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Android Application for my College

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Abstract: ***The welfare of the students and faculty plays a very significant role in any institution and in these changing times, students are more driven towards using a smartphone for every purpose. As we know that he world is at the fingertips of every users and now student can get access to any information from anywhere. So, an android application for student can be significantly helpful and this reduces the chance of visiting a library, websites and other places searching for the books, sample quizzes, study material, notices and any other information [5]. This project is an educational android application which is made for our college students and faculty members. In this project we have created two android applications i.e. CMRTC Admin and CMRTC android app. In CMRTC Admin app, only the authorized faculty members can access this admin app. The admin can modify the images, events, news, notices, quiz questions, study material and eBooks for students and can change the list of faculty members of different departments. Whereas the second app i.e. CMRTC app is only for students and other users and in this app they can get information about our college, Google maps location, notice board, gallery of the college, video lectures, study materials (eBooks, question papers, quizzes etc.) and students can download the study material, can share this app to their friends and for any feedback they can provide it in our college website. So, for the welfare of the college we have made this project.***

Keywords: Android app development, Firebase, CMRTC Admin and CMRTC android applications, Update gallery ,study material and notice and Admin Login .

I. INTRODUCTION

This project basically consists of two android applications i.e. CMRTC Admin and CMRTC android app. All the modification and updation of data is done using the firebase and only authorized users are allowed to login in CMRTC admin and this is achieved using firebase too. Whereas, the other app i.e. CMRTC app is accessible for every user. Although our college has a dedicated old website but we developed Android application because of android application advantages that the normal website lacks. Android apps cater to better user experience, load content faster and are very easy to use. Apps provide user to perform a task better with the help of the gesture. It is very easy to navigate through and provides personalization unlike the website and as per our research most of the users spend more time in apps rather than websites. We have provided the personalization feature of enabling dark theme, hence providing the interactive and seamless user experience.

II. LITERATURE SURVEY

Android is not a smartphone, it is an open source and Linux-based Operating System for mobile devices such as smartphone, smart watches, tablets etc [2]. Android OS was developed by the Open Handset Alliance which was led by Google and other companies and has been widely used OS till date. In our project we have used firebase for cloud storage hosting.

A. Firebase

Firebase is a Backend-as-a-Service (Baas). It provides developers with a variety of tools and services to help them develop good quality apps and provides real time hosting [4]. It is built on Google's infrastructure. Since, firebase is categorized as NoSQL database program, it stores the data in JSON-like documents and provides features like real-time database, authentication and hosting**.** Here, firebase providing us the facility to authenticated login in CMRTC admin app and updating the database in real time with seamless process.

B. Language and Integrated Development Environment

Google states that Android apps can be written using Kotlin, Java, and C++ languages using the Android software development kit (SDK), while using other languages is also possible [1]. Here we used Java language for app development and Android Studio is used as our primary integrated development environment because it is official IDE for developing apps for Android OS.

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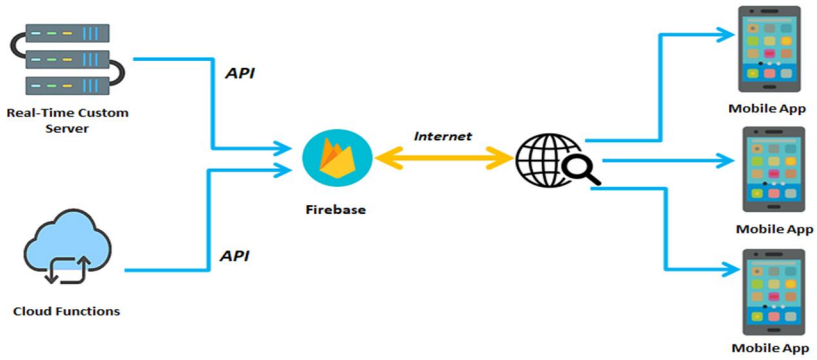

Fig. 1 Firebase Real Time Database Architecture

III. NEED OF THE PROJECT

Our college has a dedicated website but never had an android application and nowadays most of the users prefer using android application over the website. Our project enables the faculty members to add the study materials and other important information that can be useful for college students so that during any preparation students can refer those materials and can download the study material as well. We have developed this project specifically for the college students and the faculty of our college. Our app provides easy access of information, better user interaction, convenient interface, features and study material accessibility which gives our app an upper edge over the old existing college website. We have made sure that the privacy is maintained properly and only authorized faculty will be allowed to use the CMRTC admin application.

IV. EXISTING SOLUTIONS AND ITS DRAWBACKS

In the existing system there are no good features and also news feed option, interface and study material management is not there. Students have to visit the complicated sites of colleges to get the college related information and the information available is not furnished and sometimes students have to pay for eBooks and study materials. Apart from these, there are some other drawbacks which are given below:

A. No proper android app available for our college students and faculty members.
B. There is no proper source from where students can get their study materials.
C. Existing systems have privacy and security related issues for users.
D. The user interface of existing website is not good and has very less functionality

V. PROPOSED MODEL IN BRIEF

The proposed system basically consists of two android applications; one is CMRTC Admin app and second is CMRTC app. The CMRTC Admin app is used by the authorized faculty members and they can add, modify or delete the gallery of the college, list of faculty members as per departments, important news and notices and study materials for the students. In case of CMRTC app, it is for students and other users and here a user can access the any information related to our college, gallery of the college, video lectures and study materials and user can read and download this at free of cost. This enables the students to get any information and eBooks at one place with seamless user interface [3]. Here, we used firebase which works as backend as a service and it syncs the real time data in the application, categorizes the data into NoSQL Database programs so it works faster and provides authentication with real time cloud storage. It provides the following advantages as well:

A. Provides study materials and books to students of our college at free of cost.
B. Students can go through video lectures uploaded by faculty of our college.
C. This app can be shared to other users using the share option present in navigation bar.
D. Materials and other information can be shared to others as well.
E. Highly secure and privacy is maintained properly as we are using firebase database.
F. Interactive user interface and has seamless performance and can run on any android device (low end to high end device) and has a feature of dark theme.
G. Efficient RAM and Power consumption.

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VI. PROJECT ARCHITECTURE MODEL

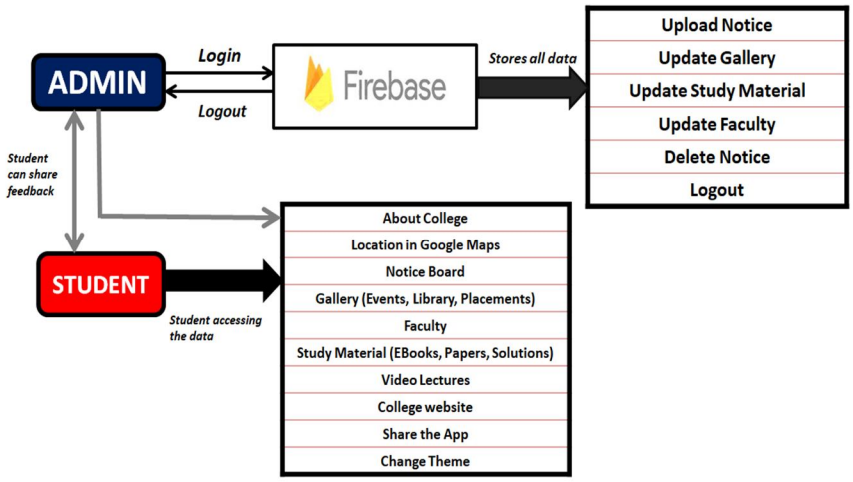

Fig. 2 CMRTC Admin app and CMRTC app architecture review**.**

VII.CONCLUSIONS

This app is for students and faculty members of our college and as everything is going digital and users prefer android apps over websites this helps students for getting news feed, quizzes, video lectures and study materials which they can save in their device and can share with their friends as well. This app is highly effective and efficient because it can run on any low end and high end android device too, power and RAM consumption is less and has minimal user interface and offers dark theme. Hence, these two apps are made for students and faculty of our college so that interaction between them can be enhanced and ease of finding resources and information is achieved.

VIII. FUTURE SCOPE

In future we will add notification feature in our CMRTC app. We will add a feature which will enable the student to have an online doubts session with the faculty of its respective departments. We will add, student reviews option so that students can give their reviews and rating to the video lecture and study material.

IX. ACKNOWLEDGEMENT

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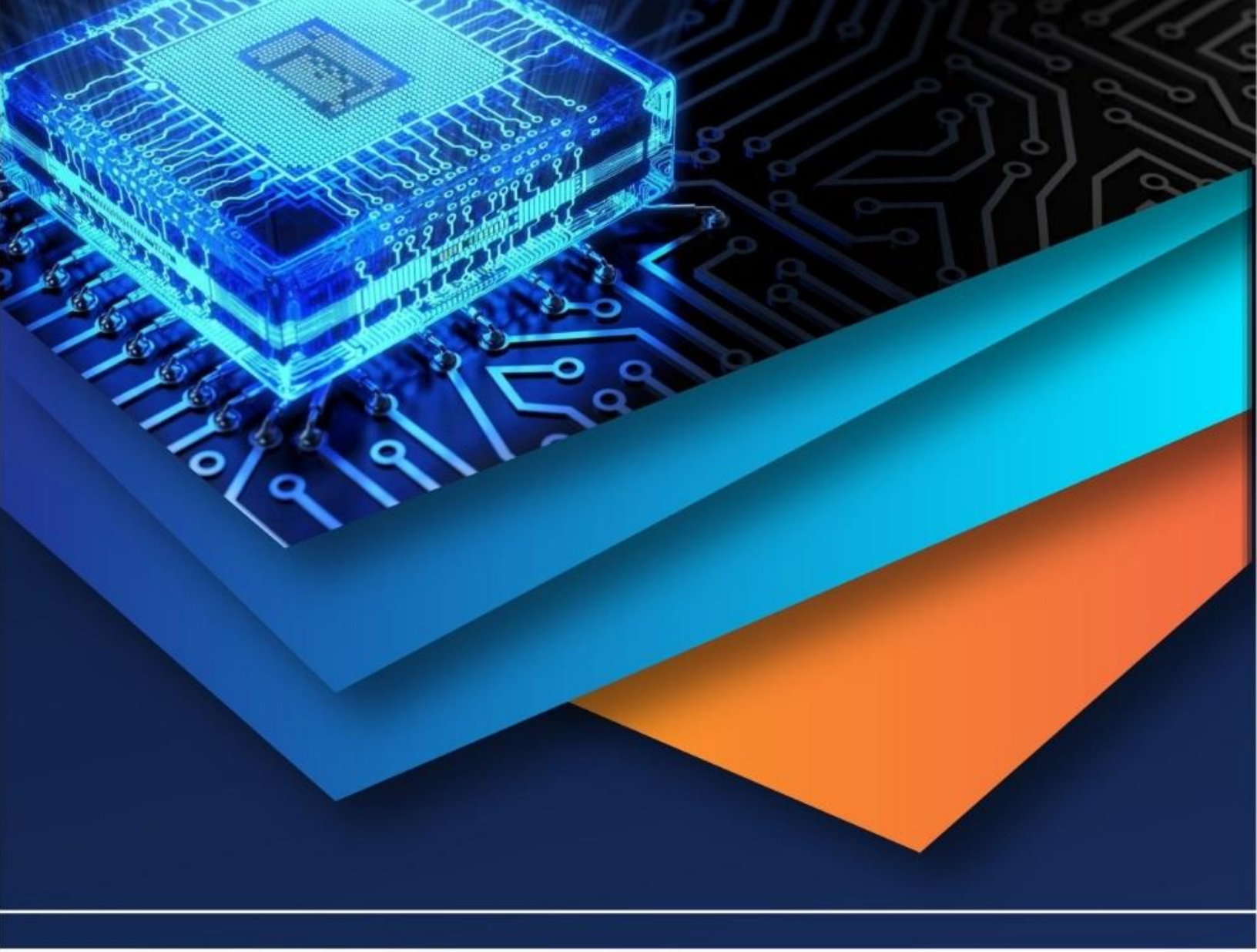

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