Mobile Application for College Notification

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ABSTRACT

Technology has changed both our daily routines and manner of life. To be informed of any relevant facts regarding alerts. Stu- dents require applications that support smart phones for events that take place on college campuses. There is a high probability that students may miss the important information because notice boards, calling systems, and in-class announcements are the conventional methods of informing students about their training places and extracurricular activities. However, as today's young are increasingly active on mobile devices and can quickly use these applications, this scenario may be remedied by utilizing mobile applications that make it easy for kids to be notified. Using messaging services like WhatsApp or others, it might be extremely difficult to communicate with every pupil. Social media's user base is quite small, which makes it swift information dissemination is challenging. In this project, tools are proposed for a mobile application that classify event information according to its nature, such as technical or non-technical. Students can utilize this program without any problems even if they are unable to frequently browse the college website. For all campus activities, this smart- phone application will serve as the main hub for push notifications. This interface facilitates publishing of notices by the appropriate faculties, improving communication between staff and students. This Android mobile software is easier to use, quicker, safer, and more secure.

Keywords- Centralized, Mobile, Student Centric, Android application, Java, Firebase, Notification, Events, Management.

1. Introduction

Recently, the most important information about training and placements has been shared via mes- saging apps like WhatsApp and Telegram. This is a very inefficient method because there are many other groups and discussions about daily life on these apps, and the resulting chaos causes students to miss the most important and urgent messages. The professors and students become dis-organised as a result, which may eventually affect the stu- dents' academic performance. Events in colleges are extracurricular activities that aid students in honing their abilities and developing their skills in the particular fields of their interests. Technology can help us avoid this misconception. Previously, notice boards, announcements made in class, and leaflet distributions were used to educate students about activities.

Currently, Android is the application platform with the largest global user base. Every major firm has at least one app available on the Google Play Store for better management of its resources and personnel. The majority of college students would gain from an android app. It could help estimate the number of event participants by increasing the num- ber of message recipients and possibly even revealing the exact number. It is necessary to develop a better application so that faculties can better manage the students and their workload and so that students can experience college life with more possibilities. Students that keep up with college activities never miss the chance to represent their school, and college events attract a lot of participants.

2. Problem Statement

The organisers of the event are leaving. the news about the activities through social media platforms like WhatsApp, Telegram, etc., although some stu- dents can access those messages while others might not since they don't fully grasp the message. There- fore, they are unable to participate in the events, whether they are technical or not. Social media is also restricted, and the faculty member or event or- ganiser must inform every region in a particular de- partment group about the event. It will therefore take time and be busy. Everyone will receive the information at once without any forwarding if there is a mobile application that informs users/students when administrators/staff post events, guaranteeing that no one is left out.

3. Related Work

This university campus software was primarily devel- oped for uses where students lack any sort of login. The view-only authorization is all that the pupils can access. The system's lack of authentication makes it vulnerable to abuse by outside parties. Now, straightforward apps also provide the authentication procedure.

This application outperforms existing Android or web-based applications in terms of functionality, student demands, technology, and interface element placements utilised in the design, development, and usability of an application. This system's drawback is that it does not include emergency delivery notice functions, instead sending messages to consumers via Bluetooth technology. Because information is obtained slowly and data isn't kept properly, the current system isn't user-friendly. Currently, HTML, CSS, and PHP are used. Being a web-based application, the user must visit the homepage each time, which takes time and raises the possibility that they would miss important college-related news.

An Android application implementation identi- cal to this one was utilised for college trainings and placements. This programme displays a list of all placement events and student data it possesses, followed by a new page with the list. One issue with this solution is the absence of smartphone notifications for the most recent occurrences. In order to ensure that the programme is updated, users must check it frequently. This equalises it with webpages and prevents it from making the most of an android application's capabilities. Another issue is that when offline registration is used, the registration process is not secure. Google Login is a tool that many applications utilise to secure their users and improve user authentication.

The authors advised beginning an Android ap- plication for managing college events using a SQLite database to hold user data. This is inefficient since the predicted amount of data cannot be stored in a SQLite-based database due to memory limitations. It was also suggested that notifications and events be sent to users' devices via Bluetooth technology. Bluetooth can transfer data correctly but cannot be used over long distances, such as from the college office to the devices at the students' homes. By using a cloud-based database and internet transmission, this system may be amply verified. The suggested method differs from school applications in that it focuses on college entities and employs distinct department filters.

4. Proposed Work

System Architecture

The application's process is explained in the architecture diagram. It is easy to understand the events that each department is hosting after students register since their information is saved in the database and the event board module is forwarded to a navigation module that lists all the departments by cate- gory. Students are then able to log out of the application. The architecture of the proposed system shows how information is transmitted and received between various users and the database.

Login and Dashboard

The application's Events tab informs all users, including students, faculty, and non-teaching staff, about all forthcoming activities taking place in the college. Every user has access to comprehensive in- formation about every event listed on our application. Only coordinators have the ability to add events to the application or edit events that have already been listed. All users, excluding coordinators, can only access event information
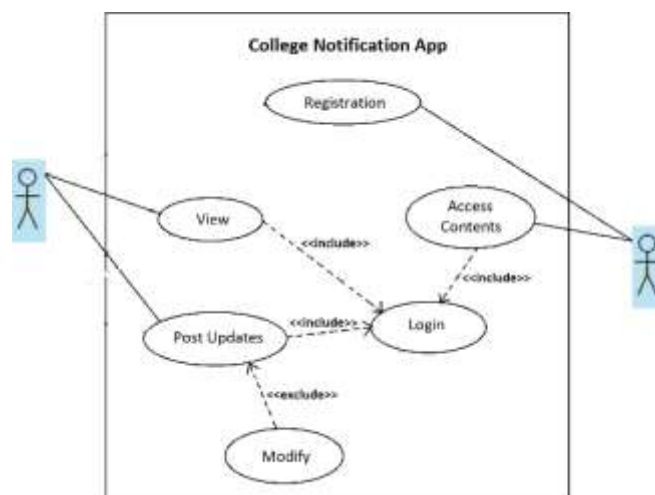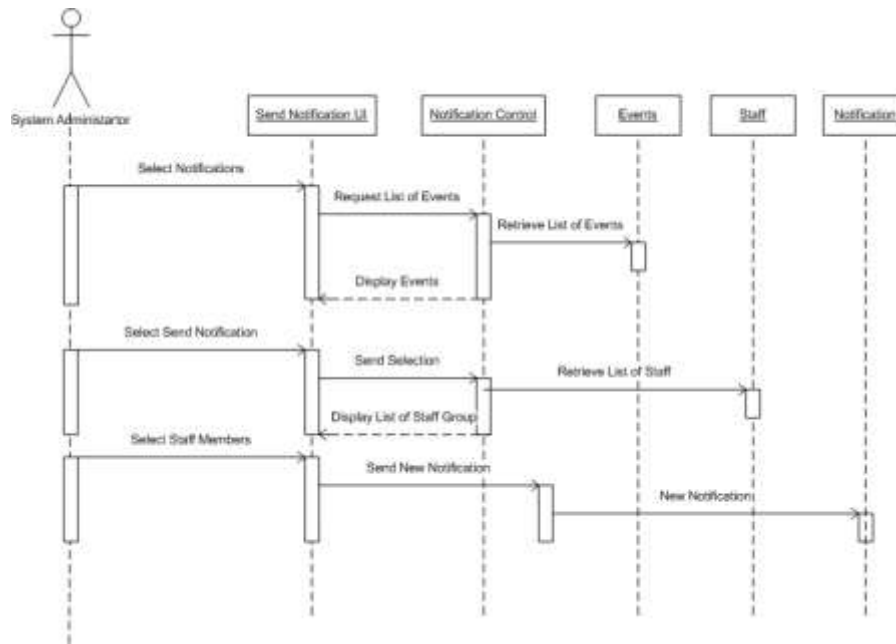

Figure 1: Use Case Diagram

Figure 2: Sequence Diagram

Category Filter

In this system, the department is used to determine the category. Several departments' names will dis- play in the navigation bar, allowing us to go to events that fall under a specific department. The ability to look up departmental events is really helpful for stu- dents.

Adding New Events

A specific group of students can receive new information or events based on their year, department, and division from authorised faculties. A new event must have a title, description, category, as well as the name and contact information for the organising commit- tee before it can be added. All that is needed to add a new Notice are the title and description.

Figure 3: Login

Figure 4: Register

Notification

Teachers can use the notification system to send a crucial message after posting the event. Simply enter the notification's head and body information, then press the "Send Notification" button. The pupils who have installed the application will thereafter receive the notification.

Main Interface

A side navigation bar that provides access to the ap- plication's major features is included in the main in- terface. The relevant tabs allow you to view events that the faculties have posted. These messages can be filtered by users by pressing on the appropriate filter.
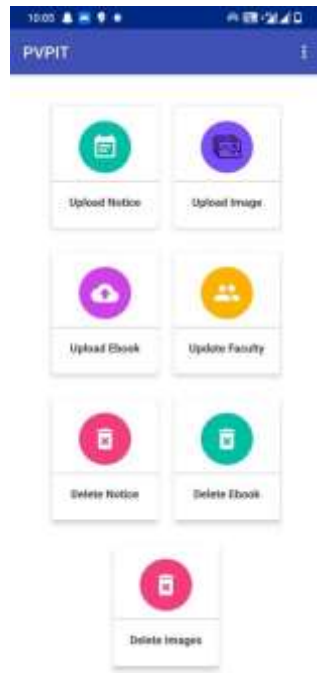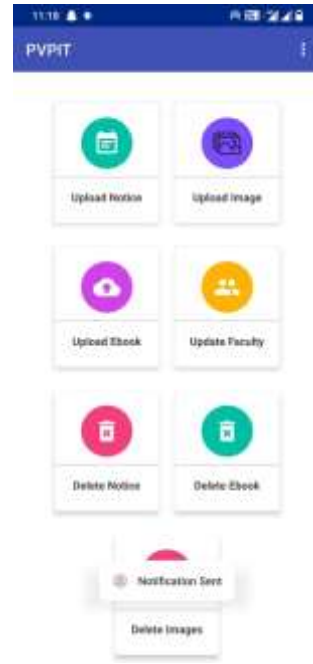
Figure 5: Add event   Figure 6: Notification Sent

Security and Privacy

The suggested system uses firebase authentication and authorisation to safeguard the user's data. Dif- ferent users are granted access according to different Firebase security policies. It offers a means of letting each user's access be managed.

5. Modules

Authentication module: This module is respon- sible for user authentication, registration, and login. It ensures that only authorized users can access the app and that their information is secure. Some algorithms that may be used for this module include OAuth, JWT, and Firebase Authentication.

Figure 7: Interface

Notification module: This module is respon- sible for sending notifications to users when there is new information to share, such as campus events, deadlines, or emergency alerts. Some algorithms that may be used for this module include Firebase Cloud Messaging, OneSignal, and Pusher.

Database module: This module is responsi- ble for storing and retrieving data related to campus activities, events, and deadlines. It ensures that the data is accurate and up-to-date. Some algorithms that may be used for this module include Firebase Realtime Database, SQLite, and MySQL.

6. Advantages

Students will get notified whenever faculty posts about events, results or placements.

- Complete work on time.
- Management of workflow can be done easily.
- Increase the accessibility.
- User-friendly

7. Required Tools

Andriod Studio

Andriod Studio is based on IntelliJ IDEA, a Java in- tegrated development environment for software, and incorporates its code editing and developer tools. To support application development within the Android operating system, Android Studio uses a Gradle- based build system, Android Emulator, code tem- plates and GitHub integration.

Android SDK

The Android SDK is a software development kit that includes a comprehensive set of development tools. These include a debugger, libraries, a handset emu- lator based on QEMU, documentation, sample code, and tutorials.

Java

Java is a widely-used programming language for cod- ing web applications. It has been a popular choice among developers for over two decades, with millions of Java applications in use today.

Firebase

Firebase is a mobile app development platform which offers a huge variety of tools and services to its users to make app development easier. Firebase manages the backend aspect of the applications, giving users more time to work on interface and other features of the application.

8. Result Analysis

User engagement: This can be measured by the number of active users, the frequency of app usage, and the duration of app usage.

Notification effectiveness: This can be mea- sured by the number of notifications sent, the open rate of notifications, and the click-through rate of notifications.

User satisfaction: This can be measured by conducting user surveys and analyzing user feedback.

Impact on communication: This can be measured by comparing the response time of users before and after the implementation of the app, and by analyzing the number of communication-related issues reported by users.

Adoption rate: This can be measured by compar- ing the number of users who have downloaded and installed the app with the total number of students and faculty members in the college.

9. Conclusion

A student event management system is extremely helpful at a college, or university because everything is now conducted online. With the suggested system, there is no documentation. Human work is minimised in this project. Since every time an administrator or staff member adds a new event, a notice is sent. so that all students have the opportunity to take part in the activities. As The college will manage this ap- plication to prevent information leaks and to ensure data security. Since that it is a mobile application, anyone may use it whenever they want and every- where they are, and it is extremely simple to obtain event information instantly.

The students find it extremely helpful to learn about activities so that there would be greater engagement in the events and also students will not miss important notices about Training and Placements.

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