to post a query to the professor then they can send the alert to professor and professor can reply to that alert by posting a comment to that particular student.
- **Library Information:** - The students could get all the information of which all books and latest magazines are available in college library.
- **Check Results:** - Students can check and view their academic results

### B. Architectural Design

The architecture of the CNIS will consist of three components: an android application as the user frontend, a server application in the middle, a freely scalable number of service nodes for delivering the information to the mobile devices.

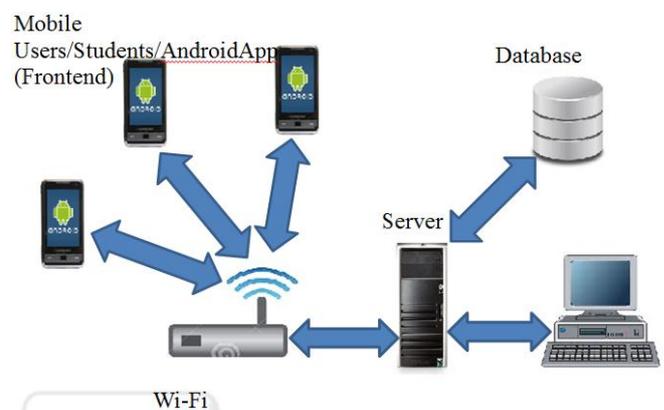


Fig. 1: System Design

As it is said earlier this project is built on three stages so all are divided into the parts. The admin panel for administrator is on the first stage, Database which is running on the backend on second stage, the final stage the front end for users (students). It was decided there would an admin panel for administrator which would be implement first and the administrator is going to send a request (which contain alert or message) to a server from where the server will process the request to database running on backend and fetch the data from the related table and process back the request to server then server establish communication to students mobile devices through Wi-Fi wireless router the request is now processed to students through wireless router.

### III. IMPLEMENTATION

#### A. Requirement Gathering

The requirement is collected by use-cases through which it was decided what objects and functionality should be given to Administrator, such as Login, Add/Update Student, Send Alert/Update, Post Event, Query Posting, and Add Resources. Then we decided the platform to build this application which is Android, what database we will be going to use which is MYSQL DB, which language should be used develop a web based application for administrator which is PHP.

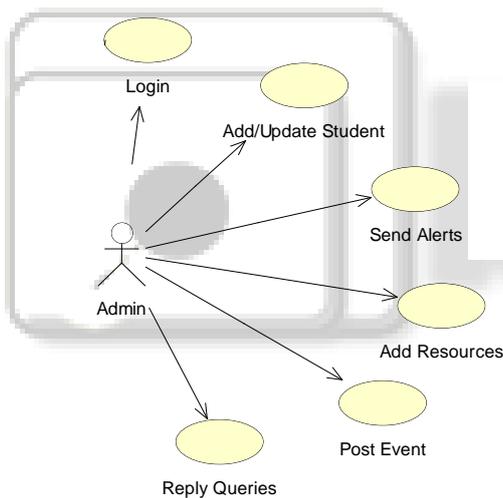


Fig. 2: Use Case Diagram for Admin

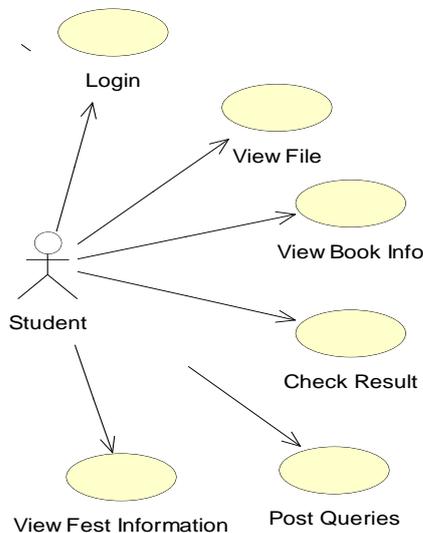


Fig. 3: Use Case Diagram for Student

#### B. Development of Graphical User Interface

After the initial collection of data, different user interface for the application have been developed. This included of login, home screens for user. User has to enter username and password for authentication. Upon successful login the user has to choose amongst the provided functionalities of the application. The mobile application is built using Android SDK on Eclipse IDE.

The GUI for the administrator is developed using PHP which serves as the web application. The login panel is been made which allow admin to login in through the user name and password mean while it was decided to build a database on MYSQL Database.

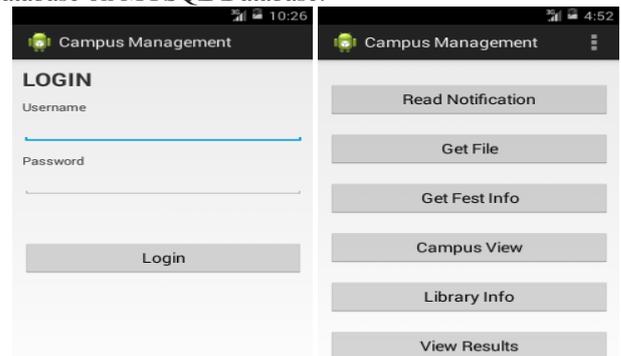


Fig. 4: Login Page & Home Page for Student

#### C. Creation of Database

Most of the data of the application has been stored on the server side. The data in the database includes professor information for the directory, student information, book details and details of the events. The database maintained at the server is updated in a timely manner to keep the user updated.

#### D. Server Side Implementation

**Web Services:** To communicate with clients the server makes use of PHP web service. These interfaces can be used by the client to either send or retrieve data. JSON is used for the data interchange between server and client.

**JavaScript Object Notation:** As an exchange format to communicate between server and client JSON is used. It is a structured way to store data in a text based format. The media type of JSON is application/json and is the only return type the server produces. To transform Java objects into a JSON format and vice versa the JSON library developed by Google is used. The POST and GET parameter can be passed to a Java method. Based on these parameters and the resource path the server gathers the requested information from one or more data sources and returns the result in JSON back to the client.

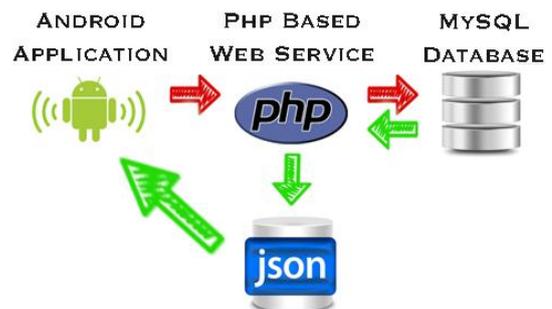
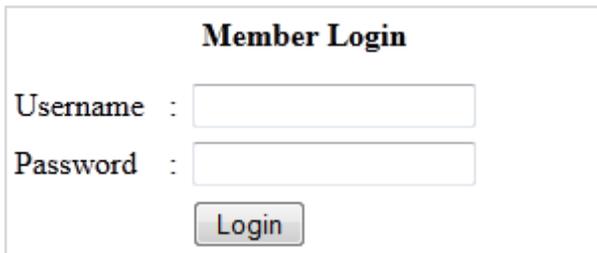


Fig. 5: Database Communication

### E. Implementation of Alerts, File Sharing and Events for the Application

The details about the directory, events and notices have been maintained at the server side database. Using PHP code the connectivity with the android functionality and database has been established. This information can be updated dynamically with admin access to the database which is secured properly and cannot be accessed without proper credentials.

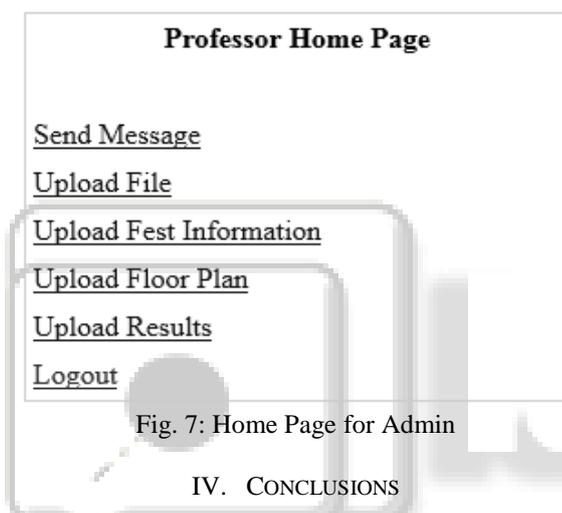


**Member Login**

Username :

Password :

Fig. 6: Login Page for Admin



**Professor Home Page**

[Send Message](#)

[Upload File](#)

[Upload Fest Information](#)

[Upload Floor Plan](#)

[Upload Results](#)

[Logout](#)

Fig. 7: Home Page for Admin

### IV. CONCLUSIONS

Thus our project focuses on the development of a mobile application in campus environment that supports information services in campus environment. It is clear that there is a need for development for mobile services and terminals in campus environment and students are able to retrieve information at anytime and at any location.

The system can be further enhanced to become a more powerful and sophisticated system. There are still many aspects for improvement and enhancements of the system can be made in the future to meet changing needs of the students. Therefore, enhancement in the future will extend the usability of this system. We can include student attendance feature, event registration, and campus placement application and registration in future in our system and thus expand its scope.

As of for now, the project will enable the college student to download the study material such as question bank, assignment questions, tutorials etc. But in the near future, if the lecturer or the professor is not able to take lectures for a long duration, then the lecturer can make a video of the lecture from his workplace and give it to the administrator to upload it on the server, and the corresponding link will be send to the students. Thus the process of e-learning can be incorporated with the our project in the future to provide a robust learning system with the Campus Notification and Information System being a

communication system or bridging the gap for a better learning experience. Being a relatively new idea in India, we can even go commercial with the idea and provide numerous campuses with the application.

### REFERENCES

- [1] Mohd Nazri Ismail, "Development of WAP Based Students Information System in Campus Environment" International Journal of Computer and Electrical Engineering, Vol. 1, No. 3, August 2009
- [2] Hu Hongxin, Cui Ming, "Development Scheme of Mobile Campus Information Integration Platform Based on Android"
- [3] Michael Schulze, "CAMPUS NEWS - Artificial Intelligence Methods Combined for an Intelligent Information Network", University of Koblenz (IEEE Paper)
- [4] Application Fundamentals, <http://developer.android.com/guide/topics/fundamentals.html>
- [5] Campus Application of FH Kiel 1.0 for Android, [http://www.handster.com/campus\\_application\\_of\\_fh\\_kiel.html](http://www.handster.com/campus_application_of_fh_kiel.html)
- [6] Mobile App Development, <http://www.rapidsofttechnologies.com/android-application-development.html>
- [7] Android, MySQL, PHP, &JSON, <http://www.mybringback.com/tutorial-series/12924/android-tutorial-using-remote-databases-php-and-mysql/>