
ANDROID APPLICATION FOR STUDENT MANAGEMENT SYSTEM USING KOTLIN

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Abstract

Student Data Management System is an android application to store and manage student information in modern educational institutions[2]. Traditionally, it has been managed using pen and paper which is not very efficient. Hence the goal of the project is to create an android application for Student Management for storing and retrieving the data of students and faculty for efficient functioning of the academic institutions. The application is to be created with kotlin which is announced as the most favorable language for android developers by Google[5][6]. The data for the application is to be stored in the Android Room Database. User Interface is to be provided using v7recyclerview module, which provides efficient and user friendly layouts. A Smart Assistant allows students to ask queries and get answers from the application by text and voice is to be created using Alan App in kotlin. The users could manage attendance[1], marks and proceed in the track and required data will be stored and managed for future references too.

Keywords: *Android application; Record management; Smart assistance; Kotlin; Student Data Management;*

1. INTRODUCTION

Traditionally Student management is maintained using pen and paper, but it is difficult to handle and maintain gargantuan amounts of data manually. Manipulating data in such cases is very difficult, since it requires manual searching, which takes more time. It also has other limitations such as exchange of information, mislay of records. Maintaining daily attendance records and calculating the total attendance is one another challenging task in the traditional system. Also tracking fee payment status for individual students manually may result in inaccuracy. Data maintenance should be easy and must not be time consuming for an academic institution to handle such a huge amount of data in today's world to run the institute more efficiently.

As a solution we had planned to create an android application for the student management system using the kotlin programming language. It helps you manage all the student-related data in a well-organized manner. A Student Management System gives you a unique ID against every student. And using that ID, you can effortlessly track the fee status, assignments, exam results, grades, personal information within seconds. This new way to store and manipulate the student data efficiently would be most useful for the accounting department, academic administrators.

The developed android application will be mainly used by three actors: students, faculties and administrators. The students could apply for leave and the faculty could approve the same. The faculty annexes and edits marks of the students and the students could view it. The faculties and administrators could also view the class overall report. The Faculty could upload class notes and lecture videos, which would be useful for the students to learn when they are at their home. Also by using the application, the faculty could create quizzes and students are able to attend it interactively by which students fall in

endearment with learning. The administrator could annex and remove students and faculty respectively.

2. LITERATURE REVIEW

[1] Title: “Android Based Student Information System”

Author: Chandrakala G C, Geeta Kalshety, Suma Paddki, Anuradha T

This paper provides an efficient method for Android application for student Information system which allows many administrations to efficiently manage students and faculty members. This system mainly provides the efficiency for managing the student information and it also provides the query management system through android mobile application.

[2] Title: “Student Management System”

Author: Deepak Saini, Payal, Mansi Ghadigaonkar, Prof. Sujata Kadu

A web based student management application is created which assists users in working with day to day activities regularly. It provides a good way to reduce boring work and provides greater efficiency by reducing the time taken for the manual process. Also it provides an awesome User Experience. The information is also stored securely so that outsiders could not access it.

[3] Title: “A Review on Kotlin and Android Studio Java”

Author: Mr. NiketKeny

It provides a well researched paper which may provide the conclusion for the developers to decide whether to use Kotlin or Java for developing android applications. It not only explains the differences between them but also provides the analogies in both languages.

3. PROPOSED SYSTEM

Student management system is an application which is used to store and manipulate the information of an educational institution effectively. The student management system will be able to manage institute information which includes exams, results, courses, attendance, leave tracker, fees status, feedback, quiz, lecture materials by various actors like student, faculty, admin respectively. The application is furthermore to be provided with debonair assistance by which the students could elucidate their queries. Android studio is the platform where student management applications will be created. It is a platform where the standard software is created for android developers. This IDE is more efficient than the other IDEs.

Kotlin is the language which is used to develop the Android application as a back-end because Java is more restricted to the idea of Object oriented programming and also Kotlin provides more powerful features than Java. So the development of the Android Application, Kotlin is the preferred language than Java.

XML is the language which characterizes the information and is used to store and sort data and it is for many things but here XML is used as a User Interface for the android application.

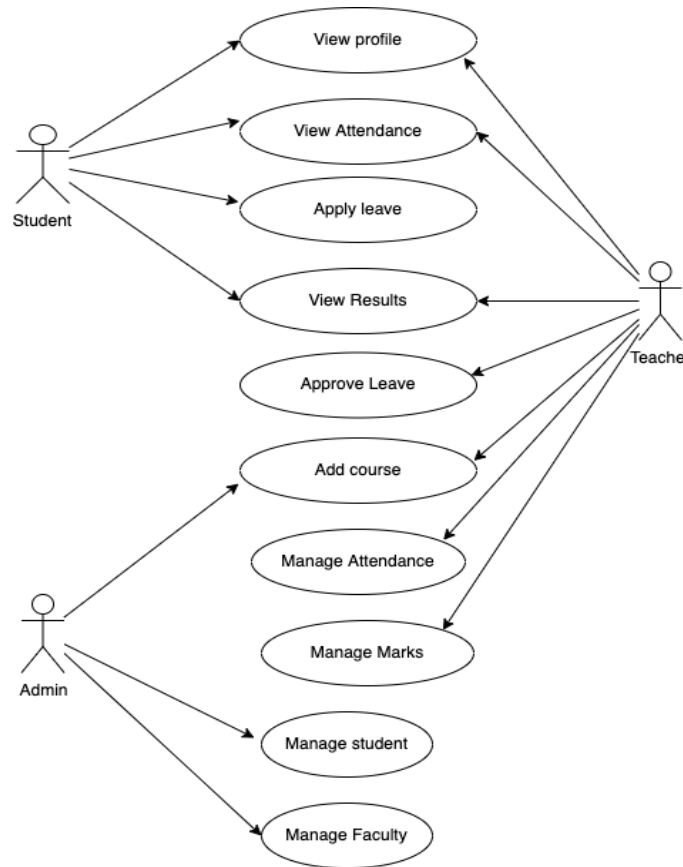
Android Room database is used to store the data in the database which provides annotation to perform any operation in the database but in SQL we just provide the underdone queries.

recyclerView module in kotlin recycles the components by keeping them on the screen and unambiguously changing the data represent and that authorize the user to scroll the view.

4. METHODOLOGY

In the Student Management System, Admin is the actor who is responsible for adding Student and Faculty details. Faculty and Student can Login into the application. Faculty can be able to annexe Course details, Mark attendance for the students, Add exam details, Add Marks, Approve Leave for the students. Students can be able to View Attendance, View Marks, can attend the Exam, Can Apply the Leave.

5. WORKFLOW



6. CONCLUSION

As a result of the Student Management System, the teachers and students will be able to communicate with each other in case of any uncertainty. By using kotlin, an already matured programming language for android app development, we have also provided an excellent user experience. It lessens the resources required such as paper and manpower to handle the data in the traditional way and provides huge efficiency by lowering the time taken for the manual task. Also the system is much secured so that no outsiders could access the institute data. Finally, the application is much more efficient, user friendly and performs the assigned work successfully.

7. ACKNOWLEDGEMENTS

The authors hereby like to elongate our acknowledgement to Bannari Amman Institute of Technology and all individuals who help directly or indirectly on completion of the project. Special thanks to our guide Ms. Ananthi P for the support and encouragement which made the completion of the chore possible.

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