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Android Based Online Application for Students Information System

LS Rohith[1], M Rajapandu[2], M Prathap[3], Dr. CH. Suneetha[4]
[1, 2, 3]*Student, Electronics and Communication, Vignana Bharathi Institute of Technology,*
[4]*Assoc. Professor, Vignana Bharathi Institute of Technology*

Abstract: ***Now-a-days in our daily life students use WhatsApp, Facebook, Twitter, Instagram, etc., Students get their college feed via email or some other applications provided but people see that few of the students do not get the information passed to them due to some technical issues and in other cases the students cannot clarify their doubt in the teachings taught in the college and face difficulty and much more issues, few of them may also face issues as it is a public IP which is given to them, So in consideration to the above issues faced by the students our team is trying to develop an application which is specifically designed for the students or you can say to the particular college. Here the developed application will perform the following tasks as sharing files, receive college feed and we are able to interact with the faculty in the form of messaging. To develop this application, the format used is programming language JAVA language to write the code for our application and the software used is Android Studio software to build an application, in this we can build, test, and debug our application easily.***
Keywords: Android, IDE, data base, student-data, authentication, social media.

I. INTRODUCTION

The traditional methods of relaying updates and information from college faculties to students, such as physical noticeboards and the college website, can be ineffective and inefficient. There is a need for more streamlined and efficient communication channels to ensure that important messages reach all students in a timely manner. In recent years, digital applications have become increasingly popular and are widely used by many organizations to improve communication and productivity among their members. Educational institutions, like colleges, can also benefit greatly from such applications as it can enhance students' performance in all areas of college life, including curricular, co- curricular, and extracurricular activities.

An Android application would be a suitable option for a college, as it is the most widely used platform for applications worldwide. A well-designed application can significantly increase the number of recipients for messages and provide insights into the level of participation for events. Additionally, it can serve as a valuable tool for conveying emergency and urgent messages to students.

However, it is crucial to ensure that the application is user-friendly, accessible to all students, and has enough functionalities to meet their needs. It is also important to consider the cost and resources required to develop and maintain such an application. While a mobile application can be a valuable addition to a college's communication strategy, it should not be the only channel used. Other channels, such as email and social media, should also be considered to ensure that all students can receive the information they need. Overall, a comprehensive communication strategy that effectively reaches and engages all students is essential for enhancing their college experience.

II. LITERATURE SURVEY

In a similar vein, a paper [1] proposes the implementation of an Android application for managing college events and activities. However, the current implementation has some drawbacks. For instance, users are not automatically notified of the latest events and need to manually check the application for updates. This reduces the app's usefulness and does not leverage the full potential of an Android application. Additionally, the registration process is not secure since it uses offline registration, which could compromise user data. Implementing secure login methods, such as Google Login, could improve the app's authentication and security features.

In the paper [2] titled “An Android Application for Campus Information System,” aimed to develop a single application that caters to the needs of students, instructors, and administrative personnel at a school. They utilized SQLite Database and Android Studio to create the application, which underwent Robotismtesting. The application allows teachers to update attendance and marks of students, while also enabling students to check their attendance and marks. However, the authentication process is not entirely secure as it is based solely on name and password, without requiring college email ID for verification.

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This lack of robust authentication mechanisms may enable students from other colleges to access the application, compromising its security.

In the paper [3] titled “EVENT MANAGEMENT SYSTEM” developed an application using PHP, HTML, and CSS. The system allows users to enter data once, which is then saved in the database and connected to all files, reducing the workload, and saving time. SQL database administration is used for all data retrieval and interpretation. The main objectives of this project are to shorten the time spent locating a location, offer an easy-to-use GUI, reduce communication time, and manage multiple events effectively. However, the paper has limitations and may not fulfil all functionalities. For example, there is no feature for the whole data of the event and the timelines of the events, limited resource usage, and no feature for previous years' events data or winners'details.

In this paper titled "Online Event Management using Flutter-based Application" [4] described an application designed for managing events in colleges. The application uses a combination of NoSQL databases, MongoDB, and Firebase for storing encrypted data securely. The system is simple, user-friendly, and reduces the manual workload of organizing an event.

However, the registration feature is only available for students within the college and does not allow registrations from other colleges. The application also lacks previous year event details, different club registrations, and club-related content.

In the paper [5] they developed a mobile social app for college students based on perceived similarity and trust in their paper titled "A Mobile Social App for College Students based on Perceived Similarity and Trust".

The app resolves trust issues and enhances both online and off-campus social life by matching users based on perceived similarity and trust. It is built on the Android operating system and Java programming language, with data storage handled by an SQLite database. The app is tailored specifically to the needs of campus users, who can participate in activities, start, scan, sign up, and comment on them. The certification process in the app increases user perceptions of similarity and trust. However, the app lacks feature related to technical skills or education, which would allow students to share their knowledge and ideas.

In the paper [6] they aimed to develop an Android-based college campus app in their paper titled "Android Based College Campus App." The app is designed to better organize college activities using cutting-edge technologies such as SQLite and Android.

The business logic was developed in Java, while the displays were created using XML. The app provides guidance to students regarding placements by informing them about different companies visiting their campus so that they can prepare accordingly. The app also simplifies communication by allowing for easy email communication with students. However, the authentication mechanism in the app is not very secure, as it is based only on name and password rather than college email ID. As a result, students from other colleges might be able to access the app.

In the paper [7] they developed a web application for college events in their paper titled "COLLEGE EVENT WEB APPLICATIONS".

The system allows logged-in users to access the program while new users can registerfor an account. The project offers most of the essential features required for an event type, and the information isforwarded to the administrator who can share it with the client as needed. The web application can be used for participant registration or online enrolment, and it can help with proper scheduling and efficient utilization of online resources. The User Interface is designed to be user-friendly. However, this system is only available for students of the college and not open to students from other colleges.

III. PROPOSED METHOD

1) Initially, a login page was designed with fields for domain mail or roll number and password. The page hadlogin and register buttons.
2) The next step involved creating a Register Page where user details were collected and stored in a Firebasedatabase.
3) The app allows for Firebase sign in as an option for users to login.
4) A bottom navigation bar was also created with icons for different content like upload, homepage, user details,and query.
5) A profile fragment was added to display user data.
6) In the homepage section, latest and upcoming event posts were displayed in image format.

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IV. FLOW CHART

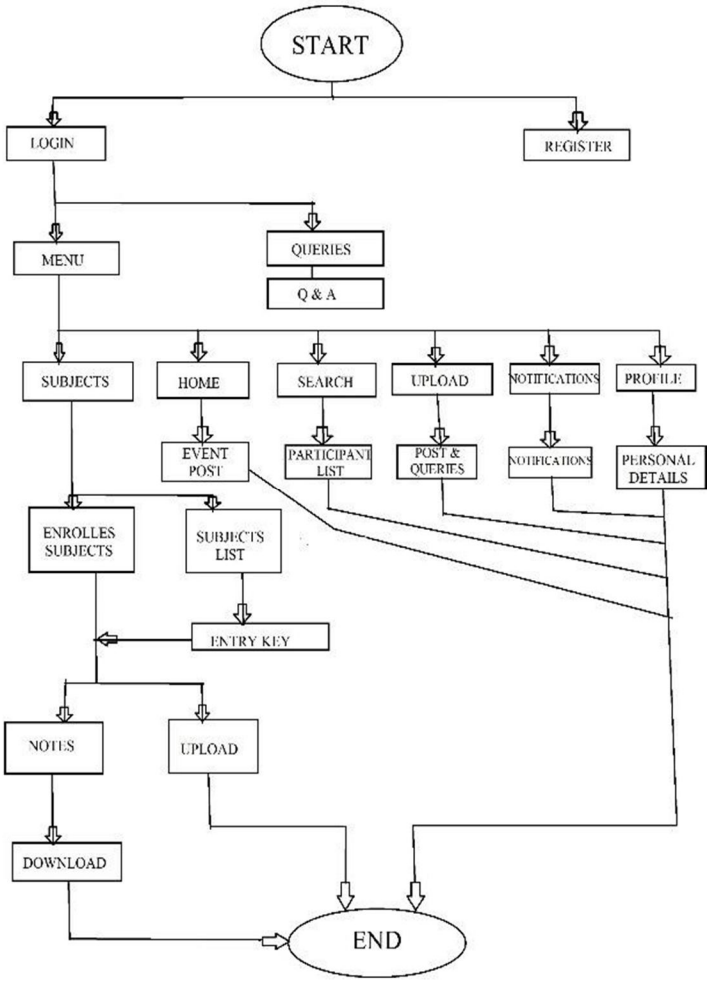


Fig.1 Flow chart

1) *Login*- Here we are going to login using our registered email, if not registered you can register from below givenoption.
2) *Register*- Here we are going to register using email.
3) *Menu*- Here we are going to access after tools given after logging in.
4) *Queries*- Here we are asking the question and answers of the given or posted questions.
5) *Subjects*- Here we are seeing the subjects and enrolled subjects list.
6) *Home*- Upon pressing the home button, you will get to the post/feed session where the post and feed will be seen.
7) *Search*- Here upon pressing the search button we can see the number of people enrolled and search them.
8) *Upload*- Here upon clicking the upload button you will see the post and query options where you can post a pic or askor raise a query.
9) *Notifications*- Here we can see the new post or query notification.
10) *Profile*- Here it contains our personal information, the followers and following and a log-out button.
11) *Enrolled Subjects*- Here we will see the enrolled subjects upon entering the pass key in the subject that we want.
12) *Subjects List*- Here a list of subjects will be provided where you can enroll upon entering the pass key.
13) *Notes*- Upon entering the enrolled subject, you can get access to the notes provided.
14) *Upload*- Here in the subjects, you can even upload notes as to share the file among the students.
15) *Download*- Here a download option is provided where we can download the file for the student's convenience.

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V. SOFTWARE USED

A. Android Studio

The official Integrated Development Environment (IDE) for building Android applications is called Android Studio, which was created by Google and is based on the IntelliJ IDEA program from JetBrains. On operating systems like Windows, macOS, and Linux, it can be downloaded. As the main IDE for creating native Android applications, it has taken the place of the Eclipse Android Development Tools (E-ADT).

Apply Changes is a noteworthy feature of Android Studio. This feature enables developers to make code and resource changes to an active app without having to restart it or, in some situations, the active activity. With the current state of the device being preserved, this functionality provides a great degree of flexibility in distributing and testing tiny, incremental modifications.

The code editor in Android Studio is made to assist developers; it automatically saves the code, is highly effective, simple to use, and offers complex capabilities like predetermining and code analysis, as well as suggestions in a dropdown list.

The Android Emulator in Android Studio enables developers to mimic and test their apps on a variety of gadgets, including tablets, laptops, smartphones, smart watches, and more. Hardware features like GPS location, motion detection, and network latency can potentially be used by developers.

When starting a new project, developers can quickly access a code template or find sample code by right clicking an API in the editor. Sample code will then be made available. Additionally, they can directly use the application codethey download from GitHub or any other internet source in the project screen.

B. Firebase

Realtime database, storage, authentication, and fireStore are all services offered by cloud computing company Firebase. These services are supplied by Firebase up to a certain limit for free access; if we go over that limit, we must pay as we go. It offers support for programs such as PHP, JavaScript, Node.js, Java, Unity, Android, and IoS.

Developing high-quality and resilient mobile applications requires a powerful and feature-rich development platform, and Firebase from Google is one such platform that has gained the trust of developers worldwide. Firebase offers developers a multitude of options for building highly functional and versatile web, Android, and iOS applications. While there are several contenders in the app development space, Firebase stands out as one of the best available platforms.

In order to address a few key issues for developers, Simple integration: FireBase is used to integrate application services quickly and easily. Real-time synchronization is made possible by Firebase's real-time database, which allows programs like Gmail, Outlook, and chat to synchronize data with numerous users simultaneously. Security: To safeguard data, Firebase offers authentication and encryption. Firebase offers strong analytics to aid with app performance and feature optimization. Firebase manages mobile and web applications with efficiency and ease.

C. Libraries Used

1) RecyclerView- RecyclerView is the ViewGroup that contains the views corresponding to your data. Because RecyclerView is a view in and of itself, it can be added to your layout just like any other UI element. Each every list element is defined by a view holder object. When it first forms, the view holder has no data associated with it. The newly created view holder is connected to its data through the RecyclerView. You can specify the view holder by extending RecyclerView. View Holder. The RecyclerView acquires views and connects them to their corresponding data by calling adapter functions. In order to create the adapter, you extend RecyclerView. Adapter. Recycler view is a potent android UI element that is used to display a list of data in a flexible and effective manner, allowing you to display a significant number of things on the screen without having to worry about clogging up the screen.
2) An adaptor serves as a link between a data source and a user interface element. The basic adaptor and the custom adaptor are two mail adaptors that can be specified. Grid view, spinner, and list view are where base adaptor is most frequently utilized. Data from the identity manager is transformed into resources using a custom adaptor. We employ these two adaptors for further customization.
3) FirebaseAuth- Firebase Auth offers us a variety of tools and services that make it simple to use SDKs, built-in librariesused in UIs, and other things. These features are employed to authenticate user applications and guard against hacking. The user application is well-protected from outside users by the authentication security. We can authenticate Twitter, Google, and many other applications with FireBase Authenticator.

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4) Firebase Database- FireBase Database is a cloud structured database in which the data is saved in Javascript Object Notation (JSON) format. Each system instantly receives new data and is connected to the same database instance. It is a NoSQL database that is simple to use for all applications and unstructured. where we can link data between users andin real time and store.Data is easily linked and efficiently received for all users, and data access is possible from anydevice, including mobile phones, tabs, and other devices. The main reason servers are not used with FireBase Databse is because SDKs are used so frequently. When a system crashes or a user logs out, the Database SDK uses local Cacheto store the data.
5) Firebase Storage- Most things, including photos, MP3s, and MP4s, as well as huge files for later use, can bestored in a storage account called Firebase storage. When a system crashes, for example, a user can quickly retrieve thedata from Firebase storage. In order to avoid a crash, firebase storage is frequently used to store massive amounts of data, such as big files. Many developers use this Firebase storage to store and provide data. Firebase storagecan easily accessible to users. Firebase storage is an object level storage in which we can easily access files and easilyupload files. It is mostly used in web services and mobile apps.

A powerful, cost-effective, and simple object storage service built to scale:

a) *Quick and Secure Hosting:* Fast and extremely secure, Firebase Storage offers a robust database because it is a Googleproduct.
b) *FireBase Cloud Messaging:* Single message distribution is possible with cloud messaging. and allows multiple users or groups to communicate.
c) *Data storage:* Most of the data, including audios, videos, pictures, large and tiny files, and so on, can be stored in firebase storage.
d) *Google Analytics:* Improve user retention and engagement rates for your application by using Google Analytics. The main advertising technology partners among these platforms are Google Ads, AdMob, Liftoff, and AdActive, which italso allows to track and accommodate metrics with its partners.

It is a technology which allows for storing and managing various media content generated by mobile app users. It is a cloud computing model which stores data on the internet through a cloud computing provider who manages and operates data storage as a service. It is delivered on-demand with just-in-time costs and capacity. It eliminates buying and managing our own data storage infrastructure. It provides us agility, durability, global scale with "anywhere, anytime" data access.

VI. RESULT

In the result we will see the following output:

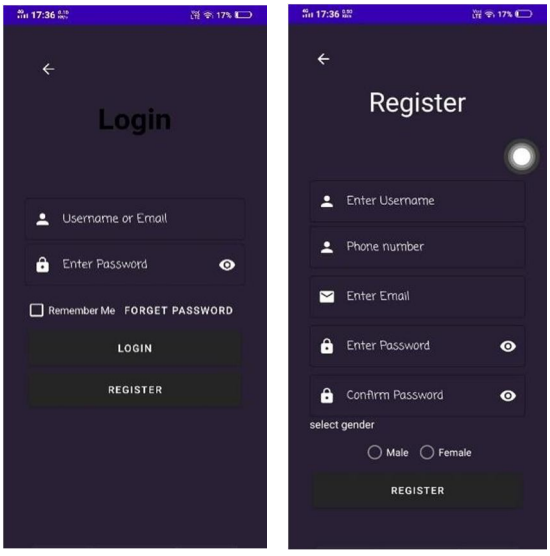


Fig.2 login and register page

Here we will see login and register page upon opening the app. You can fill the columns provided with the datasimilar to any normal registration app.

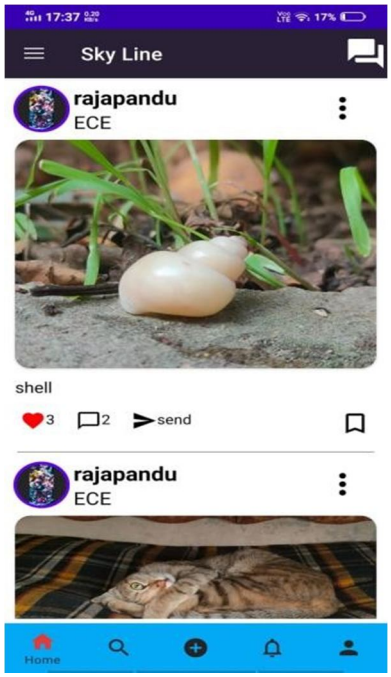


Fig.3 Home page

Upon logging in you will be taken to home page where you will see the feed provided and make your time useful. And you can see various options shown in the bottom of the screen, those are nothing but search box, post and query box, notification box and bio/personal data box, on the top left you will see menu button where you can access subjects' data, and on the top left you can see query messages posted by you or the other students.



Fig.4 Search box

Here you can see how many or who has joined the app including students, faculty etc.

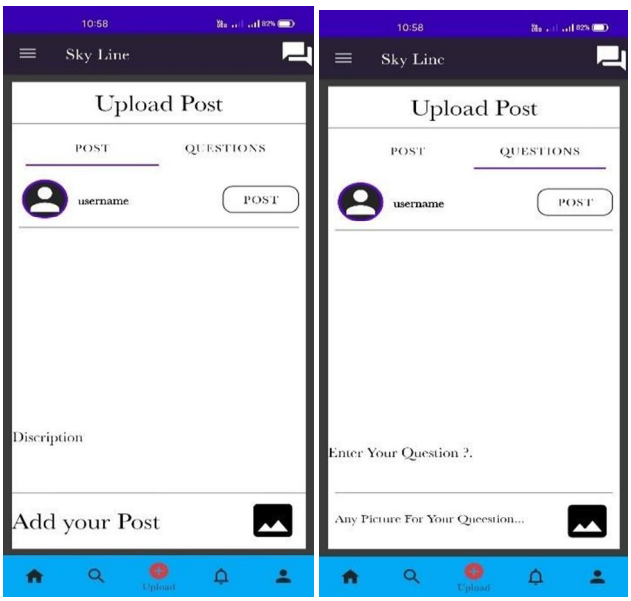


Fig.5 Post and Query box

Here you can post a feed or query regarding your doubt. The post can be seen in home page whereas queries on thequery message box.





Fig.6 Profile box

Here you can see your personal data as well as the number of people following you. There is also a logout buttonprovided where you can log out of the app upon pressing the box.

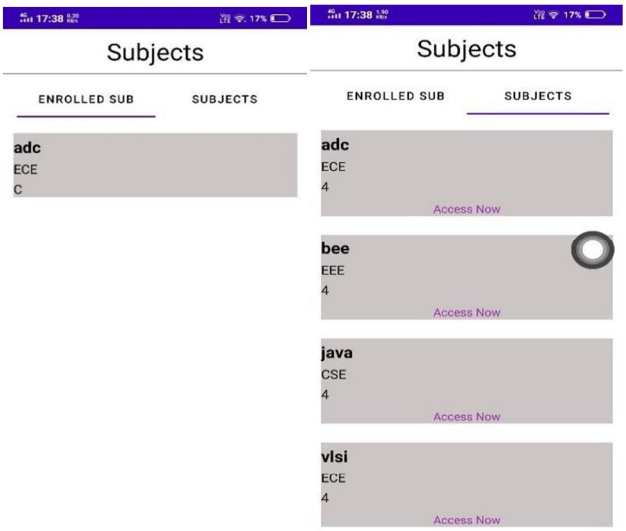


Fig.7 subjects and enrolled subjects

This box will occur upon pressing the subject's column where you will enrol in the course upon typing the pass keyex- for enrolling in the adc subject type "adc@secC".
Here upon clicking the enrolled subject you can access the notes or images provided.

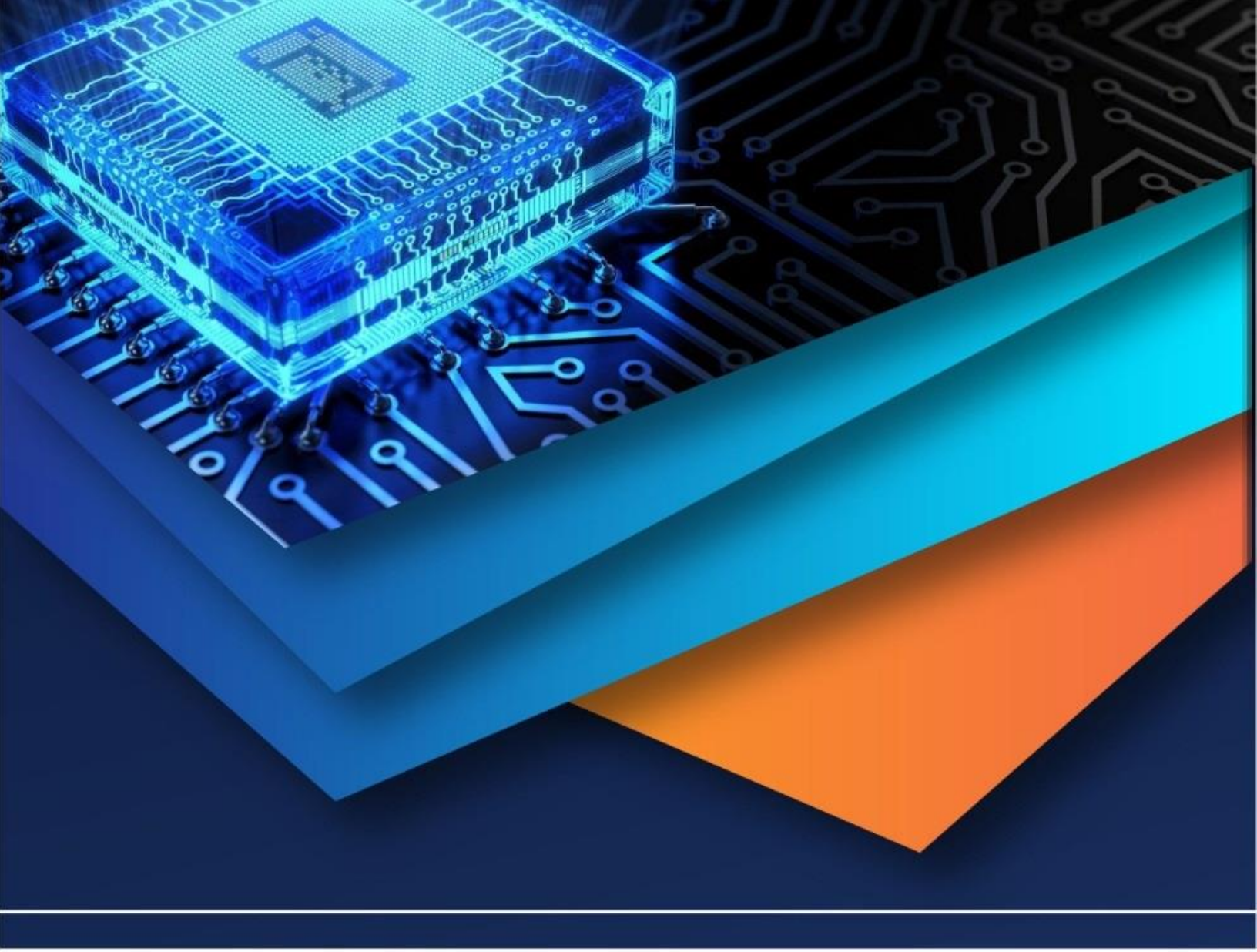
VII. CONCLUSION

This paper is focused to provide an intuitive user interface for the application, inspired by popular social media platforms like Instagram and Facebook. The design choices were made keeping in mind the user experience, to ensurethat the application is easy to navigate and use. By making the interface like well-known social media platforms, we aimed to minimize any confusion that the user may face in finding the necessary features or uploading files.
Overall, our aim was to provide a user-friendly and error-free application that meets the needs of the user in the bestpossible way.
We also conducted a thorough background check of the application to ensure that there are no errors or glitches that could cause inconvenience to the user. This involved extensive testing of all the functions and features of the application to ensure that they are working as intended. We also made sure that every function is available to the user without any hidden complexities or unnecessary steps.

REFERENCES

[1] Shiv Kumar, Shrawan Kumar Sharma, Divya Dagwar, 'Android Based College Campus App', InternationalConference on Computing Methodologies and Communication (ICCMC 2018).
[2] Reetu Malhotra, Dev Priya Gupta. An Android Application for Campus Information System Using Procedia ComputerScience -2020.
[3] Prof.Vaishali R. Surjuse,Nikita M. Bawankar, Ankita T. Tembhurne.EVENT MANAGEMENT SYSTEM Using International Journal of Advance Research and Innovative Ideas in Education(IJARIIE)-2021
[4] Sonal Sawant, Pooja Jamdhade.App for Organizing Alumni Event Using International Research Journal of Engineering and Technology (IRJET) Paper-May 2021.
[5] L. Jianglong and X. Min, "A Mobile Social App for College Students Based on Perceived Similarity and Trust," in2016 8th International Conference on Information Technology in Medicine and Education (ITME).
[6] S. Kumar, S. k. Sharma and D. Dagwar, "Android Based College Campus App," 2018 Second International Conference on Computing Methodologies and Communication (ICCMC).
[7] Kumar Mishra,COLLEGE EVENT WEB APPLICATIONS Using International Journal of Advance Research andInnovative Ideas in Education(IJARIIE)-2022
[8] Jashandeep Singh, Swapnil Srivastva, Dipanshu Raj. FLUTTER AND FIREBASE MAKING CROSS-PLATFORM APPLICATION DEVELOPMENT HASSLE-FREE Using International Research Journal of Modernization in Engineering Technology and Science-April-2022
[9] A. A. A. Ali and M. Dauwed, "Development of A Hybrid Mobile App for Student Management System", J. Adv. Sci.Nanotechnol., vol. 1, no. 1, pp. 37–42, Apr. 2022.
[10] R. Lin, "Development and Application of Computer Experiment Course APP for College Students," 2020 5th International Conference on Smart Grid and Electrical Automation (ICSGEA).

[11] Oyibo, Kiemute & Morita, Plinio. (2021). Designing Better Exposure Notification Apps: The Role of PersuasiveDesign.
[12] Vishwakarma R Ganesh, 'Android College Management System', International Journal of Advanced Research inComputer Engineering & Technology (IJARCET)Volume 5, ISSN: 2278 – 1323, Issue 4, April 2016.
[13] Alfarsi, Ghaliya & Juma, Mariam. (2018). Developing a Mobile Notification System for Al Buraimi University CollegeStudents.
[14] Wohllebe, Atilla. (2020). Consumer Acceptance of App Push Notifications: Systematic Review on the Influence of Frequency. International Journal of Interactive Mobile Technologies (JIM).
[15] Alfarsi, Ghaliya & Juma, Mariam. (2018). Implementing a Mobile Application News Tool for Disseminating Messages and Events of AlBuraimi University College. International Journal of Interactive Mobile Technologies (iJIM).



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