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# Implementation of Attendroid – An Attendance Monitoring System

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**ABSTRACT:** In today's scenario, students' evaluation especially to mark their presence/ attendance and to record their marks in the class meeting session are the essential task for a teacher, since marking the attendance is helpful in regulating the students so that they can attend the classes on regular basis. Apart from, it is also beneficial for the mentor as they can verify that how many students are present in the class and they can easily evaluate the performance of the students in various curricular activities. To keep in touch with students this application provides help for the users in marking the attendance by using mobile devices. This paper highlighted a mobile application for marking the attendance of the students and management system. Moreover, this application also helpful for the teachers in marking and editing attendance and also for adding the marks in the database system for further retrieval.

**KEYWORDS:** Mobile application, Student attendance monitoring system, Android mobile application

## I. INTRODUCTION

In existing situation, it's very important for an evaluator to mark attendance and to record the marks of the students on regular basis so that students can attend the class meeting session regularly. As we know that recording of marks is mandatory for analyzing the performance of the students in their exams. The main role of any institution is to manage and maintain students' information.

Traditionally, a log book was used for marking the attendance and for entering the marks of the exam. After that, this task was completed with the help of a desktop application that was installed either in desktop or laptop. The main defect of this system is that it is not handy and cannot be kept anywhere for entering the marks and attendance. Therefore, implementation of the mobile application is a milestone for monitoring the attendance and for marking system.

For maintaining the record of the attendance of Students and for reducing the pressure of paperwork, an evaluator can install this application in their mobile phones. This application can be used by several users like Teachers, Students and Admin with personal login credentials.

## II. LITERATURE REVIEW

1. V. Somasundaram, M. Kannan and V. Sriram proposed that for enhancing and enriching the present educational system the recent trends in the field of technology e.g. in mobile application, in ICT and innovative ideas in the studies of behavioral sciences were helpful. For this study mobile technology was selected. The methodology of this study consisted of an android based mobile attendance management system through which recording of the attendance can be done by mobile devices using ASP, NET and SQL Server. Findings of this study are- (i) to store, retrieve and deliver the information about presence or absence of the students, (ii) to assist organization to keep, track and maintain information about students regarding their internal marks and (iii) also to deliver the report to their parents.
2. Dr. D. Asir Antony Gnana Singh, Dr. E. Jebamalar Leavline, P. Meera Vijayan have developed a mobile application for marking the attendance of the students and for entering their marks. The main aim of this software are-(i) to maintain attendance and marks of the students on a regular basis, (ii) to verify the number of students present or absent in the class and (iii) to provide help to the subject handlers, staff & the authorities

so that they can use this system easily and efficiently in marking and editing attendance and also provide help in adding the marks. Apart from this it also provides an alert message to students for their short attendance.

3. S.P. Avinaash Ram and J. Albert Mayan revealed a study for the registration of employee and their attendance through mobile application. The objectives of this study are- (i) to bring up to date and trace the attendance of the employee regularly, (ii) to provide help to the staff and the authorities so that they can take attendance. (iii) To check the number of employees and their regularity in the organization & (iv) to provide the details of every employee.
4. Mohammad Salah et al designed a mobile application attendance system which is based on the time and location. The main aim is to take the attendance of the employees according to their location if they are present in organization or not. This application was developed via using android.
5. Riya Lodha et al designed an application for the attendance management system. She has used Bluetooth enabled devices with wireless technology for marking the attendance. In that way, it is helpful in reducing the time taken for the attendance marking.
6. K. Akhila et al developed an android-based mobile application which is used in tracking the attendance of the students. It saves time, provides reliability and is also helpful in controlling and taking attendance using android mobile phones. Besides that, it is helpful in minimizing the efforts of the staff members. It is potent and accessible for the users.
7. Rakhi Joshi et al also developed an android-based attendance management and a smart learning system which includes a SQL server. This system is useful in marking the attendance through smart phone and also provides an alert message to the student as soon as their attendance goes down.

### III. FLOWCHART

The given flow chart shows that this application can be installed in the mobile devices of the users so that they can access the marks and attendance. The two groups of users are students and staff. The student user consists of students and parents. The staff user includes the staff members, faculty member, principal, etc. of the educational institution. The students and staff will be provided with different login credentials which students can use to check their attendance and marks whereas staff can edit the student information.

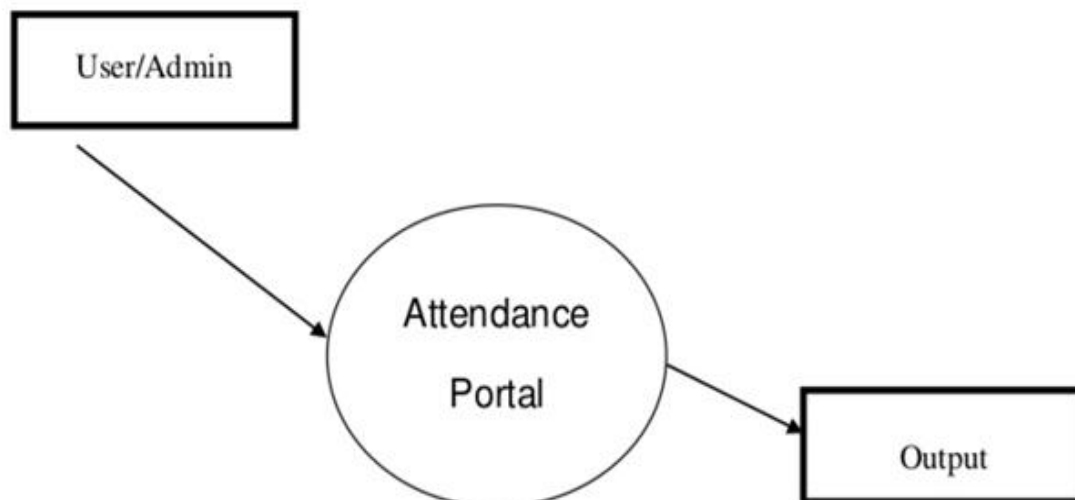


Fig 1.1 Level 0 data flow diagram

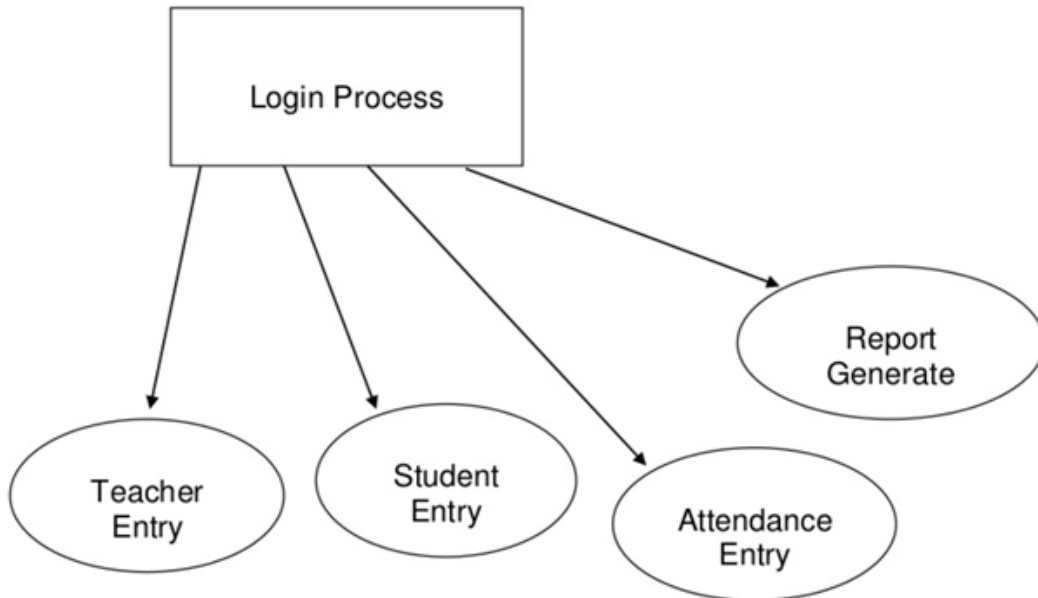


Fig 1.2 Level 1 data flow diagram

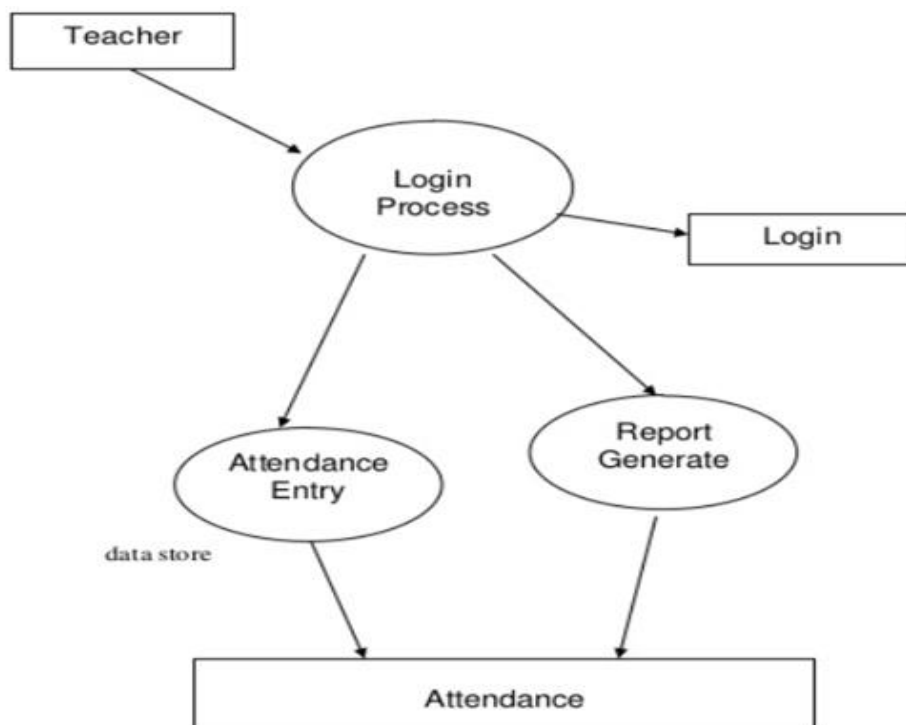


Fig 1.3 Level 2 data flow diagram

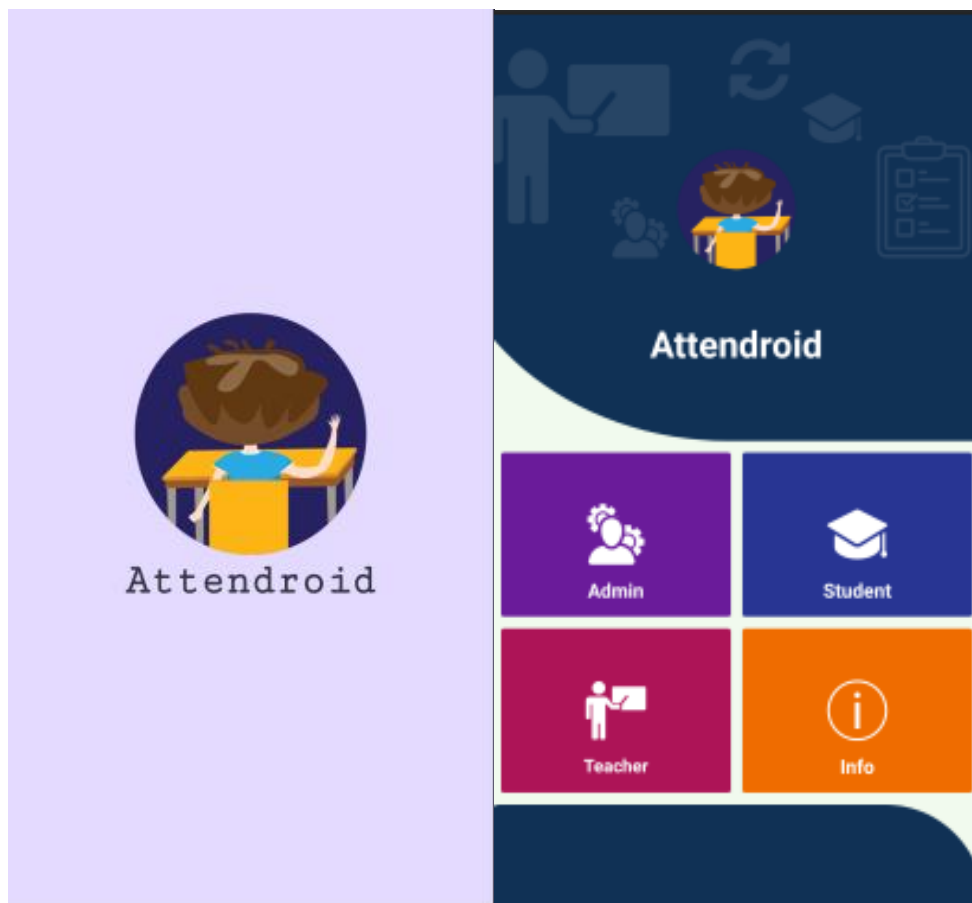
#### IV. PROPOSED METHODOLOGY

In the Android world we have developed an android based attendance monitoring system which can be used in school or campus by students and teachers. To access the attendance details of the students this application can be installed in the mobile phones of the users such as student and teachers.

1. Firebase Realtime Database Storage- With the help of NoSQL cloud storage, data can be stored and synced by the users. Firebase Realtime Database is hosted in a cloud. Data is stored in JSON format in real-time database and synced with all linked clients. To provide the application with the current value of the data and data updates a single API can be used by the Firebase database. All the data is synced in real-time.
2. Admin module - After an admin is logged in, he can perform various tasks such as add or remove a student or teacher, view attendance record of the students. Admin can also generate report, change password, update his profile and also provide help to the faculty and students.
3. Teacher module- In the teacher page, Teacher can take attendance of the students and store them using their name and subject code, and also they can view previous records of the students.
4. Students module- When a student logs in using the credentials provided by the admin, he can view his attendance in the attendance sheet and with the logout button student can logout from the app.
5. Text button - Text buttons are used for less-pronounced actions, including those located in dialogs and cards. In cards, text buttons can help in maintaining an emphasis on card content.

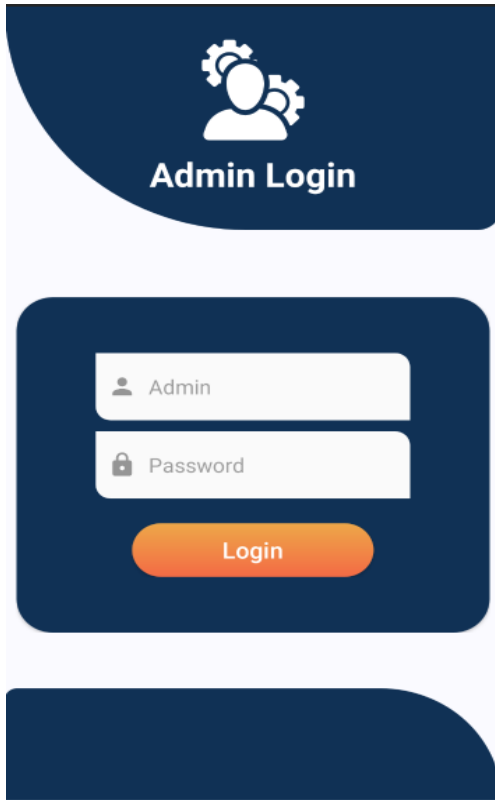
## V. IMPLEMENTATION

Attendroid provides many features by which we can store the attendance of students. The figures below contains prototype of the application which shows splash screen, login screen of admin, students and teachers, and dashboard for student and teachers.

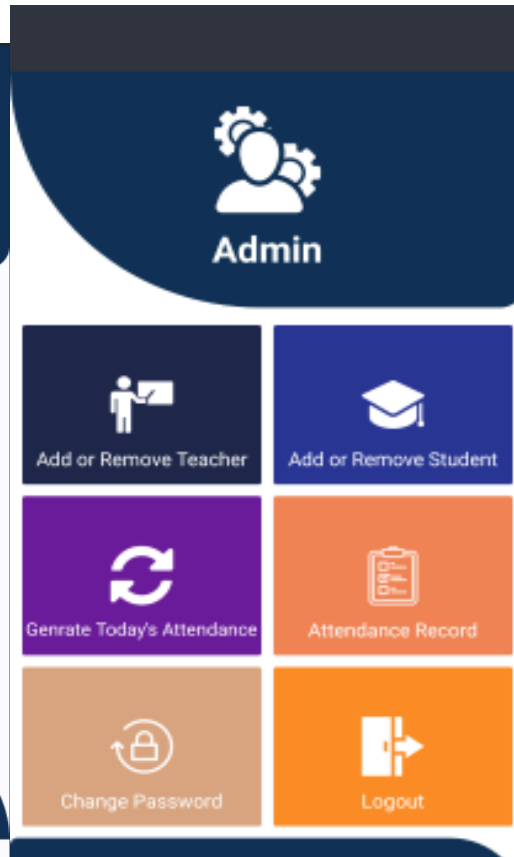


Screenshot 1.1 Splash Screen

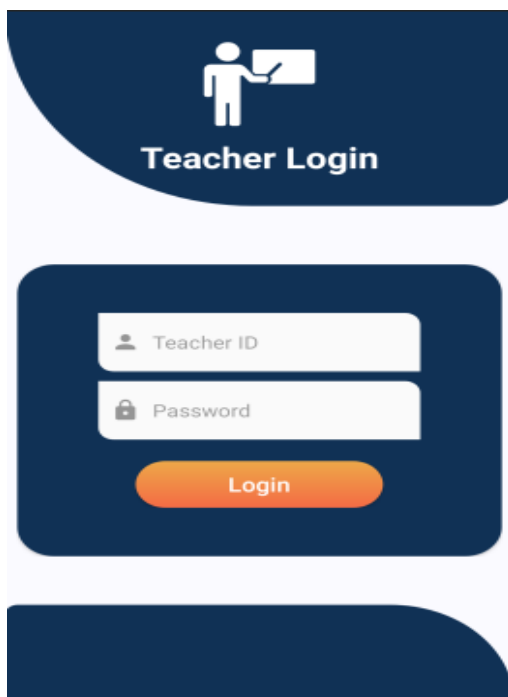
Screenshot 1.2 Dashboard



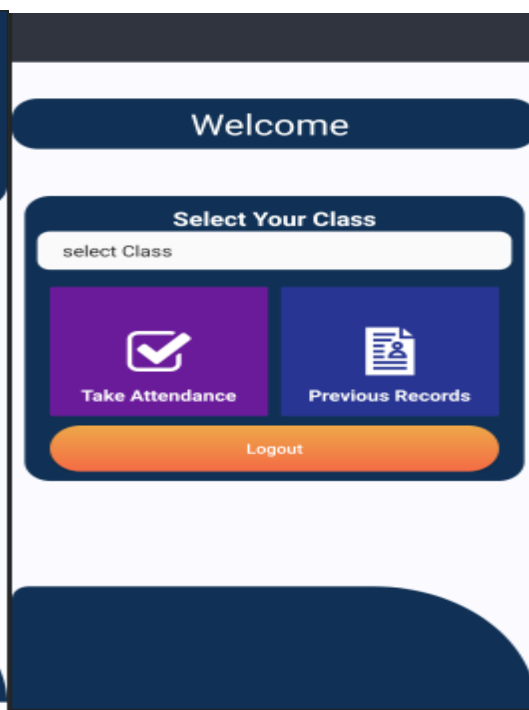
Screenshot 1.3 Admin login page



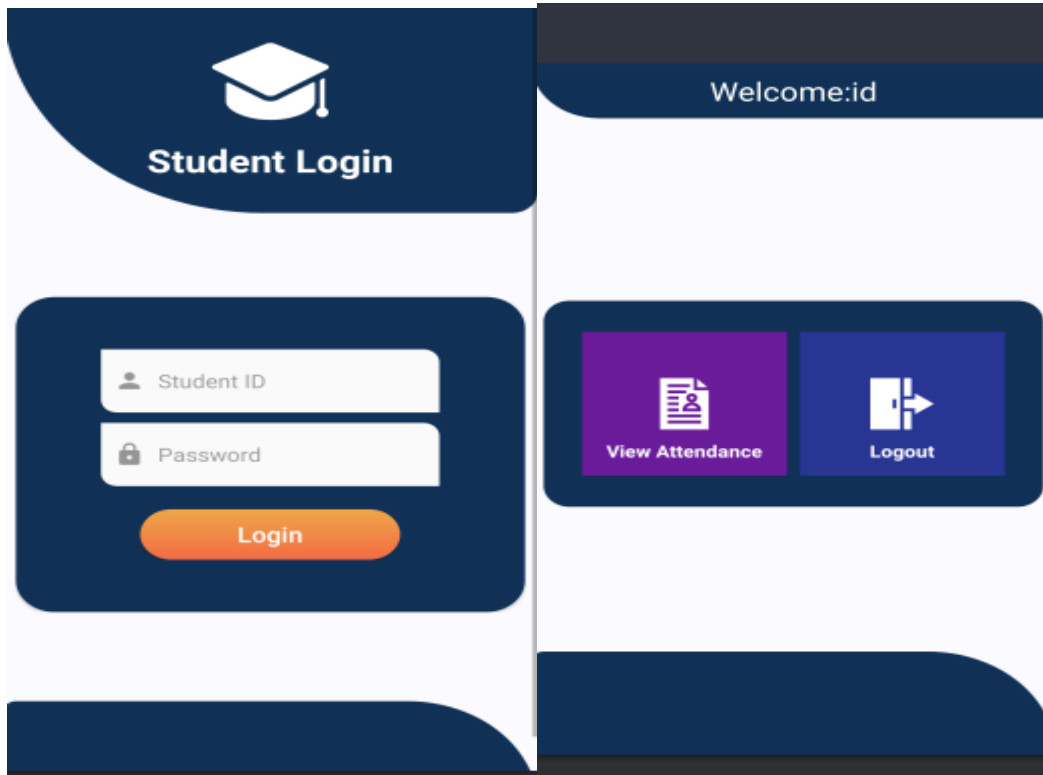
Screenshot 1.4 Admin Dashboard



Screenshot 1.5 Teacher login page

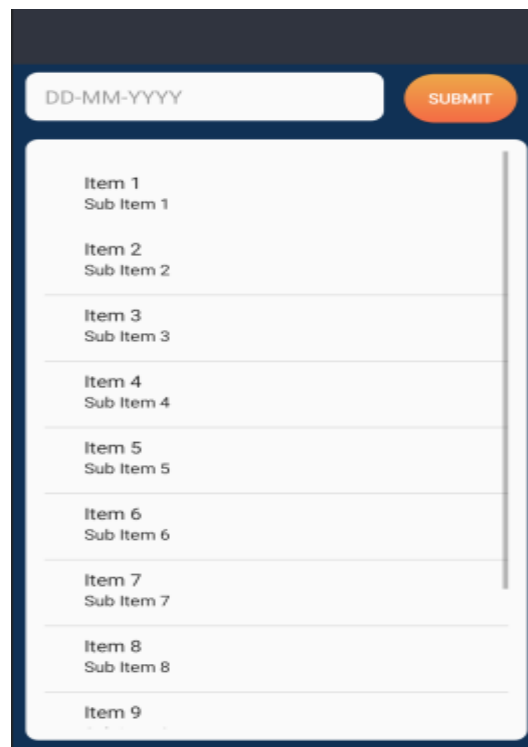


Screenshot 1.6 Teacher dashboard



Screenshot 1.7 Student login page

Screenshot 1.8 Student dashboard



Screenshot 1.9 Attendance sheet

## VI. RESULT

Attendroid application is implemented using Android Studio 4.1.1 and Java is used as the coding language. This application should be able to run on most of the android devices. Screenshot 1.1 describes the splash screen of the application with the app logo when the app is started. Then we have three separate tabs for admin, students and teachers login with different icons for each. In the admin page we have 6 different icons buttons which provide different features to the admin. The first two icons are for adding or removing a student or a teacher. The third icon is for generating the attendance report. The next icon attendance record is the view the previous attendance records of the students. Then we have the change password icon which can be used to change the password and the last icon is the logout icon where admin can logout. In the teacher page we have 3 icons buttons which are take attendance, previous records to view all previous records of the student and logout icon. Then at last in the student page we have a view attendance icon where student can view their attendance and the logout icon.

## VII. CONCLUSION

This research paper focuses on the features and facilities which are provided by the Android App. This app is helpful in reducing the pressure and stress of the teachers so that they can do their task easily and efficiently. It is also helpful in reducing time and manual work done by the teachers. This app allows in reduction of pen and paper work and everything is monitored digitally which also help in saving trees. Students can also generate the report of their attendance. Attendroid will be developed with such features in which teachers would be able to post the notes, announcements about the assignments, tests in the application.

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