



TO DESIGN DATABASE APPLICATION FOR ANDROID OPERATING SYSTEM

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ABSTRACT

Android is open source software by Google running multiple programs. It is powered by Linux kernel and it supports SQLite software libraries with multiple user interface and phone applications. Applications are programmed in java programming language with UI part in XML and have extension as apk. The idea of the application was to join an Android user and an Android developer for creating better applications. This describes design and implementation of android JCOET application. The main objective of the thesis was to discover development in the android Platform and produce a prototype JCOET application. The theoretical part discusses the android platform, its architecture and the development environment and tools that are used in android mobile application development. Basic components and procedures of android application development are described in the development process. Tools that were used in the development included Eclipse, Android SDK, ADT plug-in for Eclipse.

INTRODUCTION

In recent years mankind has witnessed a revolution in the smart phone industry and emerging growth in the usage of mobile applications that range from entertainment and educational apps to simple games, health care apps and more. Database technology, which is widely used in the business applications, has evolved from primitive file processing to the development of database management systems with query and transaction processing. As consumers Internet activities were shifted from the web to mobile, new opportunities to interact with products are becoming prominent. Mobile JCOET application is targeted for Android device (i.e. an open source and Linux-based Operating System for mobile devices such as smart phones and tablet computers developed by the Open Handset Alliance, led by Google, and other companies) which helps the users in finding the various information regarding college. This application will be used by the college students, staff and their parents. The application used here composed of an Android 4.2.2 version which runs faster and have small footprint. The embedded database MySQL is used to store the information available in a particular category. Android allows users to customize their home screens with shortcuts to applications and widgets. The Android programs have an extension of .apk which is to be installed in the Smartphones. Android programs are built in C, C++, or Java programming languages but the UI is perpetually made using Java. Android operating system is a stack of software components which is roughly divided into five sections namely Linux Kernel, Libraries, Android Runtime, Application framework and finally Application layer through which user will interact.

LITERATURE REVIEW

In December 2009, M. L. Murphy et al. [6] "Android Programming Tutorials" was selected to get the author quickly up to speed on developing Android applications. It was the first search result using the search string "Android tutorial" on the online bookstore Adlibris.

In 2012, Bhavana Malhotra et al. [7] focuses on the study of the transformation from paper-pen based approach to the mobile application approach, and giving the description about the two existing shopping list Apps i.e. "Out of Milk" and "Shopping List".

In 2013, A. Mallikarjuna et al. [8] describe the paper which deals with the history of the android, the early prototype, basic building blocks, application and features of the android.

In 2013, Shweta Shashikant Tanpure et al.[9] aims to automate the food ordering process in restaurant and also improve the dining experience of customer's feedback for restaurant. This system implements wireless data access to the server. The Android Application on user's mobile will have the entire menu in details. The order details from customer's mobile are wirelessly updated in central database and simultaneously sent to kitchen and cashier. In 2013, P VijayaPrasad et al. [10] describes the development of mobile application for shopping mall directory based on Wi-Fi. It also provides information for customer to enhance their experience in the shopping mall. Shop



information like Shop names, Categories, locations, description and Floor Layout are provided in this mobile application.

In 2013, Sharadha S. Chawhan [11] published a paper called “Mobile Phone based Attendance System” through which Students login to their application, get connected to the server and take attendance using smart phones. After taking attendance in the mobile, lectures will be sent it over to the server using GPRS and attendance will be updated automatically.

PROPOSED WORK

The Scope of this project is to minimize student time in taking Xerox for their notes instead they can view notes. This application can also provide the respective college details i.e. placements, events, news and so on.

A. Android:

Android is an operating system based on Linux kernel and it is designed primarily for touch screen mobile devices such as smart phones and tablet computers. It is popular with technology and open nature has encouraged a large community of developers to work on it.

B. SQLite:

SQLite is an in-process library that implements a self-contained, transactional SQL database engine. It is a compact library with all features enabled. SQLite stores the entire database as a single cross-platform file on a host machine. It implements this simple design by locking the entire database files during writing. It is a popular choice for storing the user information within the application and it is stored in the client side.

C. Development Tools:

Eclipse and Android SDK Tools are Integrated Development Environment (IDE) for designing and developing the Java based application.

D. Eclipse:

Eclipse is the Multi-Language Integrated Development Environment (IDE) which comprises a base workspace with extensible plug-in systems. The applications are mostly developed using Java and other languages can be used by adding plug-ins.

E. Android SDK Tools:

Android Software Development Kit (SDK) which is a set of development tools. They include the tools like debugger, libraries, emulator, tutorials, documentation and sample codes. Eclipse and Net beans supports Android Development via plug-in. The older tools and platforms are downloaded at any point of requirement. Android Application are packaged file system with .apk file extension which holds the .dex and resource files etc.

This paper focuses on the development of mobile application which can be exploited for viewing the student details, uploading the notes. The previously application will helps the recipients to view their respective college details such as departmental information, photo gallery, events, college news, etc. Initially it will be added in Google play store since it is an application for particular management. The students or recipients can follow-up by downloading this application and installing it in their mobile phones or tablets.

ANDROID ARCHITECTURE

We studied the Android system architecture. Android system is a Linux-based system, Use of the software stack architecture design patterns. As shown in Figure 1, the Android architecture consists of four layers: Linux kernel, Libraries and Android runtime, Application framework and Applications. Each layer of the lower encapsulation, while providing call interface to the upper.

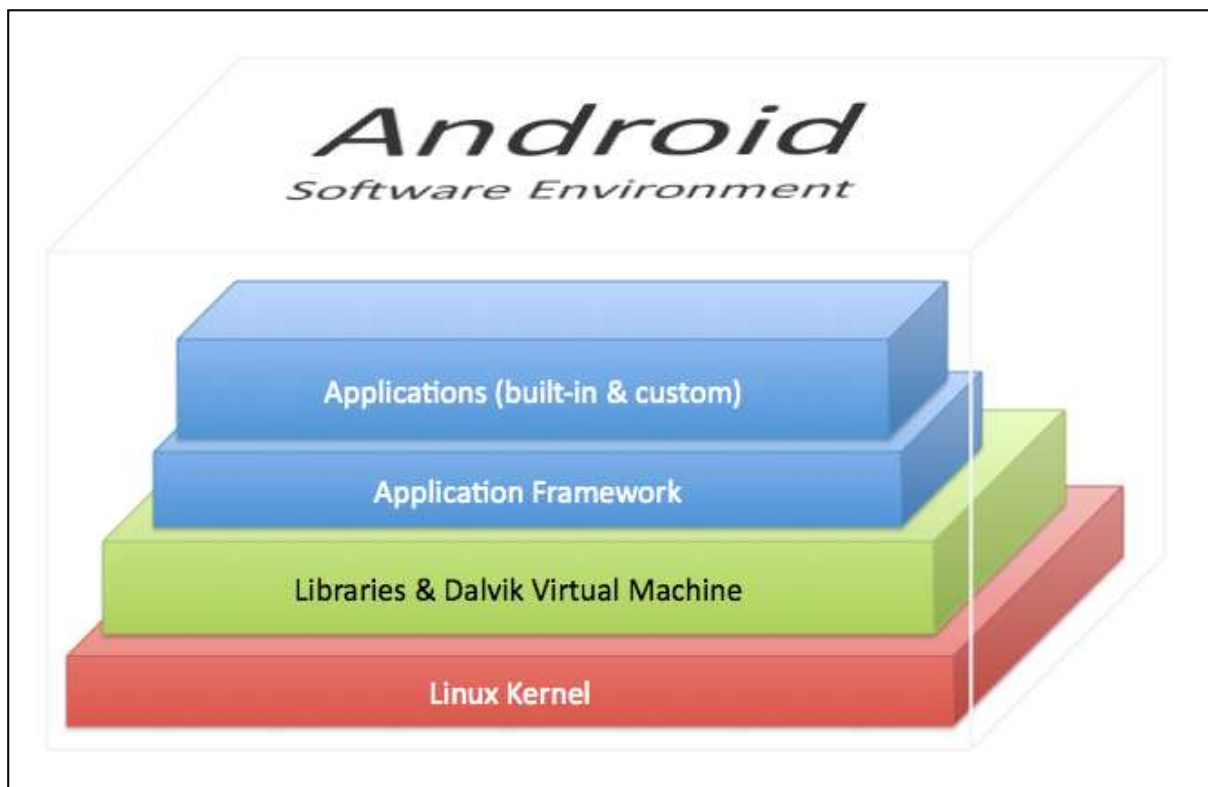


Figure 1. Android Architecture

Applications:

Android app will be shipped with a set of core applications including client, SMS program, calendar, maps, browser, contacts, and others. All these application programs are developed in Java.

Application Framework

The developer is allowed to access all the API framework of the core programs. The application framework simplifies the reuse of its components. Any other app can release its functional components and all other apps can access and use this component (but have to follow the security of the framework). Same as the users can be able to substitute the program components with this reuse mechanism.

Libraries and Android Runtime

The library is divided in to two components: Android Runtime and Android Library. Android Runtime is consisted of a Java Core Library and Dalvik virtual machine. The Core Library provides Java core library with most functions. Dalvik virtual machine is register virtual machine and makes some specific improvements for mobile device. Android system library is support the application framework, it is also an important link connecting between application framework and Linux Kernel. This system library is developed in C or C++ language. These libraries can also be utilized by the different components in the Android system. They provide service for the developers through the application framework.

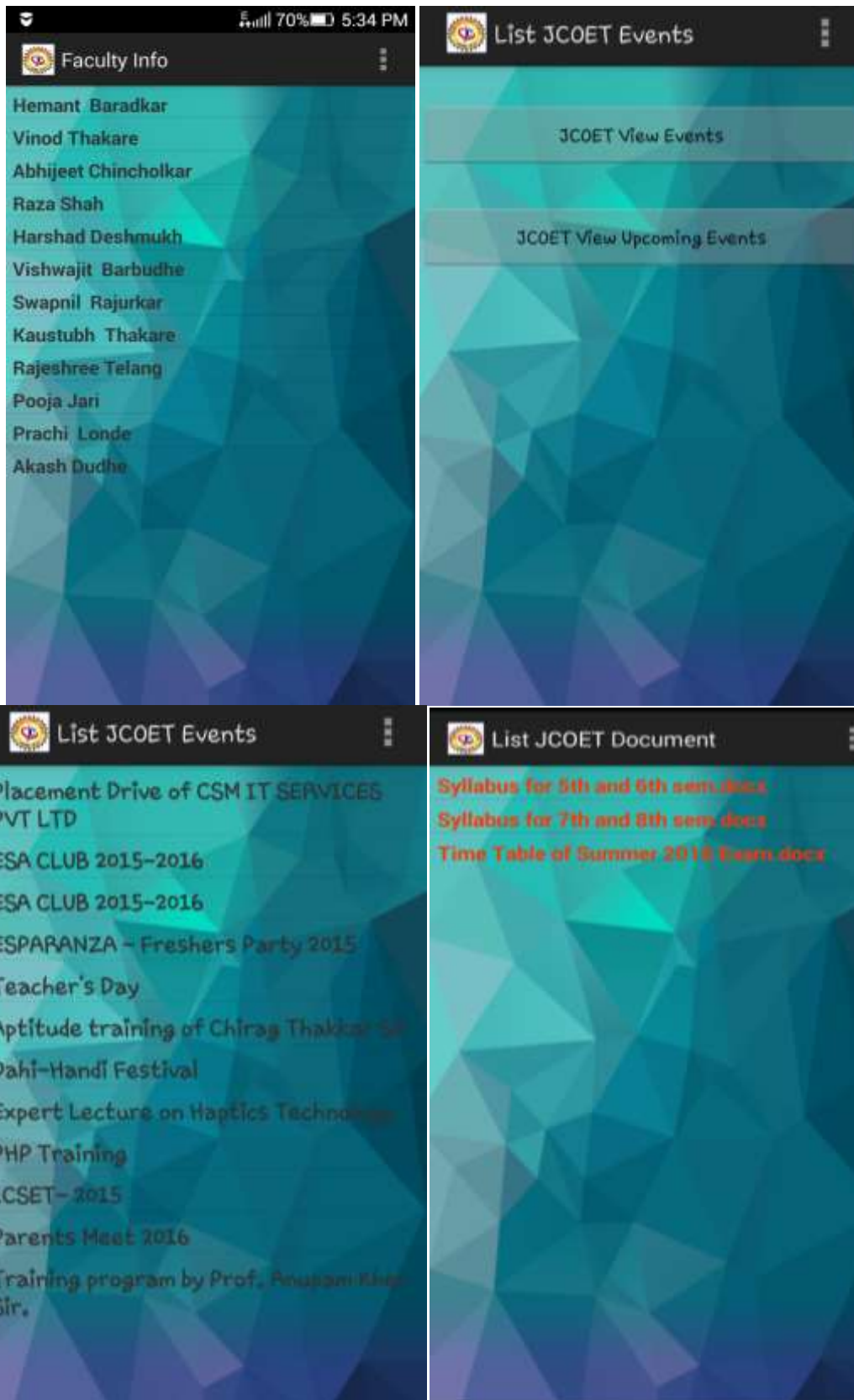
Linux Kernel

The kernel system service provided by Android inner nuclear layer is based on Linux 2.6 kernel, Operations like internal storage, process management, internet protocol, bottom-drive and other core service are all based on Linux kernel.

RESULTS AND OUTCOME

The Application consists of sequence of activities which are mentioned below:





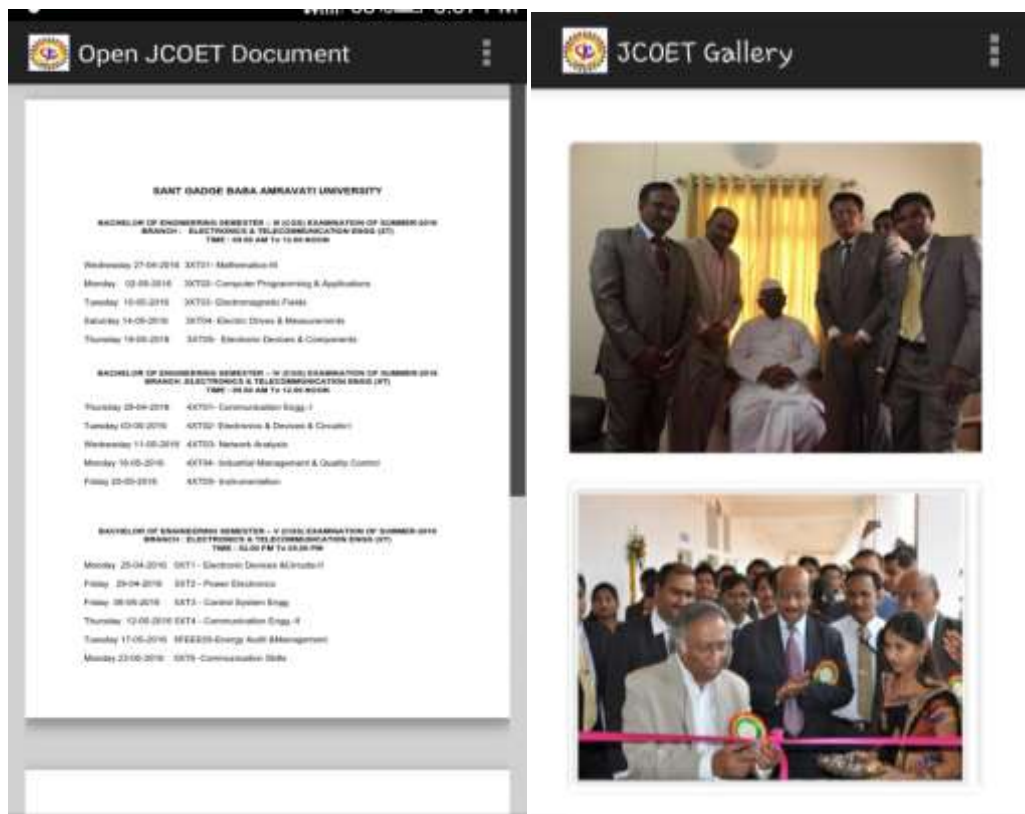


Figure 2. Screenshots of "JCOET, Yavatmal" App

ADVANTAGES

1. This application helps students to view notes sent by the faculties. In case of urgencies i.e., during examination time this application will be helpful for the students to get notes from the faculties.
2. Everybody can easily access and download the "JCOET" application freely on Android phones.
3. Students can receive notices and notifications regarding events, placements, etc.
4. Provide good relationship between the students and their respective management.
5. Save time and less effort.

LIMITATIONS

1. Continuous Internet connection – JCOET's Android App require a simultaneous Internet connection alias continuously active.
2. The video tutorials are not developed.

CONCLUSION

Finally in this paper we have presented a Student "JCOET, Yavatmal" application developed using Android software. It is mainly designed for the students to know respective details such as placement, events, notices, etc. Finally students can get notes forwarded by their respective department. This will help the students to get their respective details which saves time in taking Xerox for the students. This Application has been tested on Panasonic Eluga Z and iball Slide tab having Operating System Android 4.2.2. This Application fulfilled nearly all of the planned software requirements.

FUTURE WORK

- This App can be enhanced to include some other functionality like marks, attendance management.
- Talent management of students based on their performance evaluation can be added.
- Social networking can also be added wherein students can interact with each other.
- Online class functionality can be added.
- Can evolve as an online institution.



- Functionality of chat and messages can be added.
- Online exam functionality can be added.
- Online resume builder functionality can also be added.

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