

# Departmental Educational Android Application

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**Abstract:** In the advancing world of technology, Mobile applications are rapidly growing segment of the global mobile market. Mobile applications are evolving at a meteor pace to give users a rich and faster experience. In a real-world scenario, such as college campus, the information is in the form of notice, hand-written manual, verbal message, is being spread among the students. Today it is of the essence to not only use the predictable forms of statement, but also new forms such as cell phone technology, for faster and easier communication among the students. The approach of communication is Android. The core idea of this project is to implement android based Mobile Campus application for advancement of and educational system. The application will be used by students, teachers.

**Keywords:** Android, Notes, Attendance, Firebase, Fire Store, Events, Student-Teacher chat portal.

## 1. Introduction

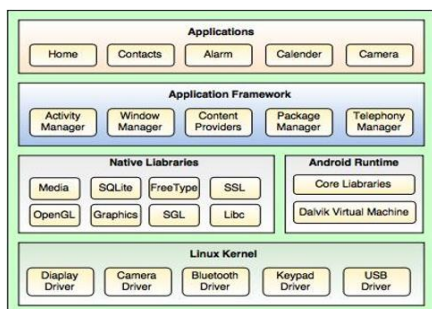
Android is a mobile operating system based on a modified version of the Linux kernel and other open source software, designed primarily for touchscreen mobile devices such as smartphones and tablets. Android is developed by a consortium of developers known as the Open Handset Alliance, with the main contributor and commercial marketer being Google.

Features of Android:

- Open source to explore and free for users to download
- Complete community support
- Wide media support
- Embedded web kit engine
- High class developed environment.

## 2. Android Architecture

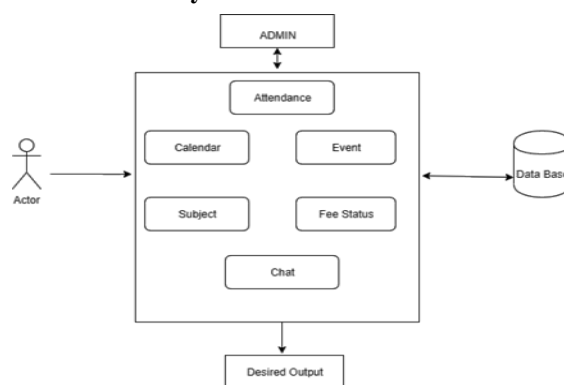
Android operating system is a stack of software components which is roughly divided into five sections and four main layers as shown below in the architecture diagram.



Departmental Educational Android application is very useful for college students. This app can help students and teacher as a better and efficient way of learning. Students of all the departments can use it for their notes, study material and other academics and events going on. This app can let a student and teacher/administrators know the progress and other details right from anywhere. Departmental educational android application allows access to mediated and self-access services, as well as databases, announcements, registrations, events, schedules etc. The project provides Android based application that allow an online access for different users – students, administrators. The app provides students with user-friendly, generic, interface.

Departmental educational application allows administrators/teacher to send and receive text messages to and from students. In addition to the system monitoring, the app provides tools for the administrator for keeping the record of students for their attendance and a chat portal for students where they can discuss topics with their staff. It also provides help to students and teachers by making the availability of notes within the app and also online mock tests for students can be conducted from the app.

## 3. System Architecture



## 4. Working

Departmental Educational Android App has several modules and two separate UI for students and staff. The user side i.e. the Student side can only retrieve data, whereas the Admin side i.e. the Staff side can manage the data as well as keep record of it.

- 1) We start the App by tapping on its icon on the home screen of the device, we get to see a splash screen showing the app logo and then the signup/login page.

- 2) If you are already a registered user you just need to login or hence you need to sign up with the credentials if you are new to it.
- 3) While signing up you may have sub options like basic details name, email-id, whether the user is Student or Teacher, semester and so on.
- 4) After successful sign up/log in user is directed towards the home page where there are 2 separate UI for student id and teacher id.
- 5) Both the user can get access to several modules like Academic Calendar, Events, Online Student-Teacher chat portal, Subject tab where all the study material related to the academics including notes, tests, etc. can be downloaded and accessed by staff as well as student, but uploaded and modified by staff only. All the data uploaded /stored is with the help of Fire Store
- 6) There is an Attendance option only in Teachers side specially for teachers to take attendance hassle free keep the record of students secure and within their hands which can reduce redundancy & paper wastage, and stored in Fire Store Database which further can be modified into and excel file and downloaded/printed.
- 7) There is also an option for Students to keep record of their fee status where they may check the amount to be paid or amount which has been already paid, this may save time as they won't need to go to clerks and ask for the pending amounts.
- 8) In Settings user can upload his profile picture, delete his/her account, change email-id etc.

### 5. Modules

1. *Admin Module:* This module is designed for Admin, which is used to update information and upload college notifications. Admin will login with their own Big Brain login id and password. Only after successful authentication the operations are performed. If username and password match, he/she can enter into their account or else not.
2. *Student Module:* This module is designed for Students, which is mostly used to retrieve the notes and other information uploaded by the Admin/Teacher or can attend the tests through the app.
3. *Database Module:* The proposed system used Firebase as its database because of their simplicity and flexibility. This module stores every single information about students and model their data on specified operations, these operations can be storing images, library books information, syllabus, etc.
4. *Wi-Fi module:* Wi-Fi module is used to give the connectivity between server and client.
5. *Calendar Module:* Additional academic calendar is provided for the students to keep them updated with the

ongoing events and exam related information and other academics.

6. *Subject Module:* This module is designed for teachers as well as students to access /upload notes, tests and other additional teaching aids that would be helpful for students.

### 6. Conclusion

In this paper we discussed about the departmental educational app and how it can be useful for Students and Teachers too in all aspects This app is efficient enough to solve the everyday problems of students and teachers regarding the notes, or the other learning aids as the can be available right in our smartphones.

By providing educational services using wireless and mobile technologies, educational departments can potentially bring great convenience to those off-campus students who do not always have time to find Internet enabled computers or huge books to get important educational information from their academic institutions. With the Big Brain services apps, students and instructors can access services any time and any place they want.

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