Project Report

On

"Online College Forum"

Submitted for partial fulfilment of

Diploma in Computer Engineering

By

[20CM003]   Shreya V. Borode

[20CM054]   Sharvari R. Sonukle

[20CM064]   Tanvi N. Waghmare

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Under the Guidance of

Dr. P. R. Satav

Department of Computer Engineering

GOVERNMENT POLYTECHNIC AMRAVATI

(An Autonomous Institute of Govt. of Maharashtra)

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CERTIFICATE

This is to certify that the Project titled

'Online College Forum'

is submitted

By

[20CM003]   Shreya V. Borode

[20CM054]   Sharvari R. Sonukle

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In the partial fulfillment of the Diploma Course in

Computer Engineering

*During the academic year **2022-2023***

Dr. P. R. Satav	Dr. P. R. Satav (Name & Sign of	(Name & Sign of the	Dr. V. R. Mankar
Head, Dept. Of Computer Engineering	the guide)	External Examiner)	Principal Government Polytechnic, Amravati

Government Polytechnic Amravati

Vision

To be a leading technical institution by providing an environment that promotes professionalism, and collaboration between industry and institute in the pursuit of academic excellence while valuing industrial achievement and fulfilling the expectations of the community.

Mission

M1. To develop competent diploma engineers suitable for the contemporary industrial environment.

M2. To include socially accepted ethics & values among budding engineers.

M3. To Nurture innovations and entrepreneurship.

M4. To produce engineers with psychomotor & cognitive skills committed to lifelong learning.

Computer Engineering Department

Vision

Provide skilled professionals in Computer Engineering to contribute towards the advancement of technology useful for society and the industrial environment.

Mission

M1. Imported-based and value-based education by providing exposure to the latest tools and technologies in the area of computer engineering to satisfy the stakeholders.

M2. Upgrade and maintain facilities for quality technical education with continuous effort for excellence in Computer Engineering.

M3. Train students with Computer Engineering knowledge to apply it in the general disciplines of design, deployment of software, and integration of existing technologies for E-governance and the benefit of society.

M4. Provide a learning ambiance to enhance innovations, problem-solving skills, leadership qualities, team spirit, and ethical responsibilities.

M5. Provide an academic environment and consultancy services to the industry and society in the area of Computer Engineering.

Acknowledgment

We would like to express my sincere thanks to **Dr. P. R. Satav** for his valuable guidance and support in completing my project.

We would like to express my gratitude to our principal **Dr. V. R. Mankar** for allowing us to conduct the "College Forum" project. The mentioned project was done under the supervision of **Dr. P. R. Satav**. We thank all participants for their positive support and guidance.

We feel thankful to the college staff for giving us such a big opportunity. We believe we will enroll in more such events in the coming future.

Group Members:

(20CM003) Shreya V. Borode

(20CM054) Sharvari R. Sonukale

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INDEX

Abstract

Introduction

A college forum is a Social media platform particularly designed for a specific college. In the college forum all users i.e. Principle, Lecturers, Other Staff, Alumni and students can share current events, happenings, achievements and hard news or special memories and announcements about the college. In the college forum every user is able to see all these details and fact-figures, so an image and caption upload it in the format of a post that can be seen by all users. All users can add new posts to feed. There is a community module (communication medium) where we can create a new community for a special cause, just like a chat group for users. The user can send messages and see all the messages of other users.

Problem Statement

Develop an application as a social media platform for a communication medium of the college

Problem Solution

Create an Android application using Kotlin programming languages to develop a social media platform for the college online. Develop an interface for the user to post an image and caption upload it in the format of a post that can be seen by all users. All users can add new posts to feed. There is a community module (communication medium) where we can create a new community for a special cause, just like a chat group for users. The user can send messages and see all the messages of other users.

Create a database to store all the details and posts of the students, staff and authorities and display it on their profile .

CHAPTER 1

INTRODUCTION

1. Introduction

1.1. What is A College Forum?

1. This scheme shall apply for the communication and interaction between the Principle, Lecturers, Other Staff, Alumni and students

2. The A college forum is a Social media platform particularly designed for a specific college.

3. In the college forum all users i.e. Principle, Lecturers, Other Staff, Alumni and students can share current events, happenings, achievements and hard news or special memories and announcements about the college.

4. For the purpose of authentication of the post, every user is identified by the ID Code of the college.

5. The personal information like Username, ID Code, PHone Number are displayed on the user's profile.

6. In the college forum every user is able to see all the details like current events, happenings, achievements and hard news or special memories and announcements posted by the users in their feed.

7. The users can also add image and caption and upload it in the format of a post that can be seen by all users. All users can add new posts to feed.

8. There is a community module (communication medium) where we can create a new community for a special cause.

9. The community module is just like a chat group for users. The user can send messages and see all the messages of other users.

10. The aim of the community module is to facilitate the interaction of the people with the same interests and opinions on the college platform.

11. Candidates of the community year. The date of promotion shall be the date on which he/she has successfully got re-assessed.

CHAPTER.2

OBJECTIVES OF THE PROJECT

2. Objectives of the Project

2.1. Objectives of Post module:

1. To provide a platform for the users of the application so that they can interact with each other in the community in the form of a group chat. And share their opinions on a specific topic.

2. To give users a user-friendly environment and platform to post all the details like current events, happenings, achievements and hard news or special memories and announcements

3. To make all this process paperless, timeless and convenient.

2.2. Objectives of Community module:

1. To provide a community module for (communication medium) where we can create a new community for a special cause.

2. To make the interaction of the people with the same interests and opinions on the college platform.

3. To provide a platform for the users of the application so that they can interact with each other in the community in the form of a group chat. And share their opinions on a specific topic.

4. To make all this process paperless, fast and timeless . And most important is to secure it.

CHAPTER 3.

STRUCTURE OF THE PROJECT

3. Structure of the Project

3.1. Problem Analysis

Create an Android application using Kotlin programming languages to develop a social media platform for the college online. Develop an interface for the user to post an image and caption upload it in the format of a post that can be seen by all users. All users can add new posts to feed. There is a community module (communication medium) where we can create a new community for a special cause, just like a chat group for users. The user can send messages and see all the messages of other users.

3.2. Proposed System

A system on which our group is proposing,

- Makes the process of CAS completely digitized.

- Reduces the need for conventional paperwork or documentation required.

- Fastens the process of application and reapplication.

- Employees can track the status of approval or reversion.

- Related authority can have the record and transparency in the process.

3.3. Tools/Platform

- Android Studio

- Firebase

3.4.Project Type

Android application

3.5.Hardware requirements for the developer and end-user

• Laptop / PC

• Mobile

3.6.Software requirements for the developer and end-user

• Operating System: Windows 2007, Windows 2008, Windows 2010

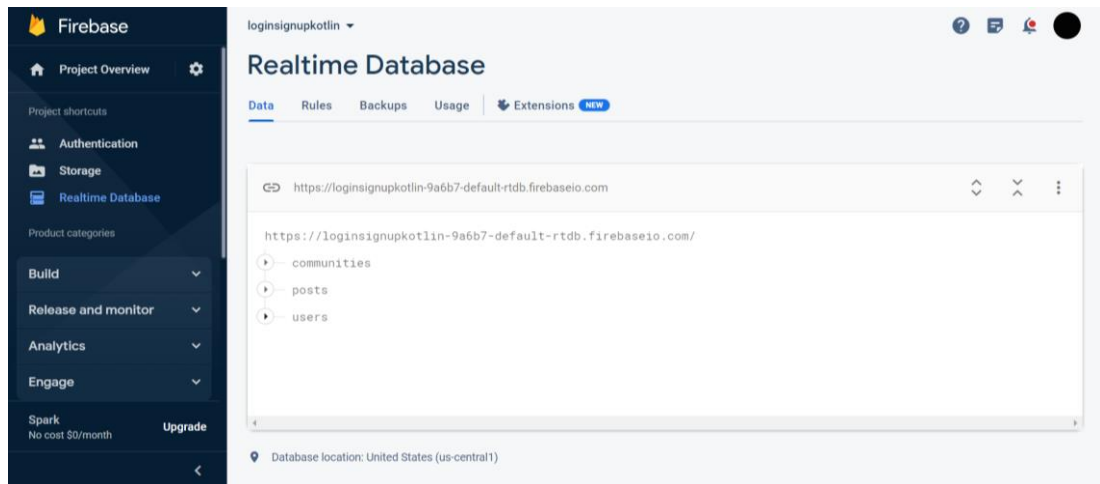• Development tools: Kotlin, Android Studio

3.7.List of databases/tables used in the project

Database Name: - Firebase

Fields in database are stored in key-value
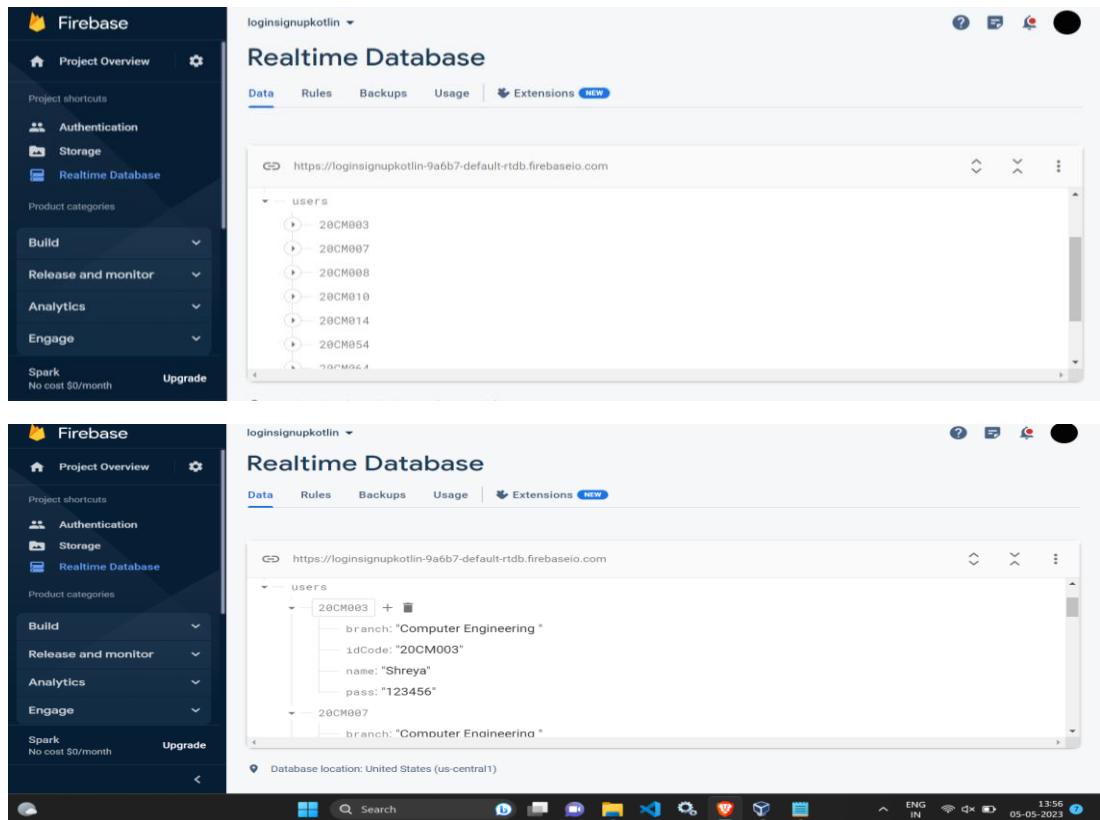
Database Collections :

All collections in Database

      In the Firebase Database, we have made three collections to store related data in those key- value pairs.

 'users'- this collection is for storing all the details related to the user registration and login module. We have used IDCodes as unique keys to store data, inside ID Code there are four keys as - 'branch', 'ID Code', 'UserName' and 'password'

 'posts' - this collection is for storing all the details related to the post module. The 'post' module has unique keys for all the posts in the database. Those unique keys are auto genered by Firebase. There are four keys inside those unique keys 'caption', 'image URL', 'UserID' and 'userName'

 'communities' - this collection is for storing all the details related to the community module. The 'communities' have names of communities - inside those, there are keys like 'message', 'name', 'ownerID' and 'ownerName'. Inside 'message' there are keys like 'data', 'type', 'username' and 'userID'
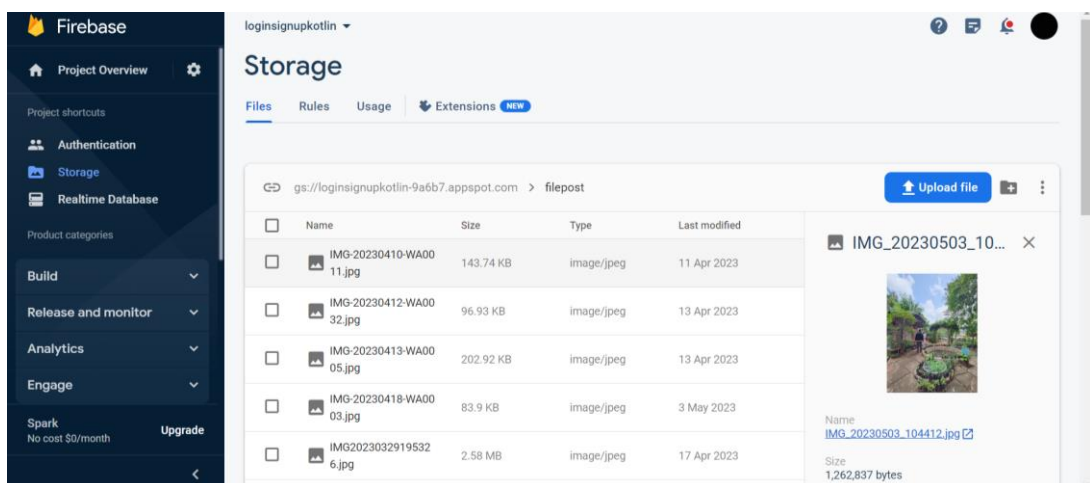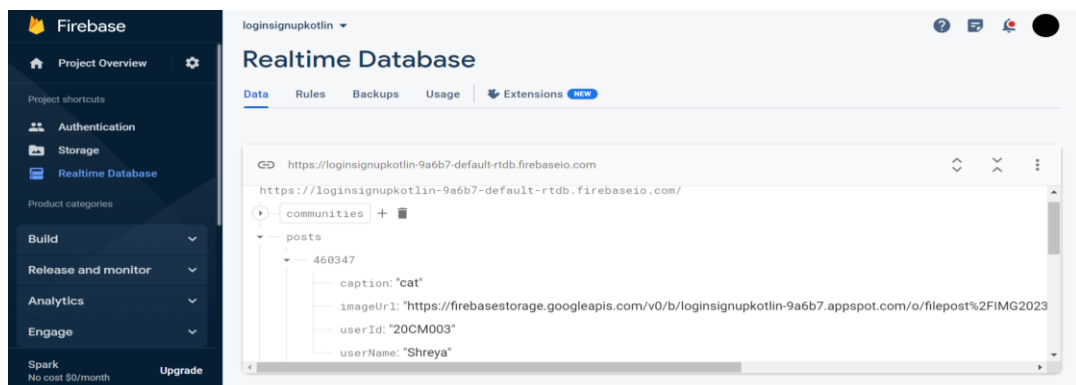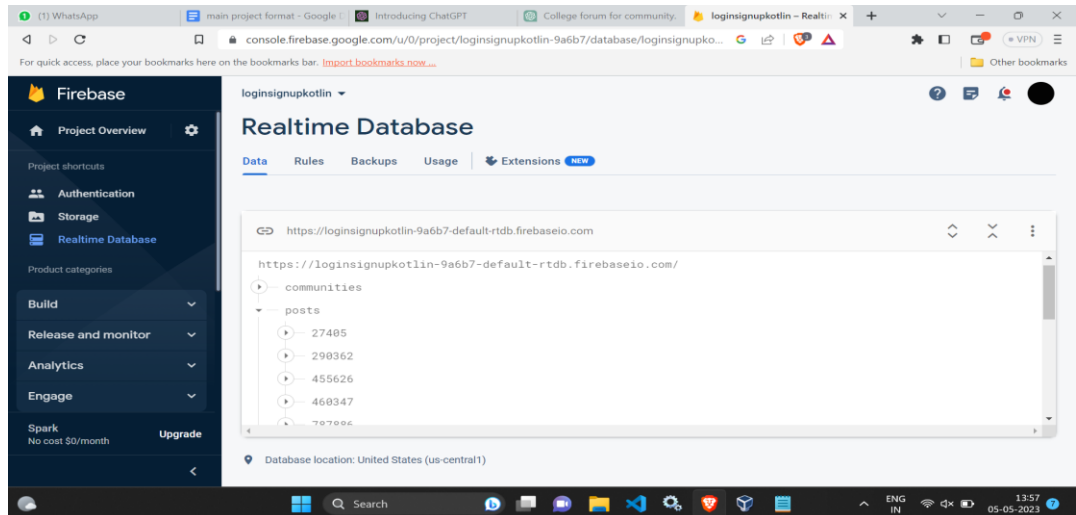
1. **'users'** collection

In the Firebase Database, the "users" collection has been created to store all the details related to the user registration and login module. This collection serves as a repository for user-specific information. To uniquely identify each user, IDCodes have been utilized as the unique keys for storing the user data.

Within each ID Code, there are four keys that store specific information about the user. The first key, "branch," is used to store the branch or department to which the user belongs. The second key, "ID Code," stores the unique identifier or code associated with the user. This ID Code acts as the key for accessing the user's data within the collection.

The third key, "UserName," stores the username of the user. This can be used for displaying the user's name or for identifying the user within the application. Finally, the fourth key, "password," is used to store the password associated with the user's account. This is typically encrypted or hashed for security purposes.

By organizing the user data in this manner, the Firebase Database allows for efficient storage and retrieval of user information. Each user's data can be accessed and updated based on their ID Code, providing a structured approach to managing user-related data within the application's functionality.

Posts:

'Posts' collection

Firebase Database is a flexible and scalable NoSQL database that allows developers to store and synchronize data in real-time across multiple platforms. In this particular instance, the developer has created three collections within the database to store related data in key-value pairs.

The first collection, named "posts", is used to store all details related to the post module. Each post in the collection has a unique key, which is auto-generated by Firebase. This unique key is used to identify the post and can be accessed by developers to retrieve and update the data associated with it.

Inside each unique key, there are four keys that store specific information about the post. The first key, "caption", is used to store the caption or description of the post. The second key, "image URL", stores the URL of the image associated with the post. The third key, "UserID", stores the uniqueThe identifier of the user who posted the content. Lastly, the fourth key, "userName", stores the username of the user who posted the content.

This approach to data organization allows for easy and efficient retrieval of information related to the post module. By storing related data in one collection, developers can quickly access and update the information associated with a particular post. The use of unique keys also ensures that data is easily identifiable and can be accessed by developers in a predictable and structured manner.

Communities :
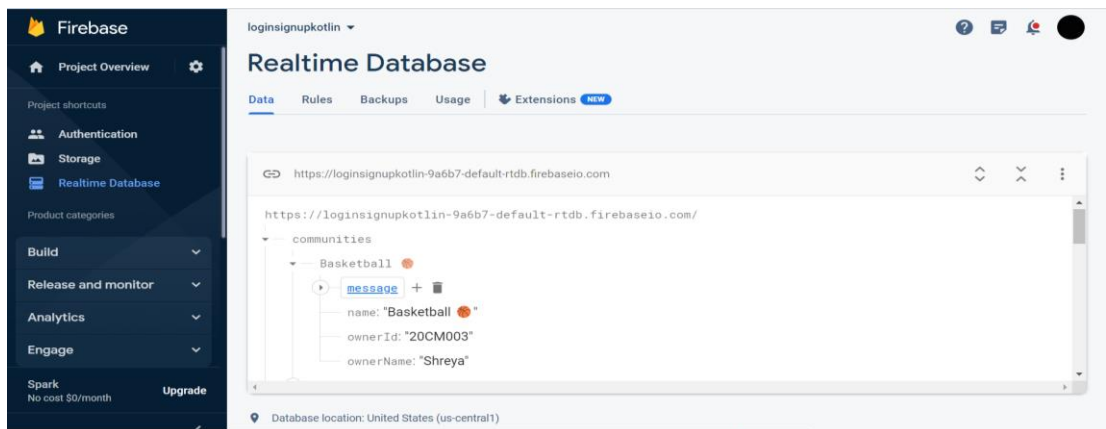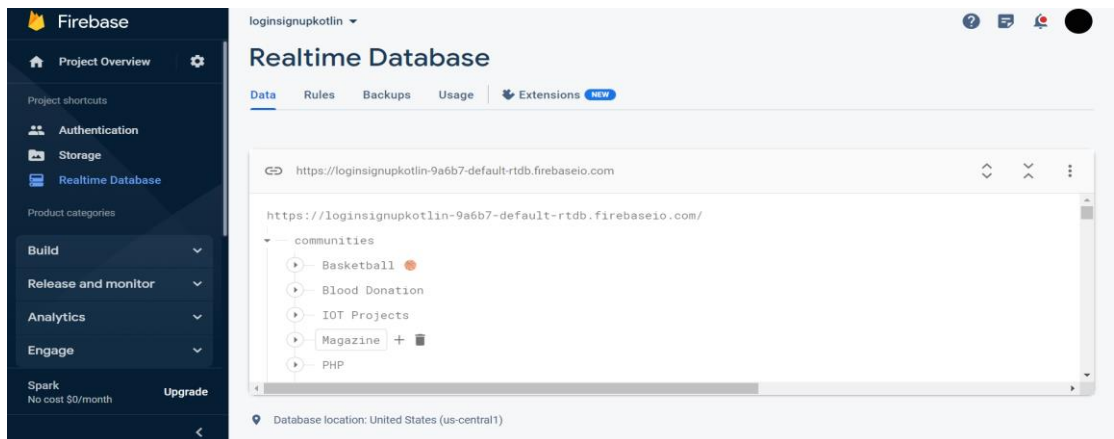
'Communities' Collection:

In the Firebase Database, the "communities" collection is created to store all the details related to the community module, specifically for real-time chatting. This collection serves as a container for storing information about different communities.

Each community within the "communities" collection is identified by its name. Inside each community, there are several keys that store specific information.

The "message" key is used to store the chat messages within the community. Inside the "message" key, there are further keys such as "data," "type," "username," and "userID" that provide additional details about each message. These keys help store information about the content, type, username, and user ID associated with each message.

Additionally, there are keys like "name" which stores the name of the community, "ownerID" which stores the unique identifier of the community owner, and "ownerName" which stores the name of the community owner. These keys help identify and manage the community details within the database.

With this structure, the Firebase Database allows for real-time storage and retrieval of chat messages and community information. Users can participate in real-time conversations within the communities, with their messages and other relevant details being stored in the respective keys. This enables seamless communication and interaction within the community module of theapplication.

3.8. Database and its use

Database : Firebase

In this project, Firebase is being utilized as a real-time database to store a list of objects in a tree-like structure. The main purpose of using Firebase in the project is to store user information and post-related data for the mobile application.

For user-related information, Firebase is used to store details such as username, email, password, and any other relevant user data. This stored user information is used for various functionalities within the application, including user login, authentication, and displaying user details on the profile page.

In the case of the post module, Firebase is employed to store and retrieve information related to each post. This includes storing data such as the post's caption, image URL, UserID (associated with the user who made the post), and userName (the username of the user who made the post). This data is then fetched from Firebase to display the posts in the application's feed.

Additionally, in the community module, Firebase is used to store details such as the message content, name, ownerID (associated with the owner of the message), and ownerName (the name of the message owner). Within the "message" data, there may be further keys, such as "data," "type," "username," and "userID," which provide additional details about the message.

By utilizing Firebase's real-time database capabilities, the application can effectively store, retrieve, and update user and post-related information in real-time. This enables seamless interactions between users and ensures that the displayed content is always up-to-date.

Overall, Firebase serves as a powerful platform for this mobile application, offering real-time data synchronization, user authentication, and efficient data storage and retrieval. It helps streamline the development process and provides a reliable backend infrastructure for the application's functionalities.

CHAPTER 4

MODULE DESCRIPTION

4. Module Description

4.1. Module Name

Online College Forum

4.2. Aim of Module

- To create a simple and interactive application for the Principle, Lecturers, Other Staff, Alumni and students so that they can share current events, happenings, achievements and hard news or special memories and announcements about the college.

- To provide a platform for the users of the application so that they can interact with each other in the community in the form of a group chat. And share their opinions on a specific topic.

- To make it convenient for the users to login, signup, and recognize each other, each user is uniquely identified by their ID code.

- To make all this process paperless, timeless and convenient.

4.3 Module Description

In this module, an application is created for the users i.e. Principle, Lecturers, Other Staff, Alumni and students to share current events, happenings, achievements and hard news or special memories and announcements about the college.

In the college forum every user is able to see all these details and fact-figures, so an image and caption upload it in the format of a post that can be seen by all users. All users can add new posts to feed. There is a community module (communication medium) where we can create a new community for a special cause, just like a chat group for users. The user can send messages and see all the messages of other use.

4.4. Applications of Modul

- College
- Education Section

CHAPTER 5

DESIGN

5. Design

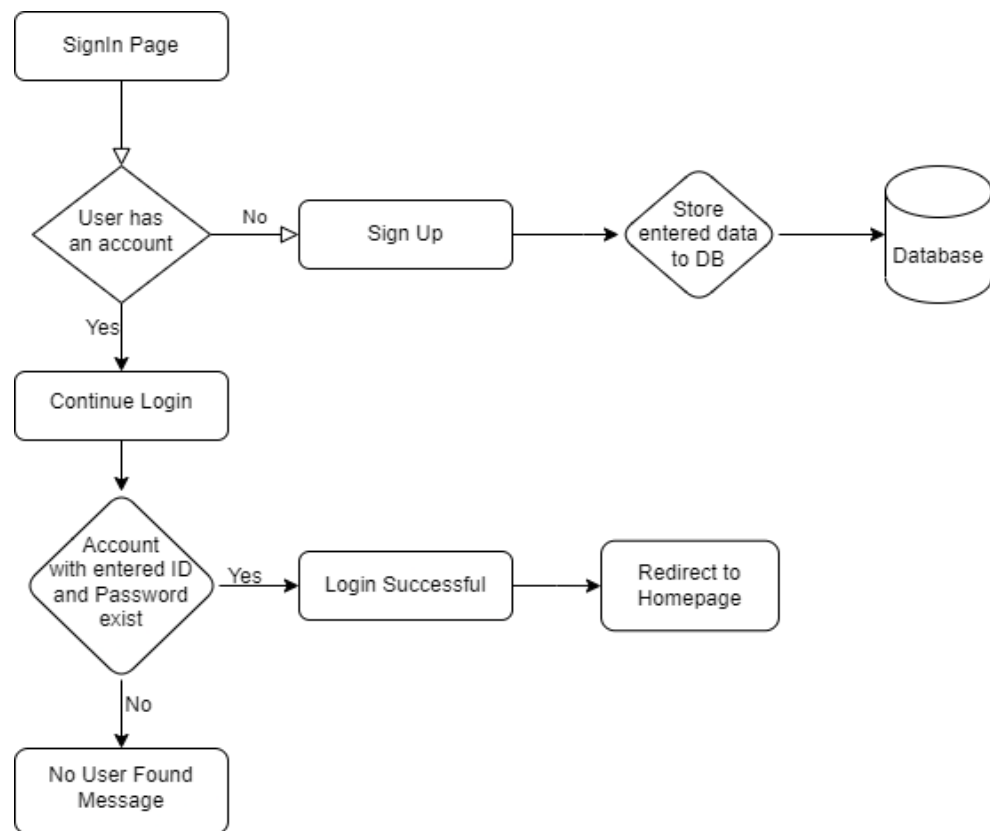## 5.1. Data Flow of user registration

Fig. 5.1 Data Flow of User Registration (DFD)

When the user opens the application, they are initially presented with the Login Page. If the user is already registered and has an existing account, they can enter their ID code and password in the provided fields. The application then verifies the entered ID code and password against the stored user data. If the entered credentials match the records in the database, the login is considered successful. The user is then granted access to the application's features and functionalities.

However, if the user is new and does not have an existing account, they can choose the SignUp option from the Login Page. By selecting this option, they are redirected to the SignUp page. On the SignUp page, the user is prompted to enter the required details, including their branch, ID code, username, and password. These details are necessary to create a new user account.

Once the user enters all the required information, they can proceed to submit the SignUp form. The application then validates the entered data to ensure its accuracy and completeness. If all the required fields are properly filled and the entered information meets any additional validation criteria, the application proceeds with creating a new user account.

Upon successful registration, the user is automatically logged into the application using the provided credentials. This means they do not have to go through the separate login process after signing up. They can immediately start using the application's features and functionalities with their newly created account.

Overall, the flow of the user registration process involves presenting the Login Page to existing users, allowing them to log in using their ID code and password. For new users, the SignUp option directs them to a page where they can enter the necessary details to create a new account. After successful registration, the user is seamlessly logged into the application and can begin utilizing its features and services.
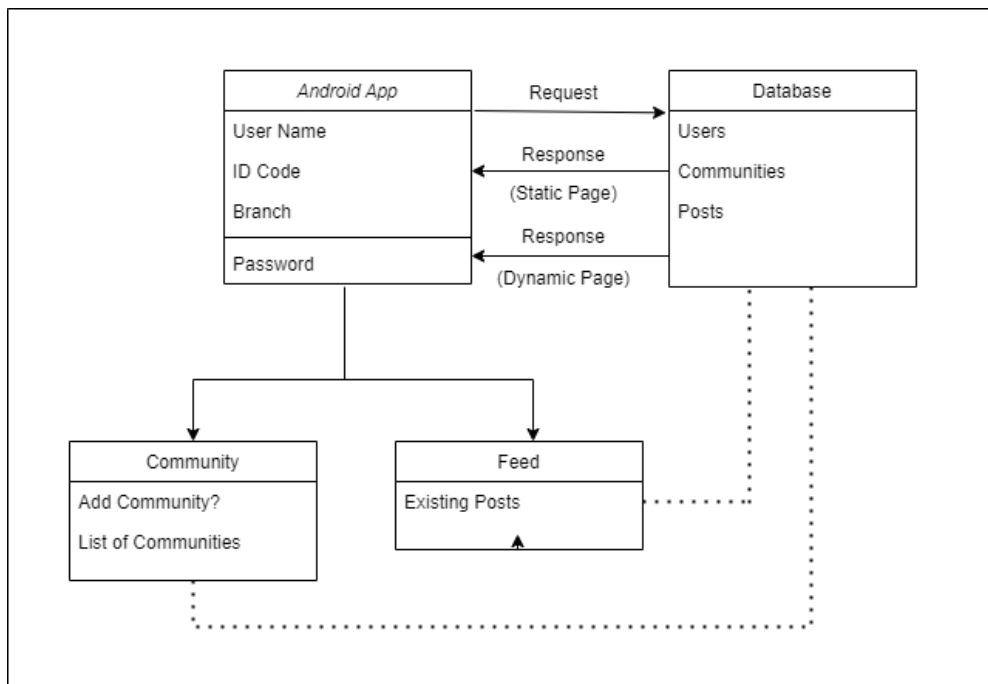
5.2 Structure Flow

Fig 5.2 Structure Flow Diagram

The above figure shows the backend structure of the module about how the backend structure of the Android App. Fig 5.2 shows how the request from the client App to the database server goes and generates a dynamic requested web Page for the user.

CHAPTER 6

SYSTEM IMPLEMENTATION

6. System Implementation

In a college forum all users i.e. Principle, Lecturers, Other Staff, Alumni and students can share current events, happenings, achievements and hard news or special memories and announcements about the college. For doing so, the user can make a post, First of all the user has to click on the post icon on the bottom navigation of the app. Then the user will be redirected to the post module, the user can select the image to be posted by clicking on the camera icon and selecting an image from the Gallery or Google Photos the selected image will be displayed. The user can add the respective caption to the selected image to provide further information, For that he has to click on the edit text, write a caption and click on post. It takes nearly 5 seconds to add the post, after that a pop up message will show up on screen.

The users can use the communities as a group chat, to share their opinions on certain things and share news. For that user has to click on the menu icon on the top right of the home screen. Then he can see options like community, about us settings and logout. After clicking on the community, the user will be redirected to the community module. First of all there is an option to add a new community, the user can give any purpose related name to the community. Then the new community will be added, the members of the community can now send new messages to the community and see messages of other users as well.

CHAPTER 7

ADVANTAGES OF THE PROJECT

7. Advantages of the Project

1. Improving the Process of Information transfer

Our College Forum is improving the whole process of the communication between all users i.e. Principle, Lecturers, Other Staff, Alumni and students. Any one who wants to share something like current events, happenings, achievements and hard news or special memories and announcements about the college has a platform in the college forum

2. Making the information sharing process paperless

Our college forum is eliminating the use of paper by making this whole process digitized which helps the institute to easily manage the whole process.

3. Making announcements and sharing news is easy and speedy

Our CAS module is making this whole process seamless and easy for all users i.e. Principle, Lecturers, Other Staff, Alumni and students by giving them an online platform to interact easily.

4. The students and staff of similar interests can find opportunities easily

The students and staff can make communities for having a group chat and discuss related topics and share data.

5.Real-time Updates

Whenever a user adds a new post or shares anything on the community the other users can see that shared data at the same time that is information transfer is real time.

6.**Transparency**

Our college forum is providing transparency between all users i.e. Principle, Lecturers, Other Staff, Alumni and students by giving updates and information to all users.

7.Improved Communication

A college forum provides a platform for all members of the college community to communicate and share information. This leads to better communication between students, faculty, staff, and alumni.

8.Dynamic Update

Our application is providing dynamic updates. This means that whenever any information is changed or updated, it will automatically update the database.

9.Increased engagement:

By providing a space for users to share their thoughts and ideas, a college forum encourages engagement within the college community. This leads to a greater sense of belonging and fosters a positive college experience.

10.Enhanced collaboration:

A college forum allows for collaboration between different departments, programs, and individuals. Users can share ideas, work together on projects, and collaborate on events.e.

11.Alumni engagement:

A college forum provides a platform for alumni to stay connected with the college community. This leads to greater engagement and support from alumni.

CHAPTER 8

LIMITATIONS OF THE PROJECT

8. Limitations of the Module

1. Can't share multiple photos in a single post

   We have limitations in selecting the number of photos to be posted at a time. The user can only post one photo at a time and a caption related to it.

2. Posts and messages can not be deleted by users once they are posted

   The user is not provided with the option to delete the post. We tried implementing the delete operation on the post and community messages, but in the lack of time we couldn't solve the errors faced in implementing that feature.

CHAPTER 9
RESULTS/SNAPSHOT

9. Results/Snapshots

9.1.College Forum Application First Step:- Splash Screen
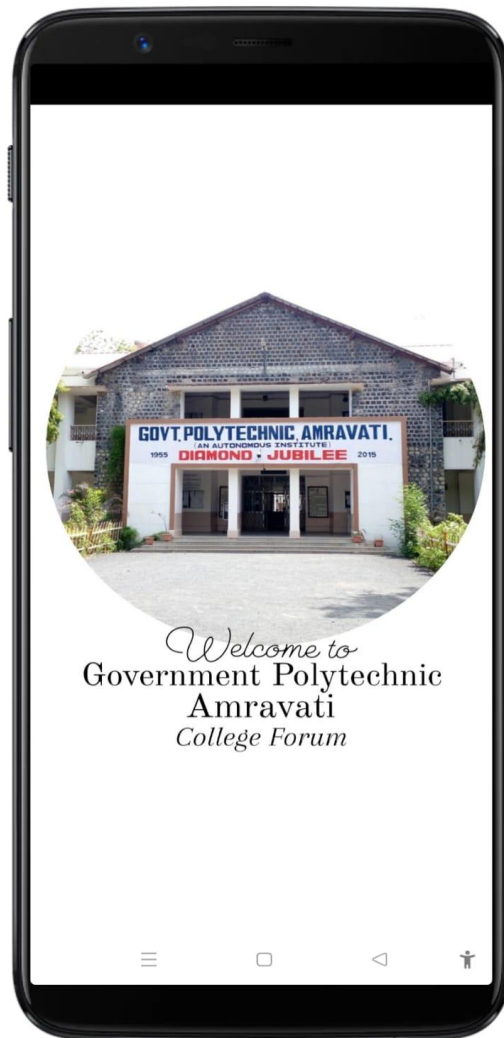
Fig 9.1 Personal Information Step

The College Forum Application First page is Splash Screen. It is only for the design purpose Fig. 9.1

9.2.Interface of Login Page
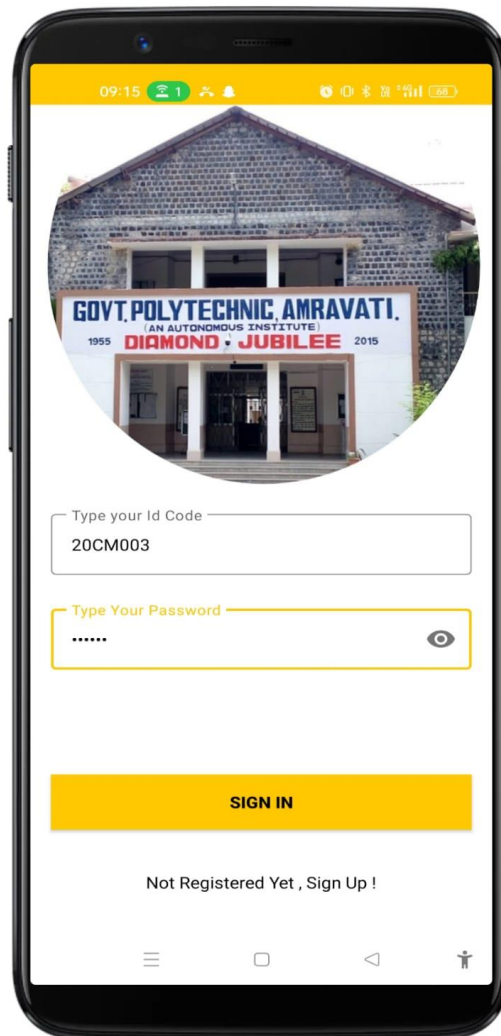
Fig 9.2 Login Page

Fig 9.2 Show the login Page after entering details of user

9.2.Interface of Sign Up Page
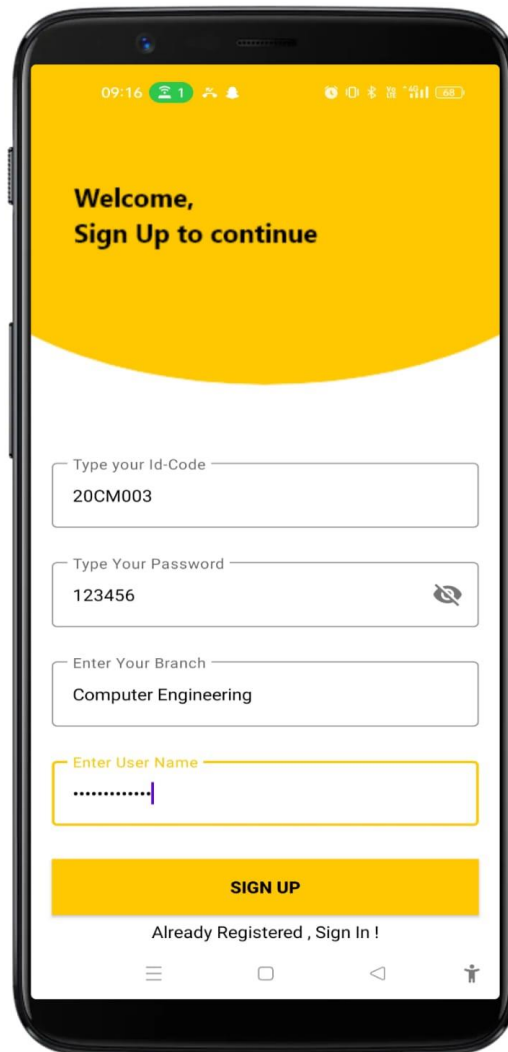
Fig 9.3 Interface of Sign up page

Fig 9.2 This is a Sign up page for creating new user and After entering all   details of new

9.3.Interface of Home Page
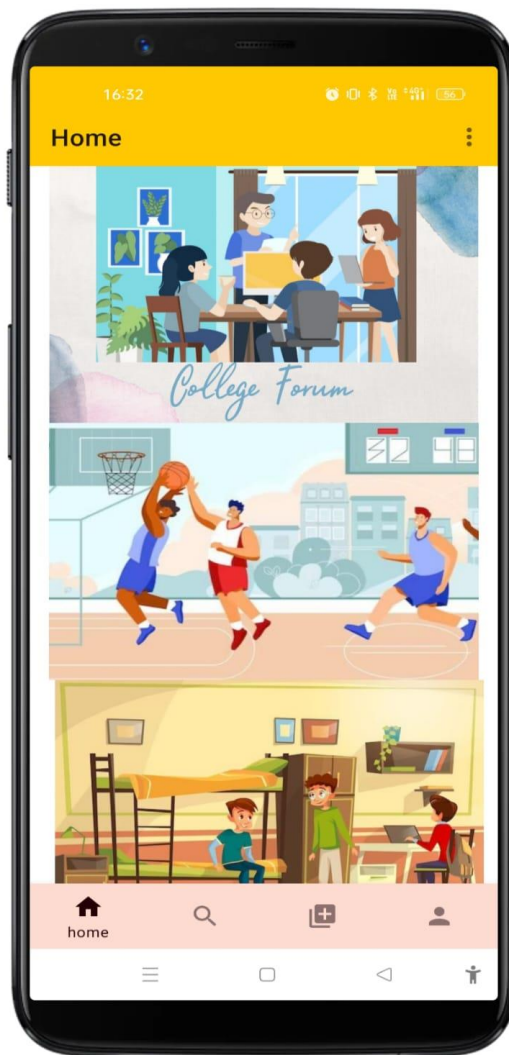
Fig 9.4 Interface of Home Page

Fig 9.4 Show the Interface of Home Page we have put various images for designing purpose.

9.3.Interface of Profile
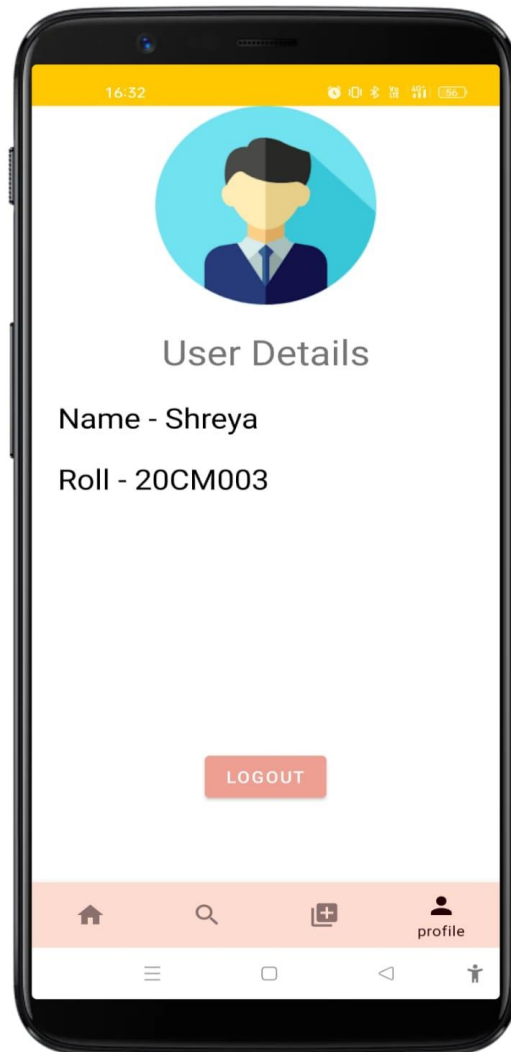
Fig 9.4 Interface of Profile

Fig 9.4 The profile icon Show the details of login user and also the logout button is show

9.4.Interface of Post module
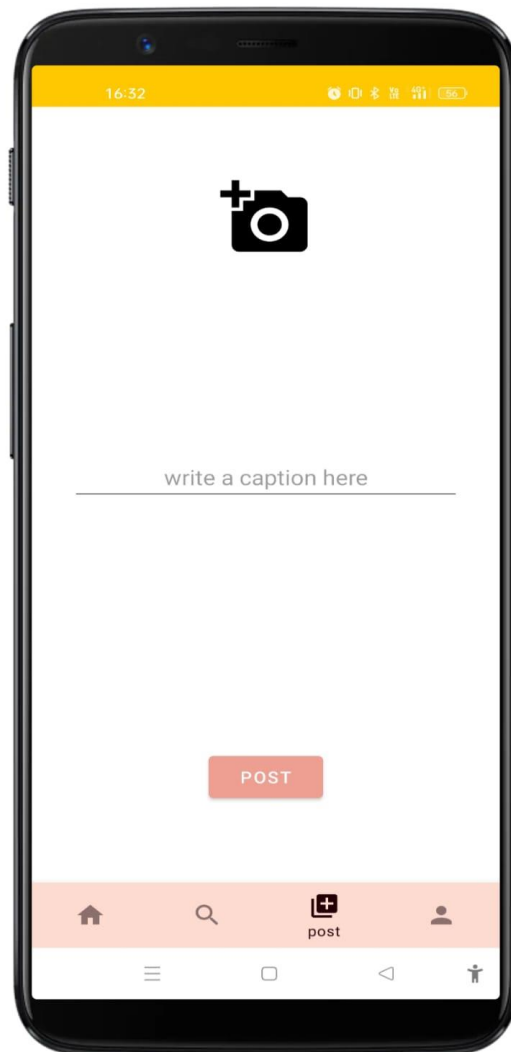
Fig 9.5 Interface of Post module

Fig 9.4 Show the Interface of Post Module using this you can able to post your college related notes and also college related notice.
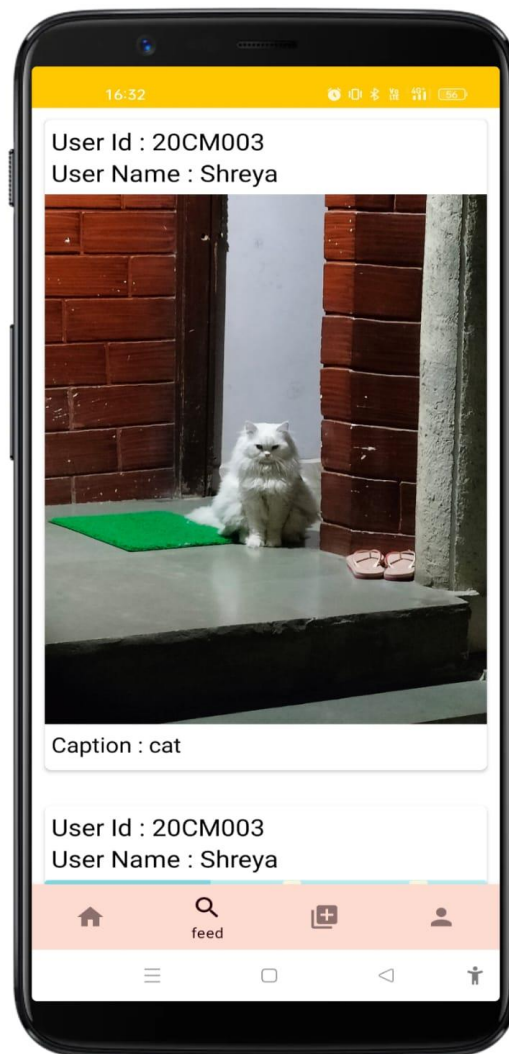
9.5. Interface of feed

Fig. 9.5 Interface of feed

Fig. 9.5 This image show the Interface of feed where the all post are visible.
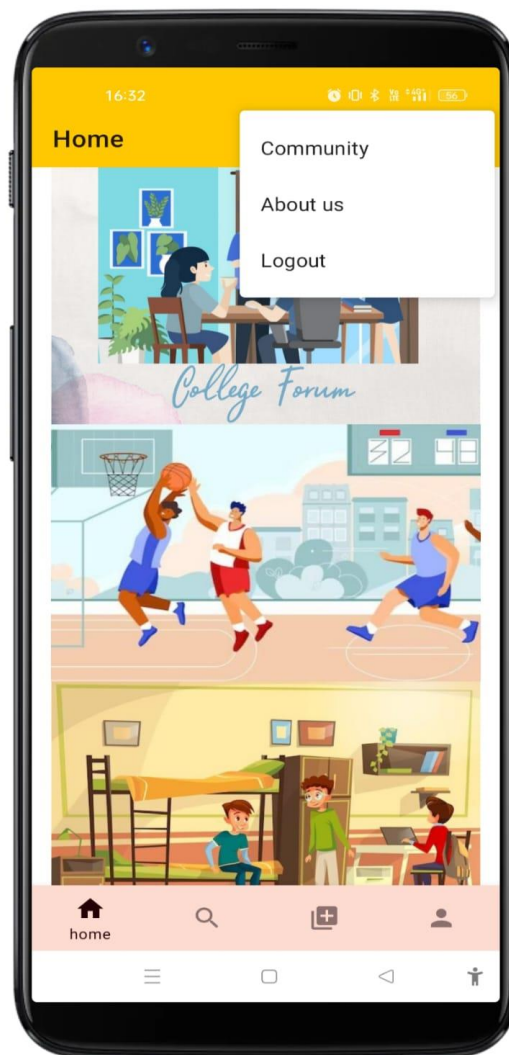
9.5.Home Page Drop Box

Fig 9.5 Home Page Drop Box

Fig 9.5 Show the Community, About Us and Logout options
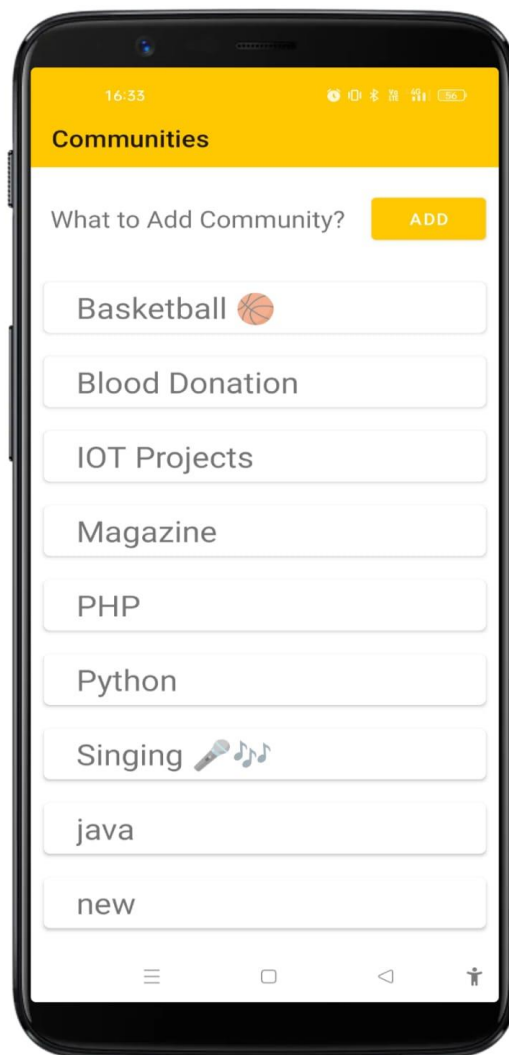
9.6. Community page

Fig 9.6. Community page

Fig 9.6. Show the all Communities that the user will add and the add community button is also there
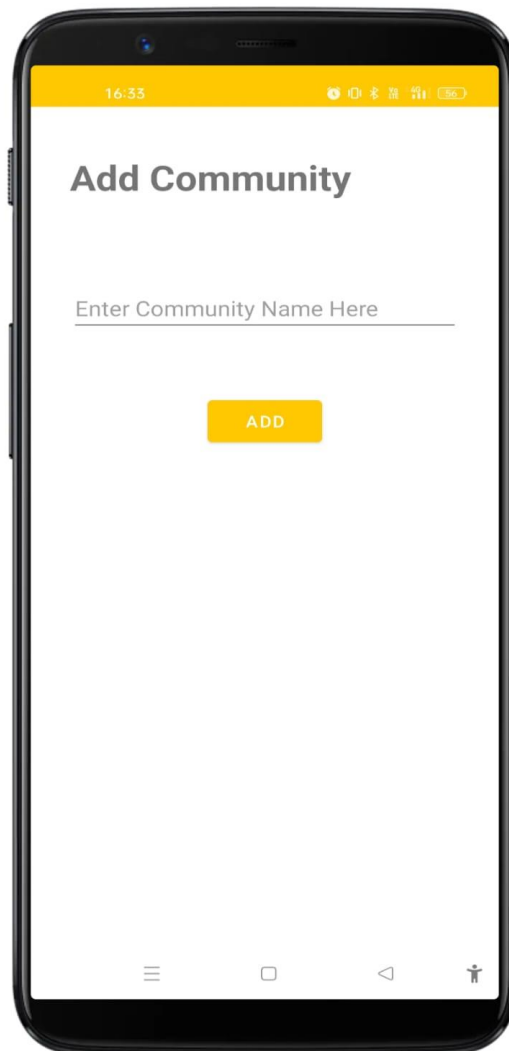
9.7Interface of Add Community

Fig 9.7 Interface of Add Community

Fig 9.7 Show the Interface of Add Community using this you can able to add new
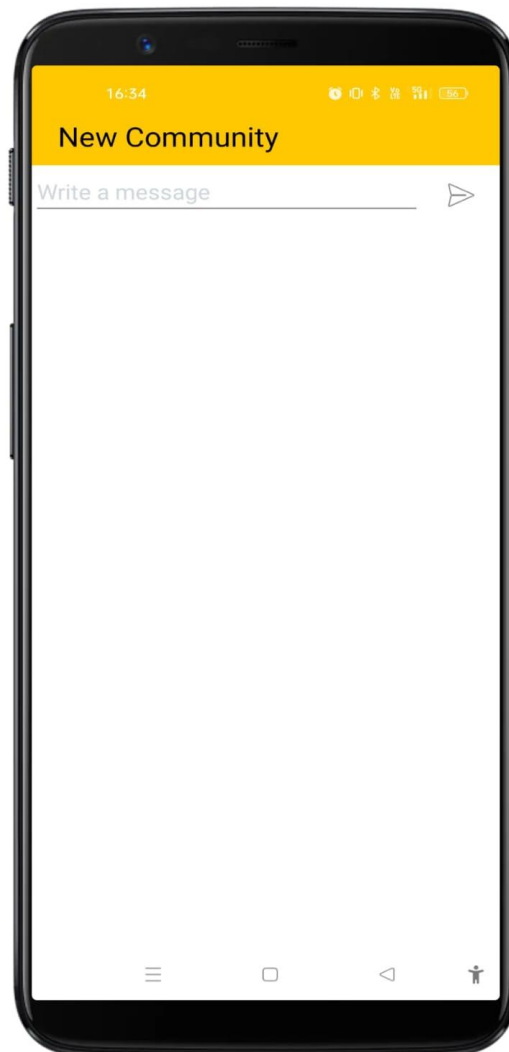community.

9.8.Interface of Sending message

Fig 9.8 Interface of Sending message

Fig 9.8. Show the Tab where the user is able to sending the message on new created community
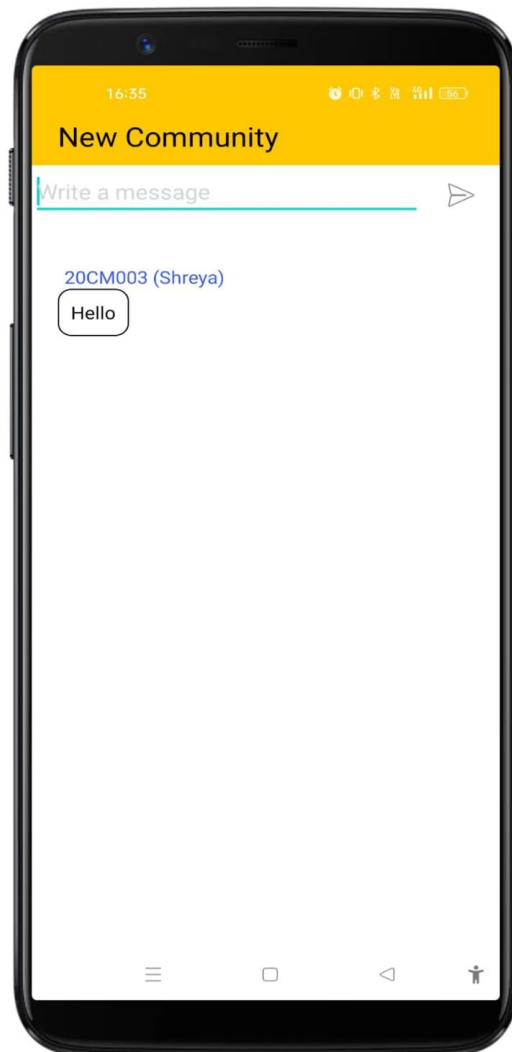
9.10. Interface of Sending the message

Fig .9.10. Interface of After writing the message

Fig .9.10.Show the Interface of Community module After writing and sending the message
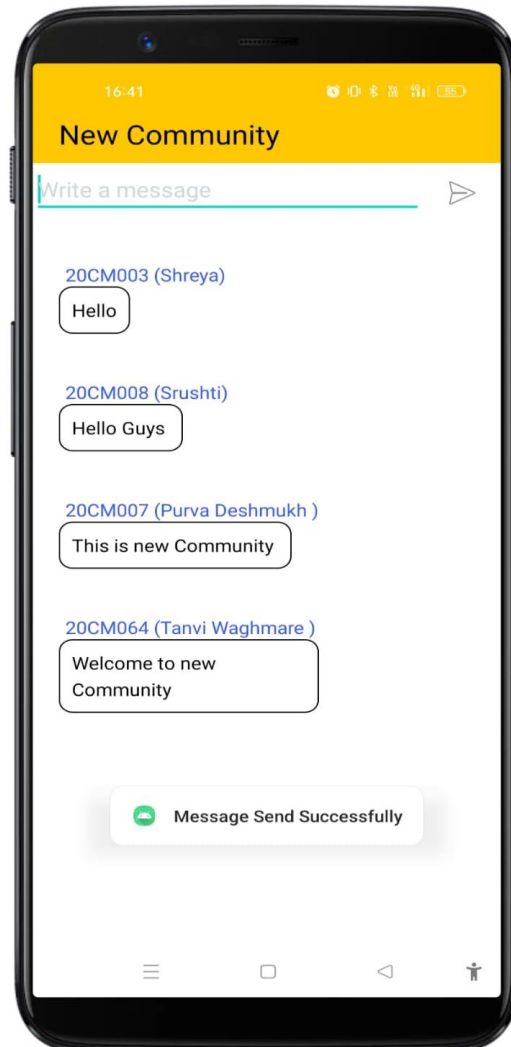
Fig .9.10. Interface of Chatting

Fig .9.10. Interface of Chatting

Fig .9.10. Interface of Chatting in community where the user can able to chat
with another use

CONCLUSION

Conclusion

In conclusion, a college forum is a valuable tool for fostering communication, engagement, and collaboration within a college community. By providing a platform for all members of the college community to share information, ideas, and memories, a college forum promotes a sense of belonging and encourages engagement. With features like a community module, users can create chat groups for special causes or interests, enhancing collaboration and communication within the community. Moreover, a college forum provides a centralized location for users to access important information about the college, including news, events, and announcements. This leads to greater efficiency and productivity, making it easier to coordinate events, projects, and other activities. Overall, a college forum is an effective tool for creating a positive college experience for all users, and for promoting a lifelong connection between the college and its alumnin.

FUTURE SCOPE

Future Scope

1.AI Chatbots

AI-powered chatbots became all the rage during the pandemic with most employees working from home, and many laid off.

Chatbots use a combination of speech recognition, NLP, and cognitive intelligence, minimizing the need for human support on websites. The new generation of chatbots are more independent and are gaining conversational maturity and emotional intelligence, capable of executing complicated logic and conversing via multiple channels.

2.Integration with other tools:

In the future, college forums may be integrated with other communication tools such as video conferencing, virtual reality, and artificial intelligence. This will allow for even more efficient communication and collaboration among members of the college community.

3. Personalization:

In the future, college forums may be integrated with other communication tools such as video conferencing, virtual reality, and artificial intelligence. This will allow for even more efficient communication and collaboration among members of the college community.

4. Data analytics:

College forums may use data analytics tools to track user engagement and behavior, and to analyze trends and patterns in communication and collaboration. This will enable colleges to better understand their communities and to make data-driven decisions about communication and engagement.

REFERENCES

References

- Creating a College Forum: Engaging the Campus Community in Dialogue and Deliberation," by Martín Carcasson and William Doherty: https://www.nifi.org/en/creating-college-forum-engaging-campus-community-dialogue-and-deliberation

- The Power of Online College Forums," by Mandy Fricke: https://www.huffpost.com/entry/the-power-of-online-colleg_b_5810e6e9e4b04660a43868f

- "How to Build a Thriving College Forum," by Heather Swick: https://www.entrepreneur.com/article/244059

- "The Future of College Forums: AI, Analytics and Virtual Reality," by Sean Gallagher: https://www.educationdive.com/news/the-future-of-college-forums-ai-analytics-and-virtual-reality/560096/

- "Using Online Forums to Increase Student Engagement and Interaction in Online Courses," by Eileen O'Shea: https://www.facultyfocus.com/articles/online-education/using-online-forums-to-increase-student-engagement-and-interaction-in-online-courses/