

## Timetable Application Using Android

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### Abstract

The goal of this proposed approach is to provide schedules in a sortable format, as well as other important information such as subject syllabuses and resources. And the students will have access to all of these stuff and information under one roof. This project will be working on all Android Devices. This is created by using Android Framework. Android Studio is the Integrated Development Environment (IDE) I used to construct this system. And the Realtime-Database service of Firebase is used to store the respected data like subject name and scheduled timing. Because the majority of the users of this application will be students, the Graphical User Interface (GUI) has been maintained basic and understandable by any student.

**Key Words:** Android, application, timetable, firebase, syllabus and resources

Nilanjan Chatterjee, Souvik Chakraborty, Aakash Decosta and Dr. Asoke Nath proposed a paper on Real-time Communication Application Based on Android Using Google Firebase. In this paper the architecture and working with the Firebase Real-Time Database is explained exceptionally well [2].

Károly Farkas from Budapest University of Technology and Economics, Hungary, proposed a paper on Smart Timetable Service Based on Crowdsensed Data. This system was basically used by bus passengers to view the real-time timetables of busses.[3].

Ayeni Olaniyi Abiodun, Dada Olabisi, Talabi Olanrewaju proposed a paper on Lecture Time Table Reminder System on Android Platform. In this they created an android application to minimize the problems faced by the traditional timetable method using Android Platform [4].

### I. INTRODUCTION

Smart phones have become a part of the everyday culture among students and teachers alike. Smartphones are now more ubiquitous, user-friendly, powerful in computation, and readily available prompting innovators to delve into the development of complex mobile applications in order to enjoy the full potentials smart mobile phones can offer. A timetable is the plan of lecture time and duration, lecture venue and lecture date between teachers and students in a prefixed time period (typically a week), satisfying a set of varying constraints. Timetables are crucial for lecture scheduling and proper allocation of resources such as time and venues for lectures or examinations. A perfectly planned timetable serves as a tool for aiding time management among individuals and organizations. This in turn leads to efficiency and positive outcomes in performances.

It has become necessary however, to study the existing timetable approach of the department to enhance the participation of students in the academic activities of the department. The potentials of Information and Communication Technology (ICT) can be harnessed to enhance the current paper-based approach of publishing timetables in the college.

### II. LITERATURE REVIEW

Dr. Hosam F. El-Sofany, Professor Samir Abou El-Seoud, Hassan M. Alwadani and Amer E. Alwadani proposed a paper in which the detailed overview of the Android Operating System was covered. This paper also guides regarding to the installation on Android Studio.[1].

### III. METHODOLOGY

#### A. Overview of an Android Platform

An operating system, a middleware and key applications are all components of Android which serve as a software stack for mobile devices. The required tools and Application Program Interfaces (APIs) for developing applications using the Android platform through Java programming language are provided by the Android Software Development Kit (SDK).

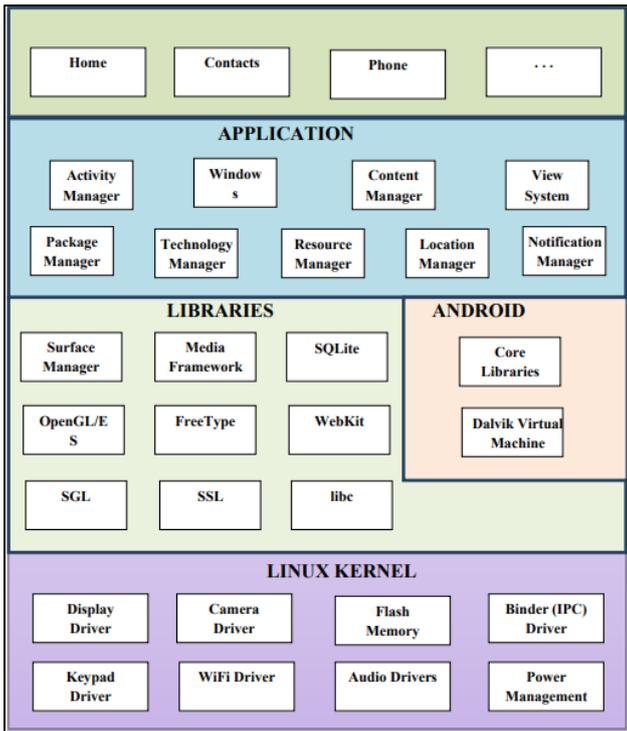


Fig. 1: Architecture of Android

B. Overview of Firebase Database

Firebase is considered as web application platform. It helps developers“ builds high-quality apps. It stores the data in JavaScript Object Notation (JSON) format which doesn’t use query for inserting, updating, deleting or adding data to it. It is the backend of a system that is used as a database for storing data.

Firebase provides services like a real-time database and backend. An API is provided to the application developer which allows application data to be synchronized across clients and stored on Firebase's cloud. The client libraries are provided by the company which enables integration with Android, IOS, and JavaScript applications.



Fig. 2: Firebase Realtime Database

C. Existing System

The preparation of the timetable for the university is done by a timetable committee set-up by various schools (faculties) including the e-exam center which serve as a unit on its own. Members of the timetable committee are mostly exam officers from different departments. The timetable is automatically generated after the timetable committee successfully allocate time slots, space, venue, lecturers, etc. considering the number of the students for each event (lecture/test/exam) and the volume capacity of the venues. Then it is manually compiled and distributed in paper format. Each department then extract courses that are relevant from the school (faculty) timetable.

After the extraction and production of the department’s version of the timetable, the exam officers then endorse the timetable and seek the Head of Department’s approval for publishing the timetable. The approved timetable is then finally pasted on the department’s notice board because the notice board is the available medium of passing correspondences across to the students. The students upon contact with the timetable on the notice board become responsible for the proximity between the timetable and themselves.

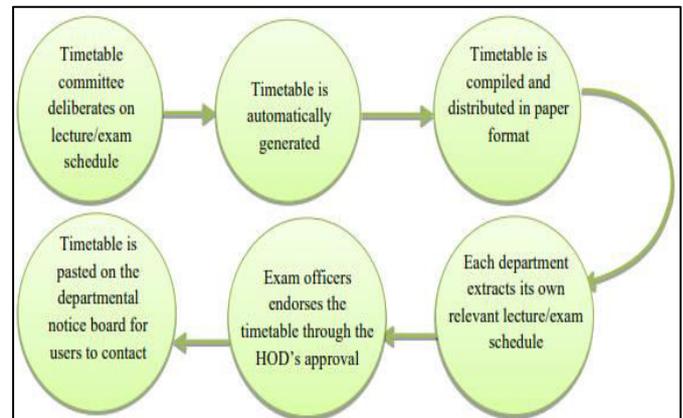


Fig. 3: Diagrammatic Representation of the Existing Timetable Approach

D. Proposed System

The aim of this proposed system is to display timetable in a sortable manure and also provide other essential things such as syllabus of subjects and resources for them. And these things and information will be available to the students under single roof. As most of the users of this applications are going to be students, the Graphical User Interface (GUI) of this application is kept very simple and understandable by any of the student.

The proposed application uses the Firebase Realtime Database. Therefore, the changes in the timetable of database are very fast and secure as well as simpler as compared to SQL databases.

This application will also provide not only the syllabus of every subject but also the required resources like names of the reference books for each subject.

The names and the contact details (email Ids) of the respected faculty members will also available in this application.

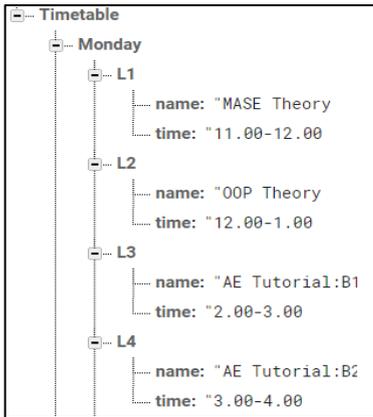


Fig.4: Database Structure

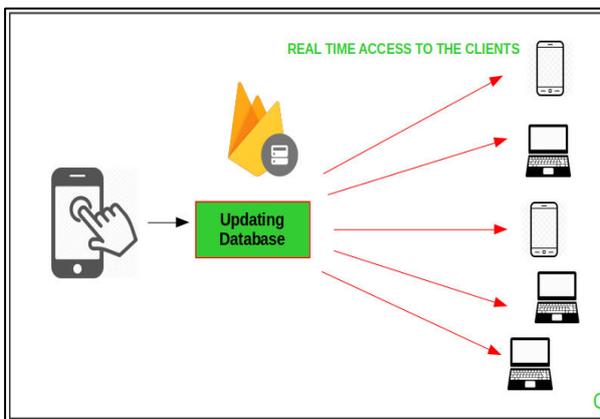


Fig.5: Application and Database Relationship

#### IV. Results and Discussions

These are some results of our project in the form of snapshots.

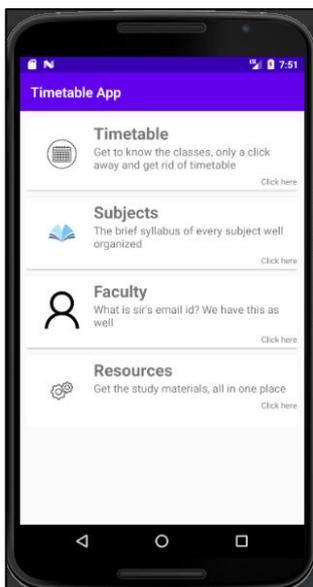


Fig.6: Home Page

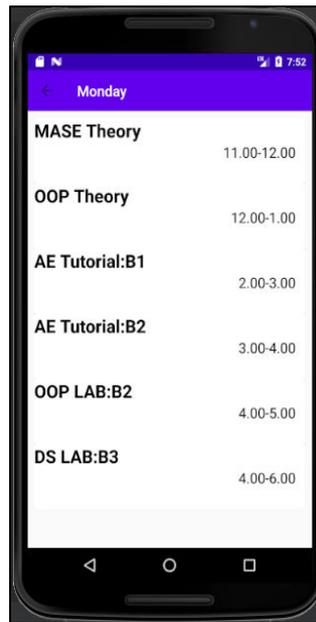


Fig.7: Timetable Activity

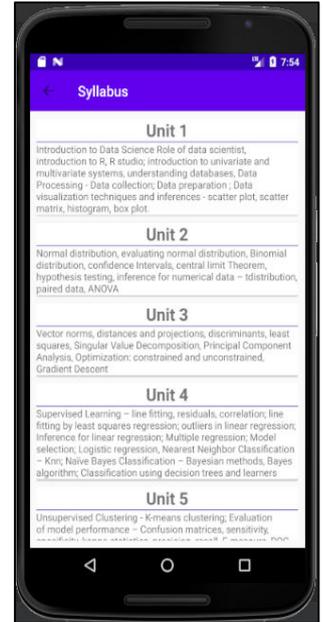


Fig.8: Syllabus Activity

#### V. Future Scope

The proposed system is more cost efficient; this claim is made on the fact that the proposed system does not need the heavy and expensive configurations. When compared to an existing timetable method this form of available conventional irrigation system, this form of making timetable available to students as well as faculty members is much simpler and more secure.

This system can be altered and updated in response to changing dynamics of the educational system. The open discussion forums could be added for better study related communication within students.

#### VI. CONCLUSION

The proposed system is less expensive; this claim is based on the fact that it does not require the bulky and costly setups.

When compared to a current schedule approach, this approach of making timetables available to students and faculty members is significantly simpler and more secure.

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