



UNIVERSITY INSTITUTE OF COMPUTING

CU MESSENGER APP FOR CU STUDENTS AND FACULTY ONLY

A PROJECT REPORT

Submitted by

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IN

University institute of computing



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Chandigarh University

February 2022

BONAFIDE CERTIFICATE



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This is to Certified that this project report “**CUHUB**” is the bonafide work of “ Amandeep Singh (19BCA1063), Manthan Kalsi(19BCA1119), Shalvi Singh(19BCA1103), Ritika Rana(19BCA1126) ”who carried out the project work under my/our supervision.

<<Signature of the Head of the Department>> <<Signature of the Supervisor>>

SIGNATURE

SIGNATURE

<<Name>>

<<Name>>

SUPERVISOR

HEAD OF THE DEPARTMENT

<<Academic Designation>>

<<Department>>

<<Department>>

Submitted for the project viva-voce examination held on_____

INTERNAL EXAMINER

EXTERNAL EXAMINER

ACKNOWLEDGEMENT



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We would like to extend out deepest gratitude and respect to all those who provide us all the guidance required to complete this project.

we would like to thanks our project supervisors **Dr. Dharmpal Singh, Dr. Abdullahkhan, Dr. Saloni Manhas, Dr. Abdullah Khan**. We have been greatly benefitted by their regular advice and support.

We would like to express our sincere thanks to our head of department(HOD) and our internal guide.

Last but not the least we would like to mention that we are greatly indebted to each and everybody who has been associated with our project at any stage but whose name does not find a place in this acknowledgement .

With sincere regard

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ABSTRACT

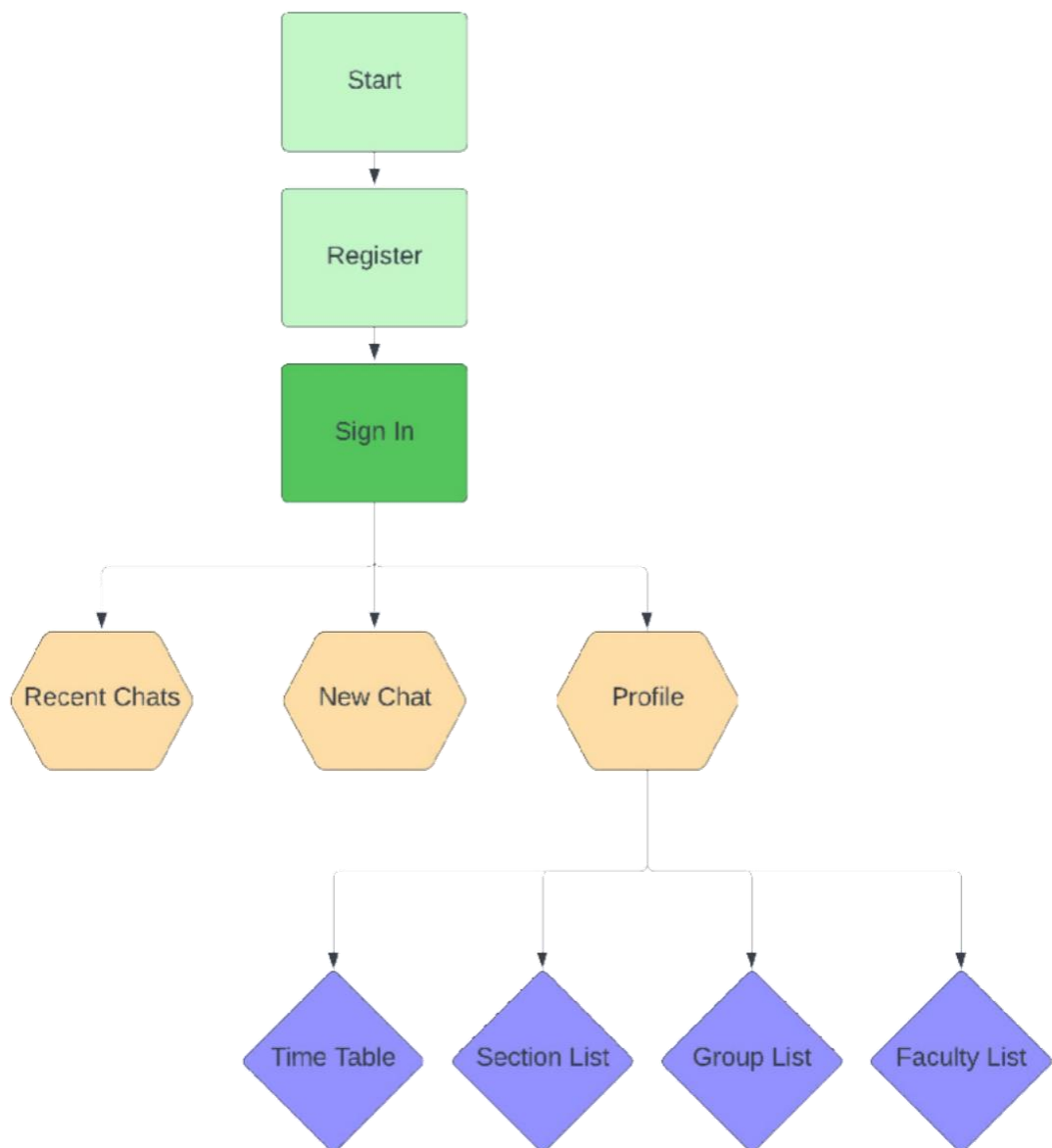
In the era of online studies it is important for the college as well as for the college students to have an application which could fulfill all the college related requirements of the students and faculties. Though the college has its own applications for the students but there are multiple platforms which we students were using to perform our daily college work. So, to reduce this problem we came up with a solution that is “CUHUB”. Now, we students do not need to go to anywhere to get any information as they will get all the important information in this application only. It gives us a better user interface. In this application students can share their ideas of worksheets, projects or any other class work. They can easily login through their official college email-id it will increase the authenticity of this application as only those students will be able to login who have their college official email id.

It will also be helpful for faculties who find it difficult to contact individual students, as this application will provide the contact lists of all the students. Now faculties will find it easier to convey their thoughts and message to the students easily through group chat option or if they want to message them separately then they can do that too.

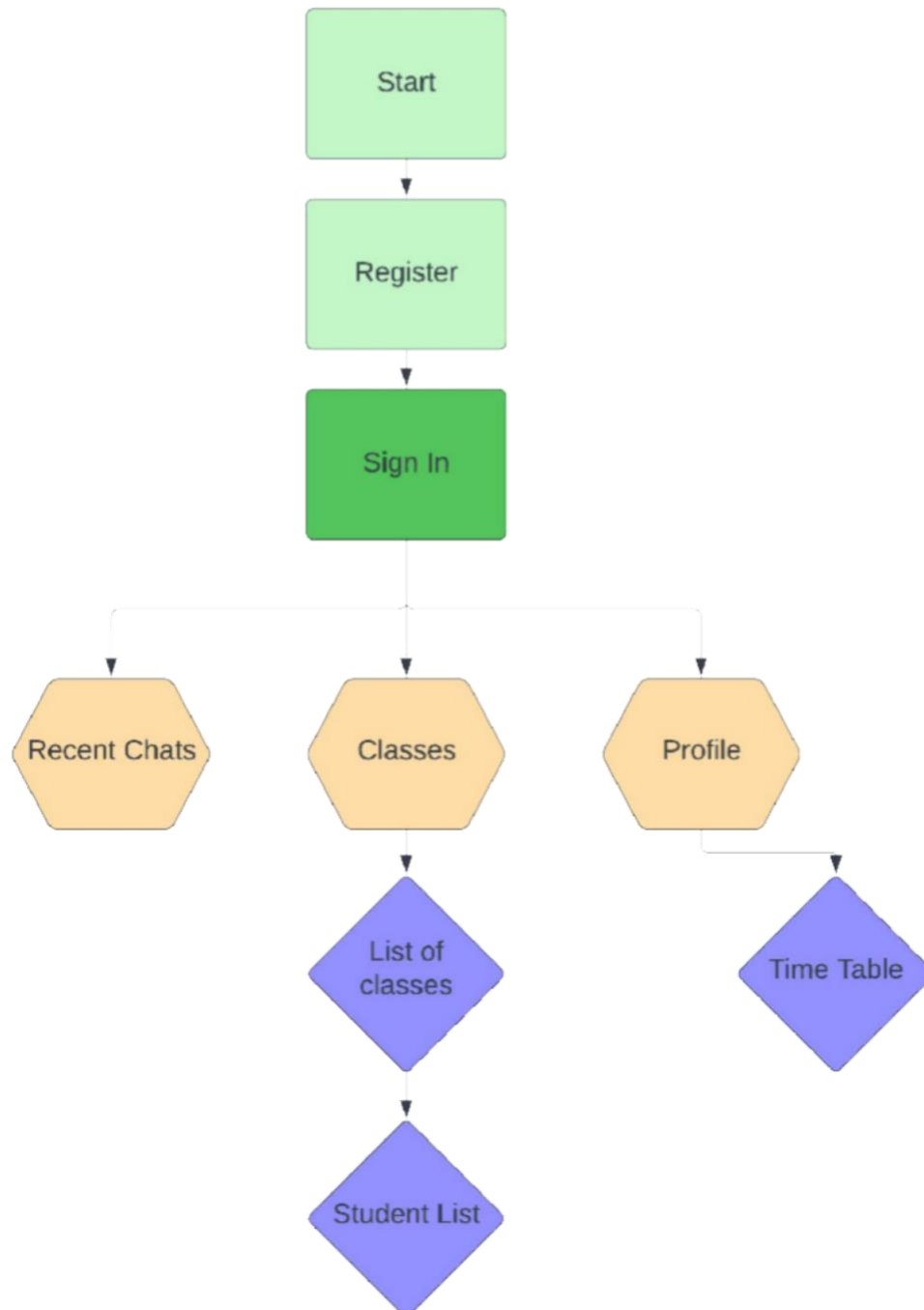
We have designed and developed this application on **android studio** and use its **android native** feature to make it easier for the users to install and run it on their android devices. It has a great user interface.

GRAPHICAL ABSTRACT

Student View



Faculty View





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Chapter 1: Introduction

Covid-19 has disrupted our normal lifestyle and everything has shifted to virtual platform. Now we are not getting the same experience which we were getting in physical classes where interaction with teacher's and classmates was so easy ,where clearing doubts was so easy. So we are introducing '**CU HUB**' the android application which would be a miniature of our college website.

Earlier it was difficult to get college notification and information by logging into website everytime and also it was difficult to connect with teachers but **CU HUB** will be a one stop solution of above mentioned problems .this application will facilitate communication between students and faculties via database.

One of the best thing about **CU HUB** is that only authorized students and faculties will be able to join this platform as, admin will have all the rights to add and remove students and faculties so no outsiders can join this platform this feature will improve the security which is a need of every organization.

This app will have a separate login page for faculties, students and admin. Students will have the facility to talk with any teacher separately and they will also have the contact details of all the teachers of the college. Earlier if we had any problrm related to assignments, homework or any important notification we want to connect to the teachers but sometimes we could not get the contact information of teachers at the right time so, to solve this problem we will attach each and every teachers details to this app which will be visible to all the students.



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Teachers will have the facility to upload circulars which will be made visible to every students and through this teacher can easily convey their message to a large number of students this will reduce the work load of teachers as earlier if teachers had to convey any message to whole department they use to message in groups separately or convey to every class representative which was a hectic task to do



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i. Identification of client & need

This project is mainly targeted at colleges. It will solve the problem of teachers and students. Generally students face problem in getting right information at right time and sometime they miss important notification regarding training, placement interviews, holidays and project submission etc. . sometimes when we feel difficulty in assignments and in projects we want to connect to teachers but we couldn't do so because of the unavailability of contact information of teacher's on official college websites and not only students but teachers also faces some problem in conveying information to students so, we have recognized the needs of teachers and students and are making this application **CU HUB** .

Some of the needs we recognize during the analysis of the requirement, these are:-

- i.** Admin can create user as per college permission.
- ii.** There will be a separate page for every students where they'll get notices, their chat history and other facilities in updated manner.
- iii.** Faculties can give notices for the students.
- iv.** A person should be able to login to the system through the first page of the application.

ii. Relevant contemporary issues

Suddenly, when Covid hits India in 2020 it disrupted the whole education system and gradually education completely transferred to online mode so both students and teachers face problem in adopting virtual mode. Though we have successfully adopted virtual mode and technology have made everything easy and possible but still there are some gaps which needs to be bridged so we have recognized the needs and have made this application.



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We identify several problems including unauthorized access and to solve this we have added a feature that only admin will have the access to add and remove the teachers and students which will prevent with unauthorized access here admin will be college.

iii. Project Identification

To design and develop this application we have to use **Android Studio** and use its **Android Native** feature to build an app which can be installed on user's **Android Devices** through which they can easily chat with there classmates or there respective instructors. They will have to log in through there **user id's** and then will be able to access all the features of the app



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iv. Task Identification

To meet the set goals the app should have :-

- Login on the basis of UID
- Dynamic Database which can link students to there respective teachers
- Chat Functionality
- Groups Functionality
- Query Feature for student's doubts
- Circular feature where teachers and admin can upload circulars which will be made visible at the students end.

v. Timeline of the project (in weeks)

Start date	End date	Project status
18 th February	27 th February	Project Planning and Research
25 th February	2 nd March	Designing and Markup
28 th February	15 th March	Back-end Development
12 th March	22 nd March	Testing and Bug Fixes
23 rd March	2 nd April	Additional Features
1 st April	18 th April	Refinement



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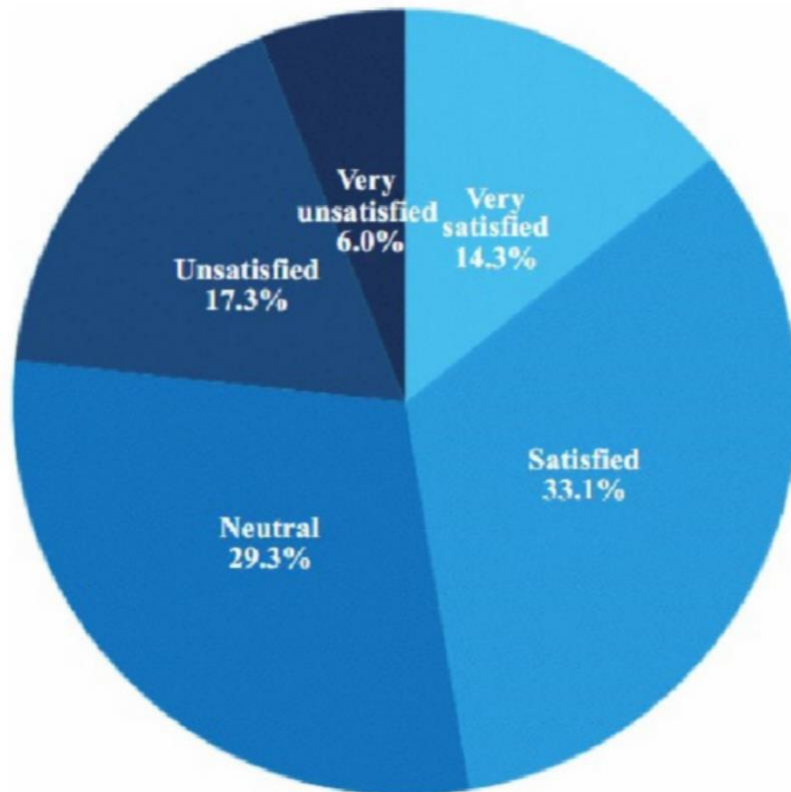
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Chapter 2: Literature survey

To serve our purpose we have done a research over effect of online learning on communication between instructors and students and how a good communication can be productive for students we found that most of the students are unsatisfied with the communication with their teachers during e-learning. One of the research we found on was this *“Great communication skills will add years to your tenure as a successful teacher.”* Dr. Jerry Weast of Montgomery County, Maryland (Weast, 2008). Therefore, effective communication must be a priority not a forgotten thought for great teachers (Hilliard and Newsome, 2013). Effective communication occurs when a desired effect is the result of intentional or unintentional exchange of information, which is communicated by different individuals and performed in a desired manner. This influence also ensures no distortion of the message during the contact process. Effective communication will achieve the desired effect and uphold the effect, with the potential to improve the message's effect. Therefore, effective communication serves the purpose it was intended or built for. Possible objectives may be to make change, to encourage action, to create awareness, to educate or to convey some idea or perspective. Good communication means talking and listening (Velentzas and Borni, 2014). To succeed in their career, instructors need outstanding communication skills. Instructors need listening, interpersonal, written and oral communication skills to promote comprehension of the teaching results and the ability to effectively fulfill their responsibilities. Instructors not only need to carry out technical tasks, they also do need to communicate effectively and efficiently with internal and external customers. Developing effective communication skills is an essential part of the ability for the instructors to succeed. To become a good professional, instructors must possess highly developed levels of communication skills. Developing these skills not only increases the potential of the instructors but will also improve the quality of the teachers created. Advanced communication skills are important in all aspects of the teaching cycle. Instructors must have highly developed oral and writing skills to interact effectively

with supervisors, learners and collaborators. Communication skills are becoming increasingly necessary for success in the organizational environment of our time.

(Ihmeideh et al., 2010). To increase communication effectiveness, schools need to gain knowledge of the value of the responsibilities of the sender and receiver and adhere to the active listening skills (Lunenburg, 2010). [researchgate.net](https://www.researchgate.net)



Out of 133 students, 19 were “Very satisfied”(14.3%), 44 were “Satisfied”(33.1%), 39 were “Neutral”(29.3%), 23 were “Unsatisfied”(17.3%), and 8 were “Very unsatisfied”(6.0%)



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i. summary linking literature review with the project

We are building this application with a mindset to connect the students with their teachers at a single place where the communication between teachers and students becomes easier. So, for this purpose there are many applications available (like whatsapp, blackboard and uims) but there is no single application which can fulfill all the requirements of students at a single platform.

Like whatsapp, where we can chat with anyone and we can easily solve our query by texting to the relevant teacher but for this we need whatsapp number and for the whatsapp number we need to go to blackboard and we barely found teachers full contact information there so if you don't find it there you need to ask to your friends if they have the relevant teacher's contact number or not and sometimes no one has so in that case we have to wait for the teacher's lecture to come so that we can ask our query.

Now, if we talk about getting notice at right time so for notice we have two options one is uims and another one is whatsapp so first of all we didn't get every notice through whatsapp for some notice we need to check our uims and for this you need to login to your cuims every time and also, there is no notification feature available in uims so we didn't get the notice in real time.

Now we have added one more feature which will be the course information feature. when you login to **CU HUB** and will go to a particular subject group you will get all course information (like which topics to be covered in unit 1 and which to be covered in 2 and 3) related to that subject. Earlier you have to separately login to blackboard to get the course information but now **CU HUB** is providing everything at a single platform.



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Overall, we conclude that to perform our day to day college work we need to have different applications installed but to do the same work for which you previously need different applications now will be done with a single application. By reviewing existing solutions we came up with different sets of problems and what can we do to improve these issues. Moreover we also focused on what we as students would want to have if wanted to build such application. This helped us define a clear problem statement and in turn lay a plan to implement the solutions we thought of

ii. Problem Definition.

There is a lot of confusion and misinformation spreading in unofficial groups created by students and lack of affective communication with their faculty to clear out these queries and many others. There seems to be no official platform which can provide solid information only whatsapp groups and even in those sometimes students are not present and may miss crucial notices.

iii. Goals and Objectives.

This is a simple yet powerful one joint integrated platform that will connect all the

student of various department to their relevant teachers and our goal is to :-

1. Increase operational efficiency.
2. Connect the whole campus to a single place.



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3. Provide security as only admin have the access to add or remove faculty.

Main objective of this project is to:

1. fill the communication gap between students and faculties.

2. make reach of every important information and circulars to the students.

3. connect each and every student to a single platform.

Chapter 3: Design flow/Process

i Concept Generation:- Since the app will cater to both students and there professors. It requires two different modes each specialized for respective user type.

Student :- When a user opens the app for the first time it requires the user to sign up or Register. After the the user will taken to the main page and will be shown the List of people the user had chat with. At the bottom of the screen user will option to move between different pages i.e **Chats, New chat, Profile**. Further in the profile section students will have option to view there **Time Table**, get **list of**



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Students in their **section and group** also get a list of their **Professors** and can **DM** them with **real-time chatting**

Faculty: While registering the User has to chose between **Faculty** or **Student**. After signing in as Faculty the user will all the same option as a student would but instead of new chat the user will have a list of classes he/she teaches and can select any student from that list to chat with and can only view his/her Time table from the profile page.

ii Evaluation & Selection of Specifications/Features

- i. It is a one-stop-platform for all the college needs irrespective of courses.
- ii. It has a interactive interface.
- iii. It is designed with the aim to fullfill all the requirement of college students, they will get these features:-
 - a) Chat with any of the teachers.
 - b) Timetable
 - c) Teachers contact information.
 - d) One to one chat with their classmates.
 - e) Get examination marks.
 - f) Official chatting group for different sections seperately.
 - g) Attendance (future goal).

iv. Main feature of this project is that it provide full security to the content available on this applicant because only admin will have the authority to add the students and teachers.

iii Design Constraints– Regulations, Economic, Environmental, Health, manufacturability, Safety, Professional, Ethical, Social & Political Issues considered in design.

Since the the project is targeted at android devices it will have all the design constraints which a mobile device would have. i.e.

- Lack of screen estate
- Optimising UI for mobile devices
- Lack of time

Economic, environmental, health, manufacturability & safety constraints considered in design : – Since this project is completely software driven and has no specific hardware requirement other than an android device which most will have it does not have any apparent

Professional and ethical issues considered in design

- Confidentiality : – There is always the issue of confidentiality of the user's of any social media or chatting app. Issues regarding personal information and contact details
- Abuse : – Where there is an interaction feature among users there are chances of abuse or bullying



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iv Analysis and Feature finalization subject to constraints

Confidentiality : – To tackle issues regarding confidentiality of students and faculty, we've chosen to log in using the UID provided by the university so that no personal contact info can be leaked and only UID and Name can be seen by other students or faculty of any student

Abuse : – While chatting with other students or faculty, user's can see each other's UIDs and thus can report very easily to their faculty of any indecent action so that appropriate action can be taken against the accused.

v Design Flow (at least 2 alternative designs to make the project)

Design Prototypes : -



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1st





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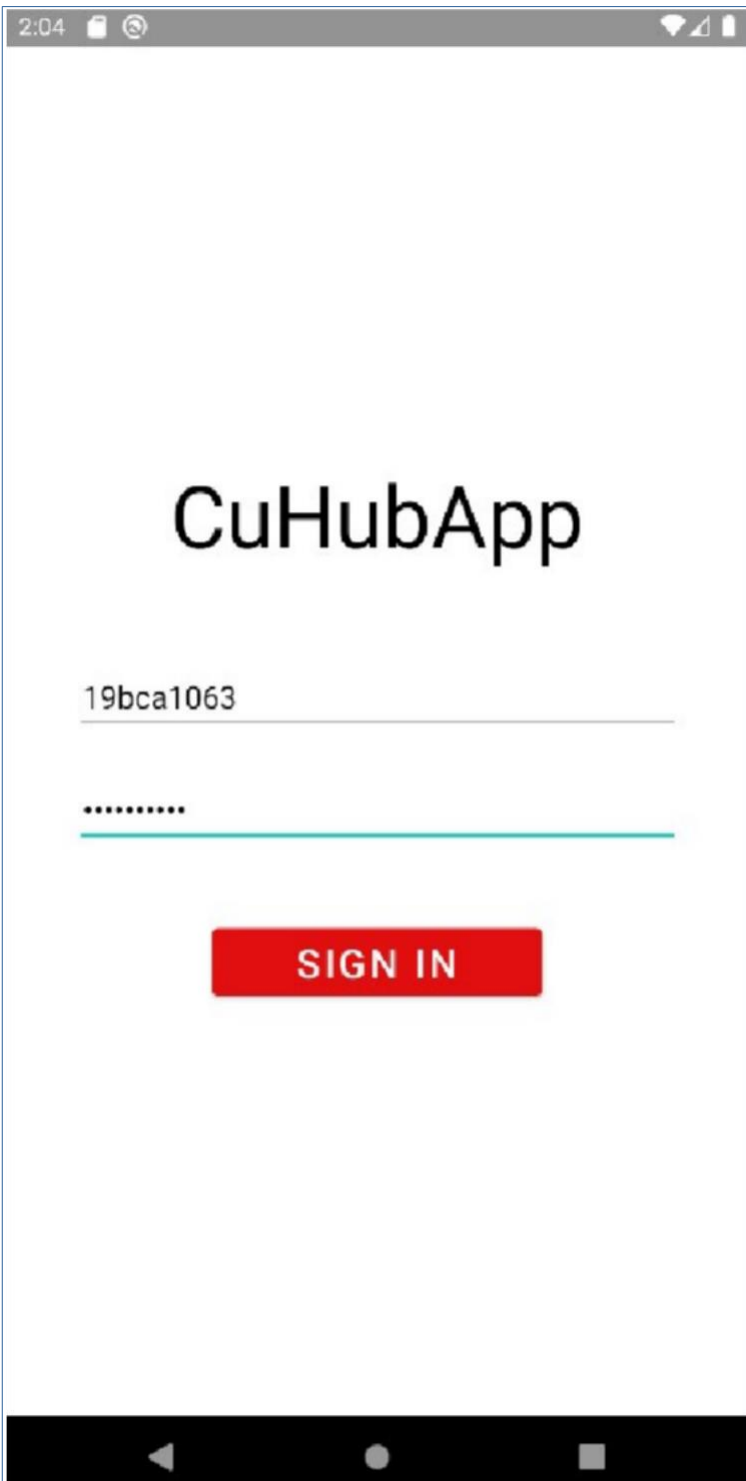




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2nd



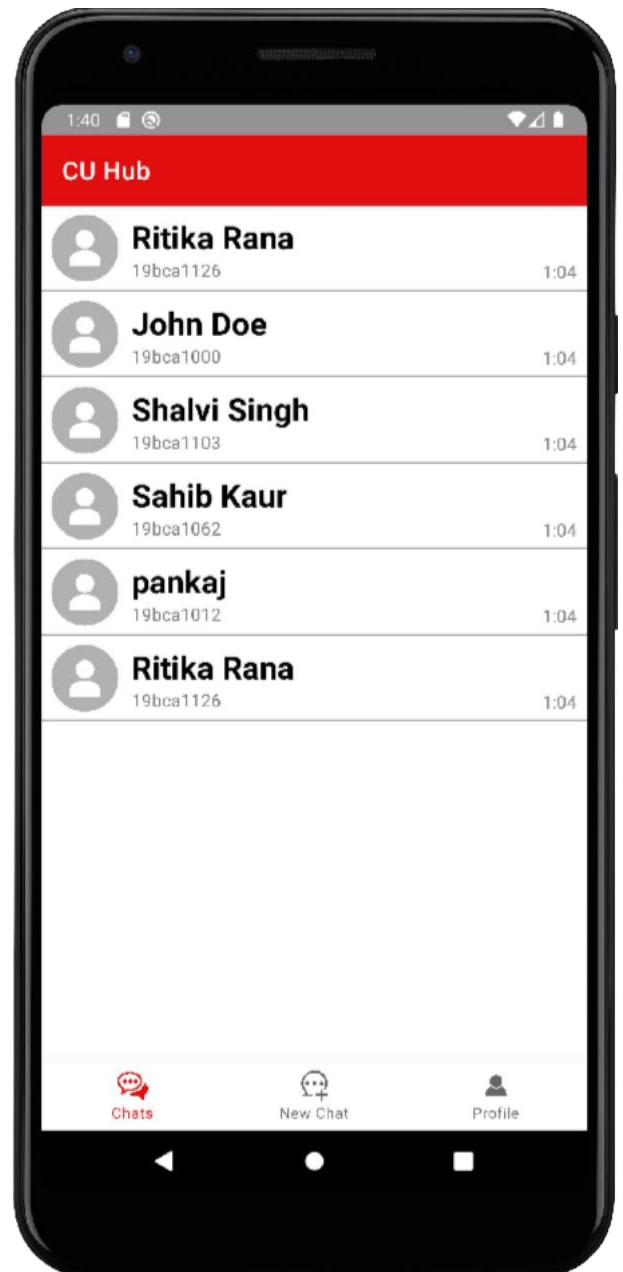
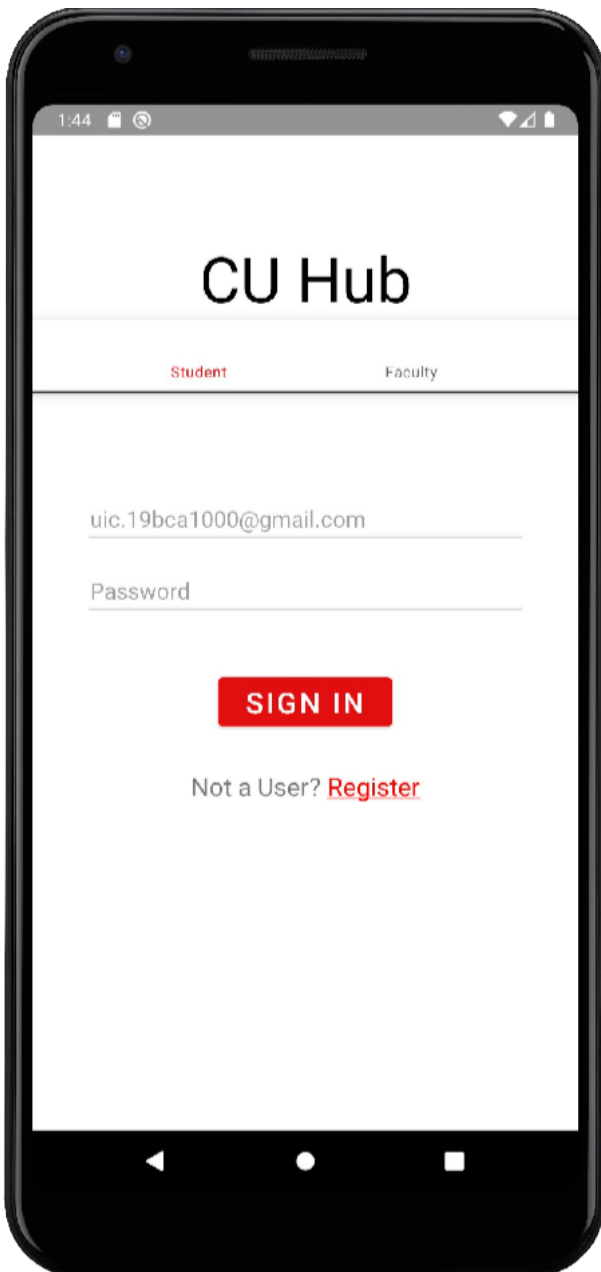


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3rd

Light Theme





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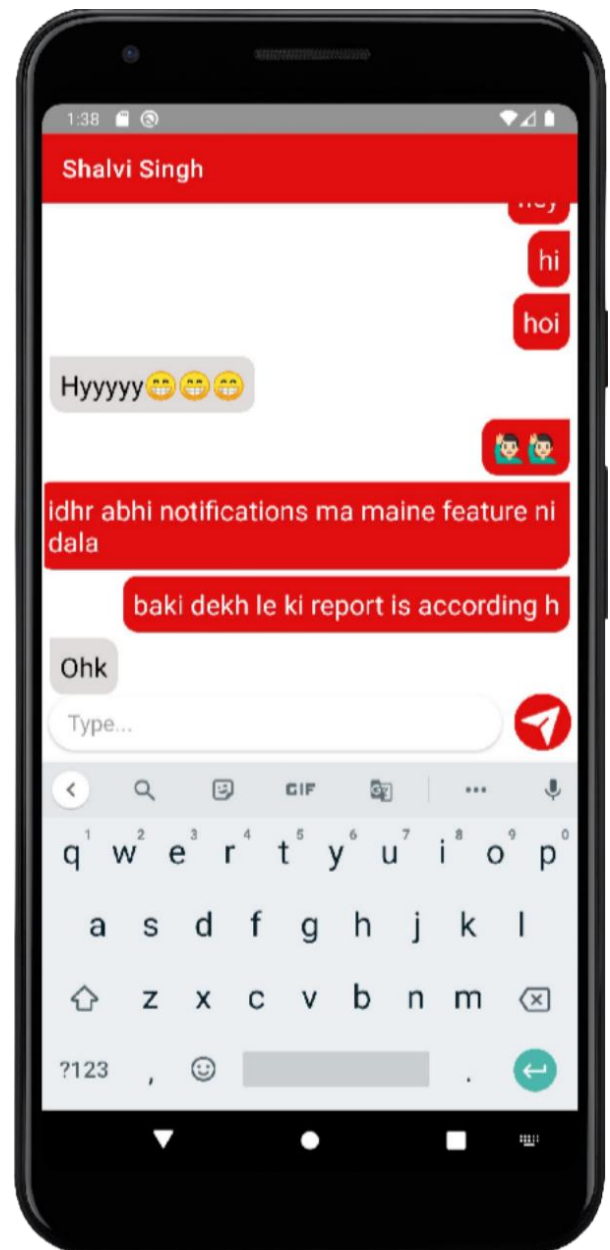
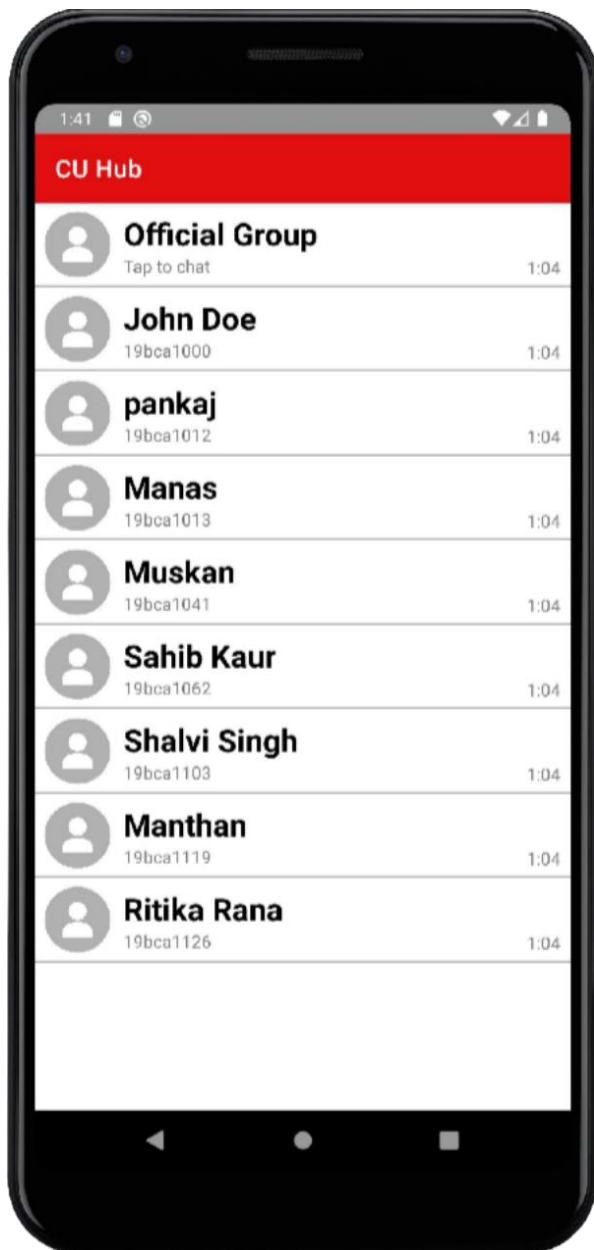
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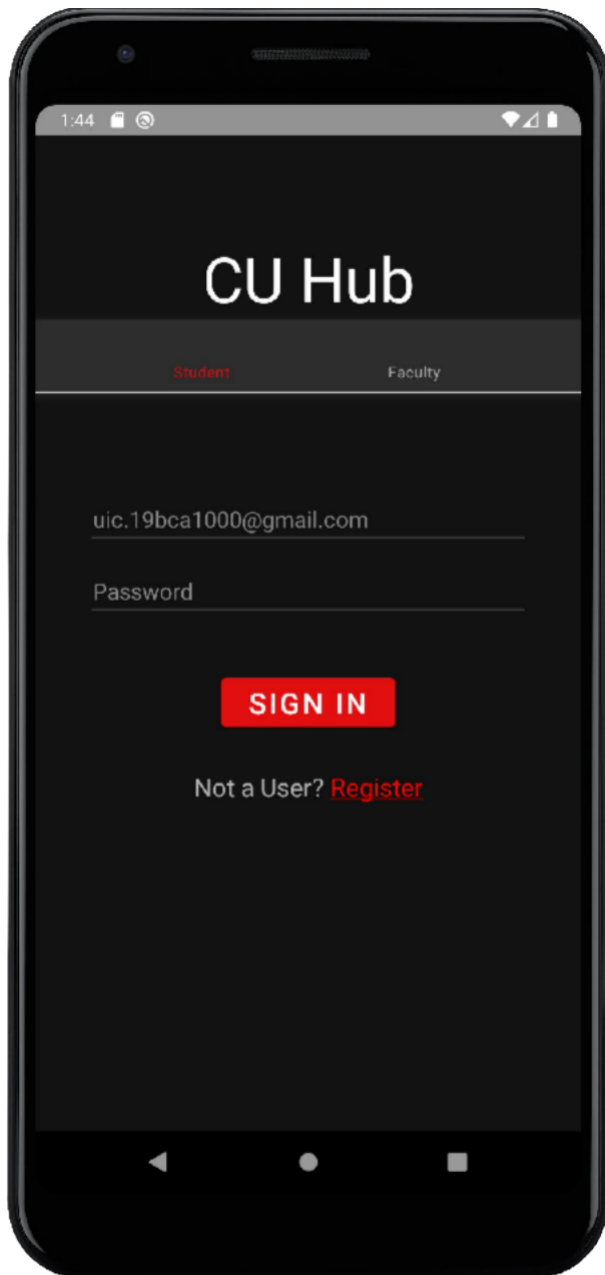




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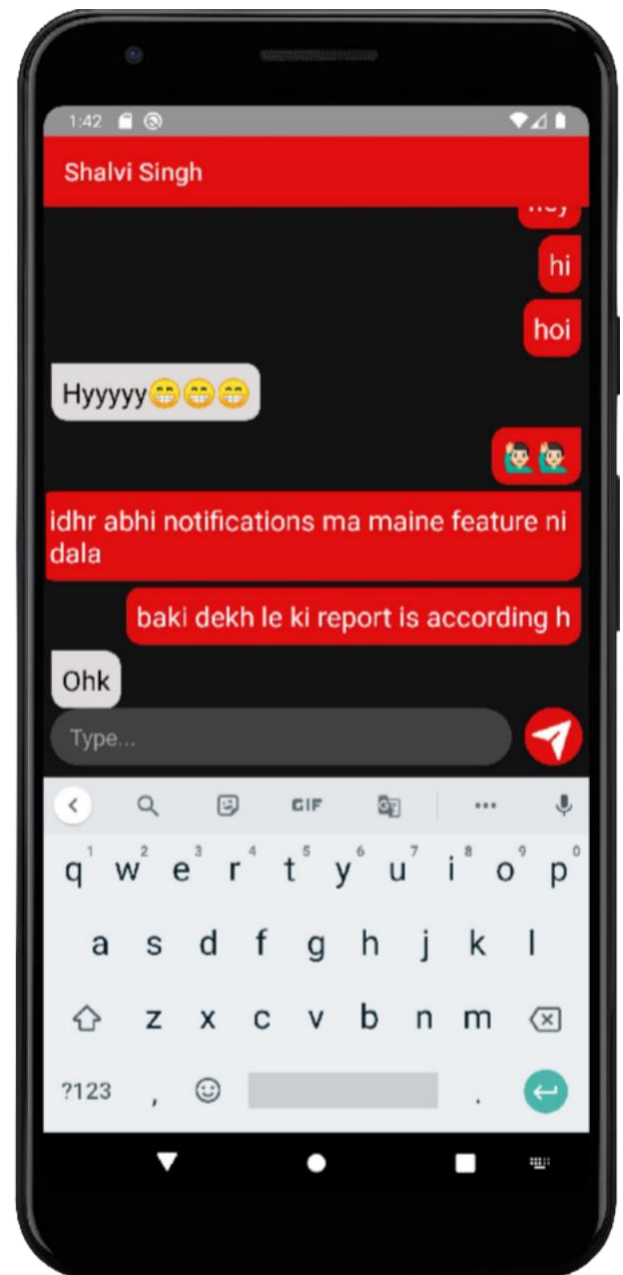
Dark Theme





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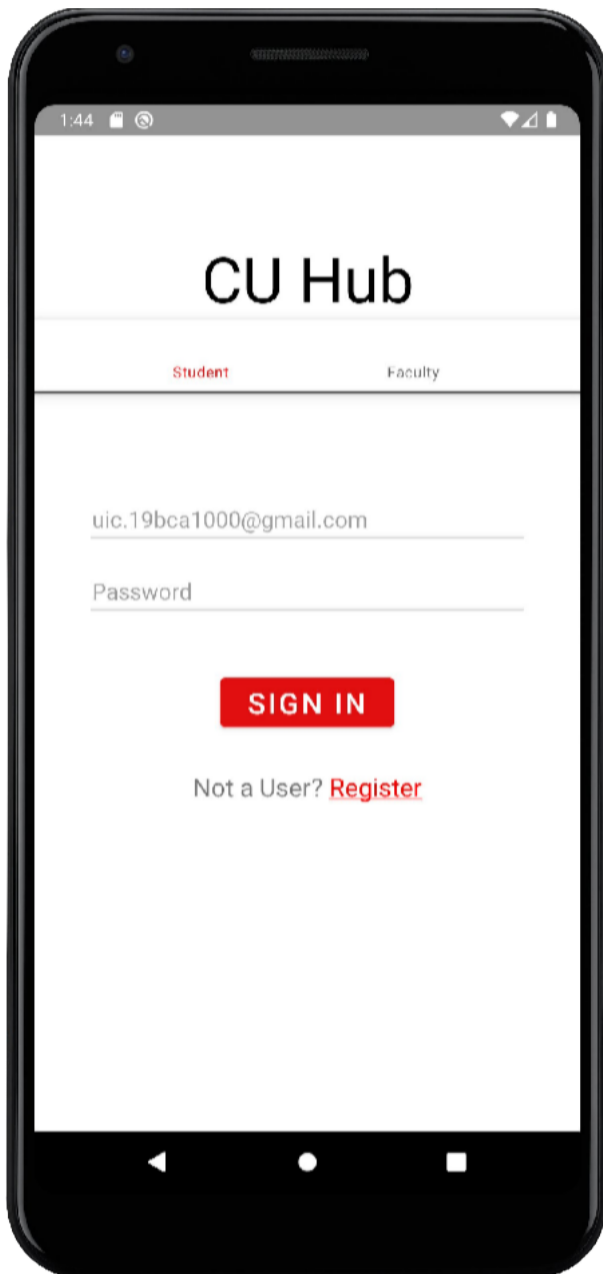




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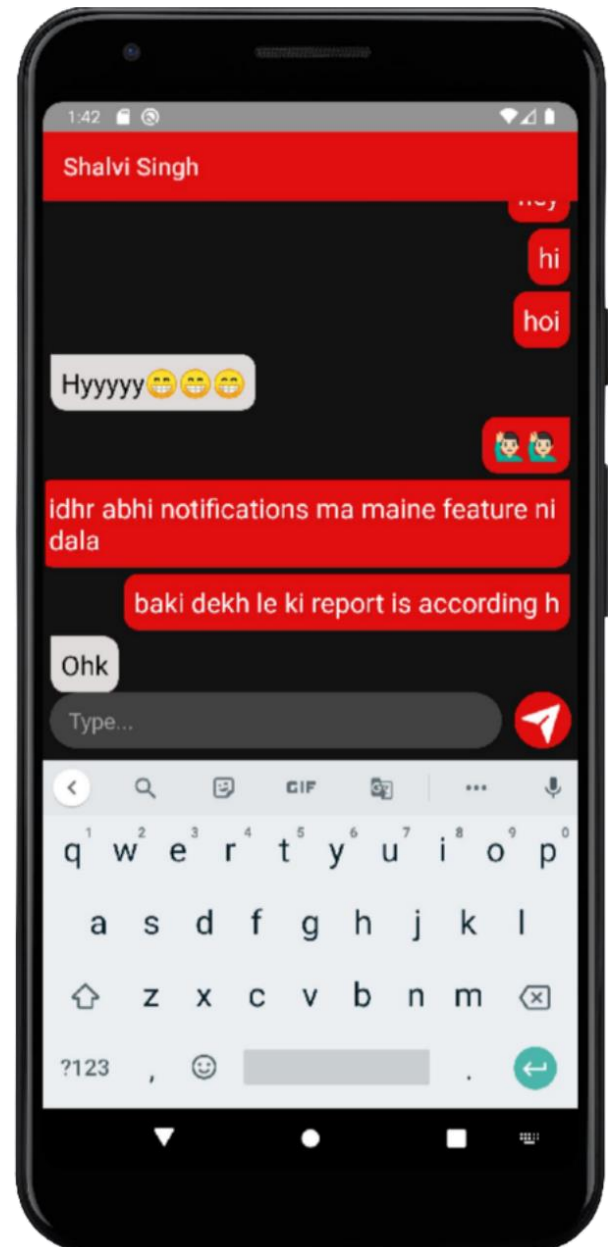
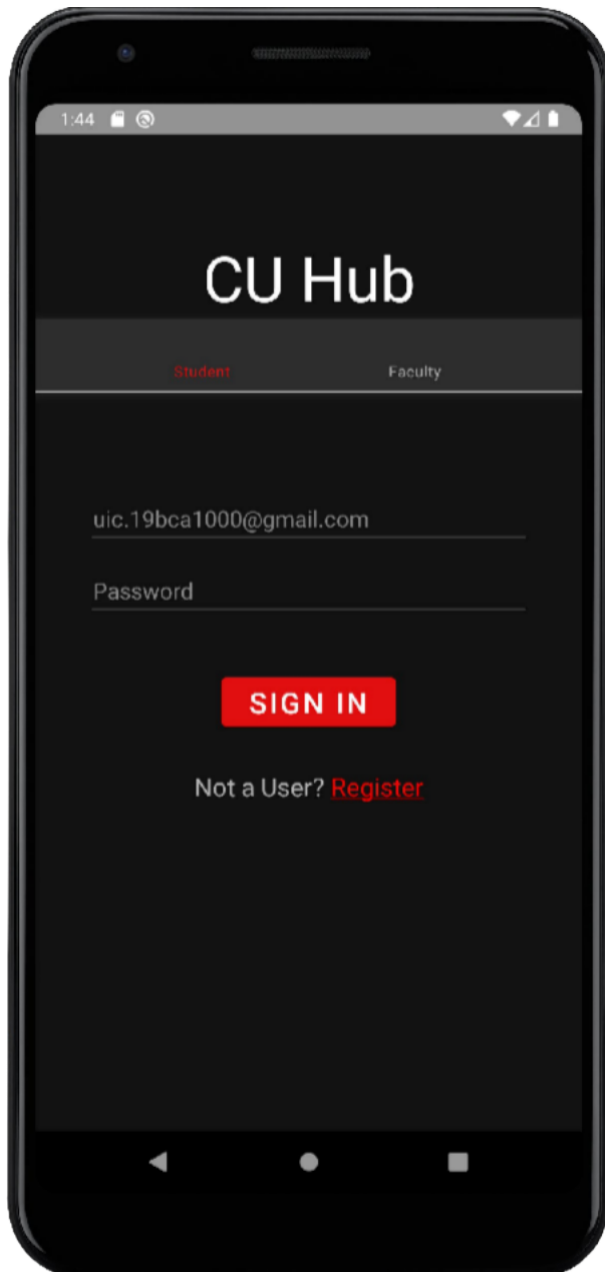
vi Best Design selection.





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Ultimately we chose the 3rd design style as we felt it would be a better match for usability and user experience since it displayed more information in same area and had a dynamic light and dark theme so users had that customization option to enhance there usability experience

vii. Implementation plan ((Flowchart /algorithm/ detailed block diagram).

- We are using **Firestore** as our backend Database and it is a **NoSQL** type database

- Student Model

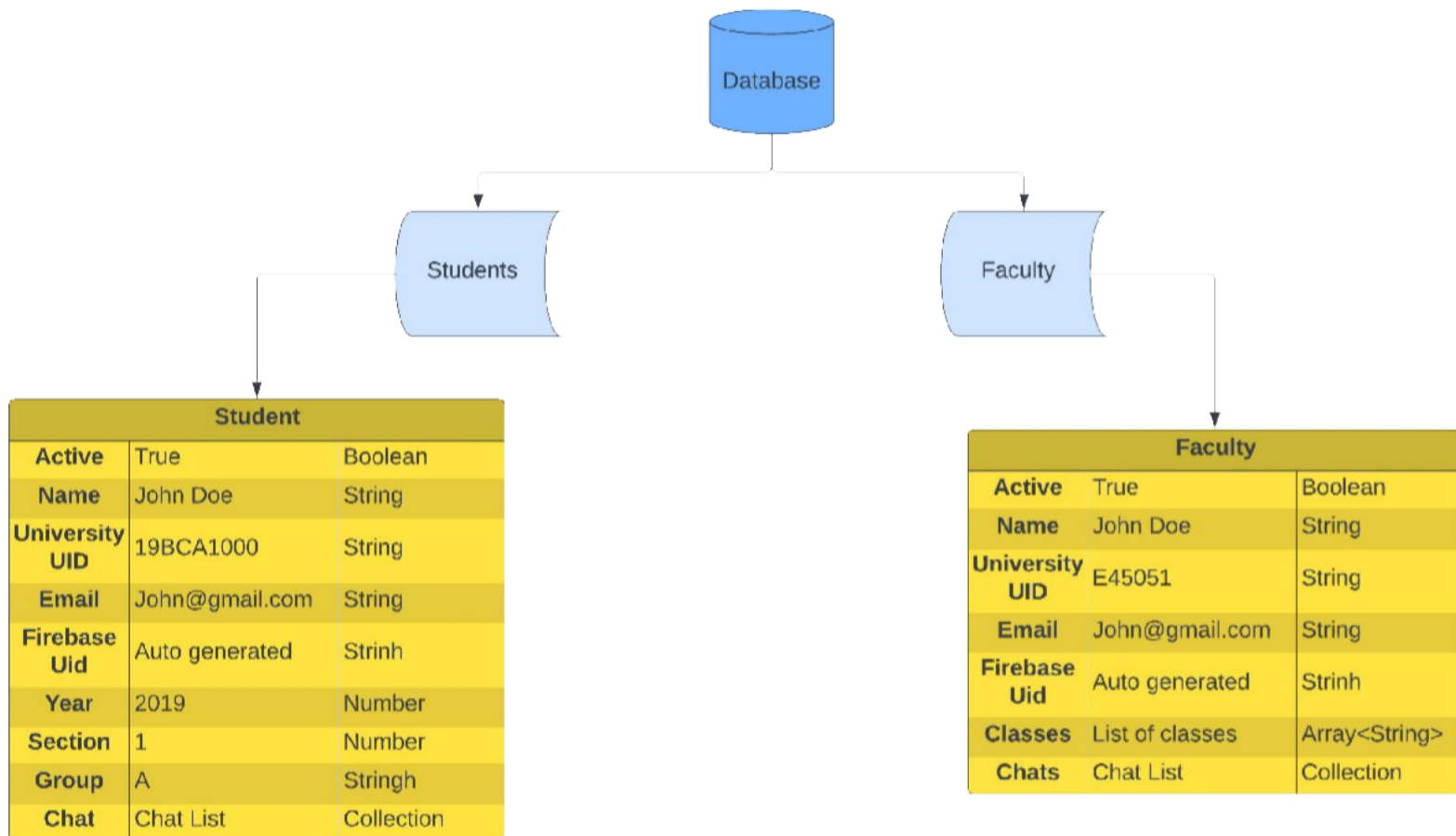
○

Student		
Active	True	Boolean
Name	John Doe	String
University UID	19BCA1000	String
Email	John@gmail.com	String
Firestore Uid	Auto generated	String
Year	2019	Number
Section	1	Number
Group	A	String
Chat	Chat List	Collection

- Faculty Data Model

Faculty		
Active	True	Boolean
Name	John Doe	String
University UID	E45051	String
Email	John@gmail.com	String
Firestore Uid	Auto generated	String
Classes	List of classes	Array<String>
Chats	Chat List	Type

Overall Database Model





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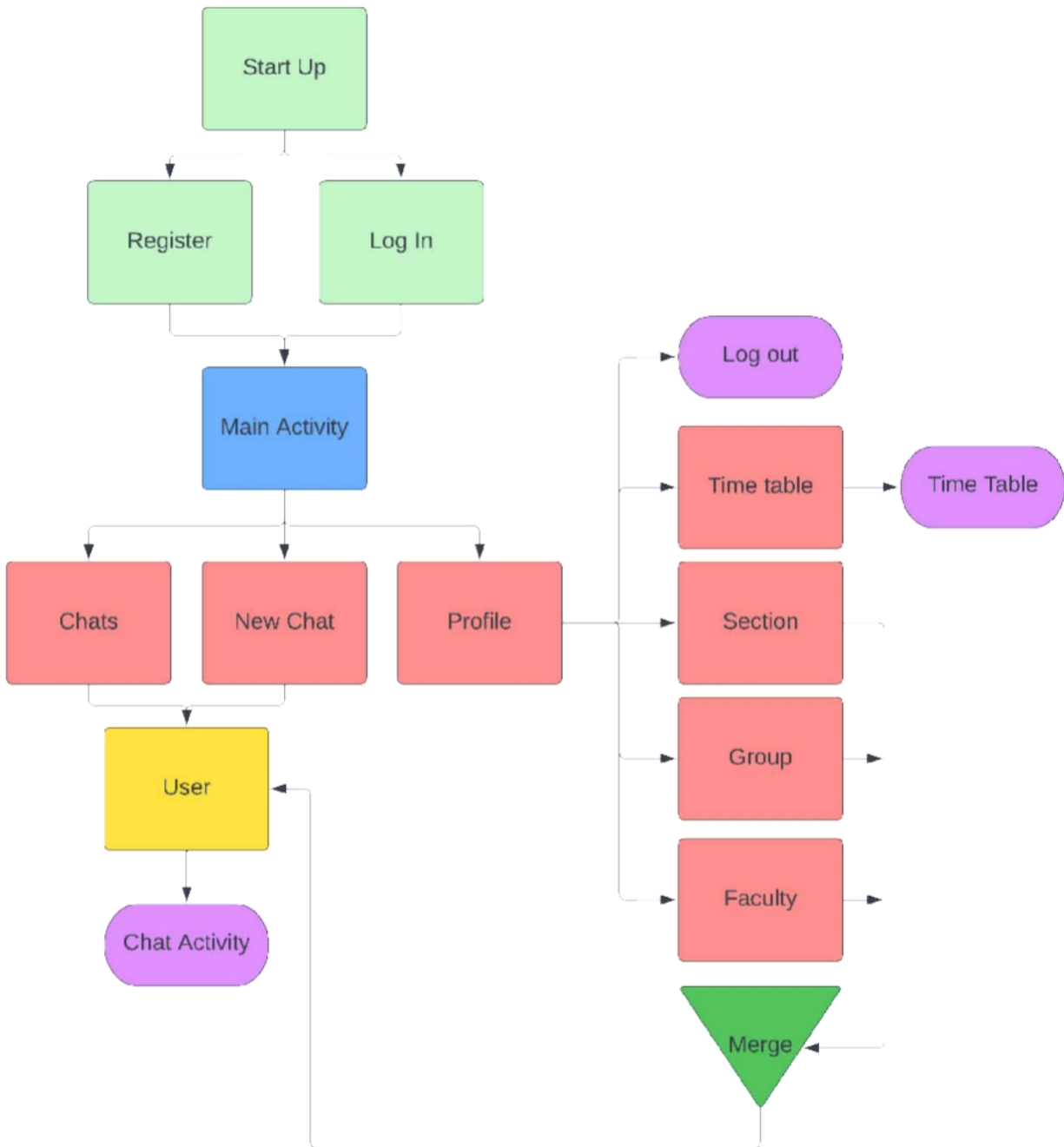
Chapter 4: Results analysis and validation

i. Implementation of design using Modern Engineering tools in analysis

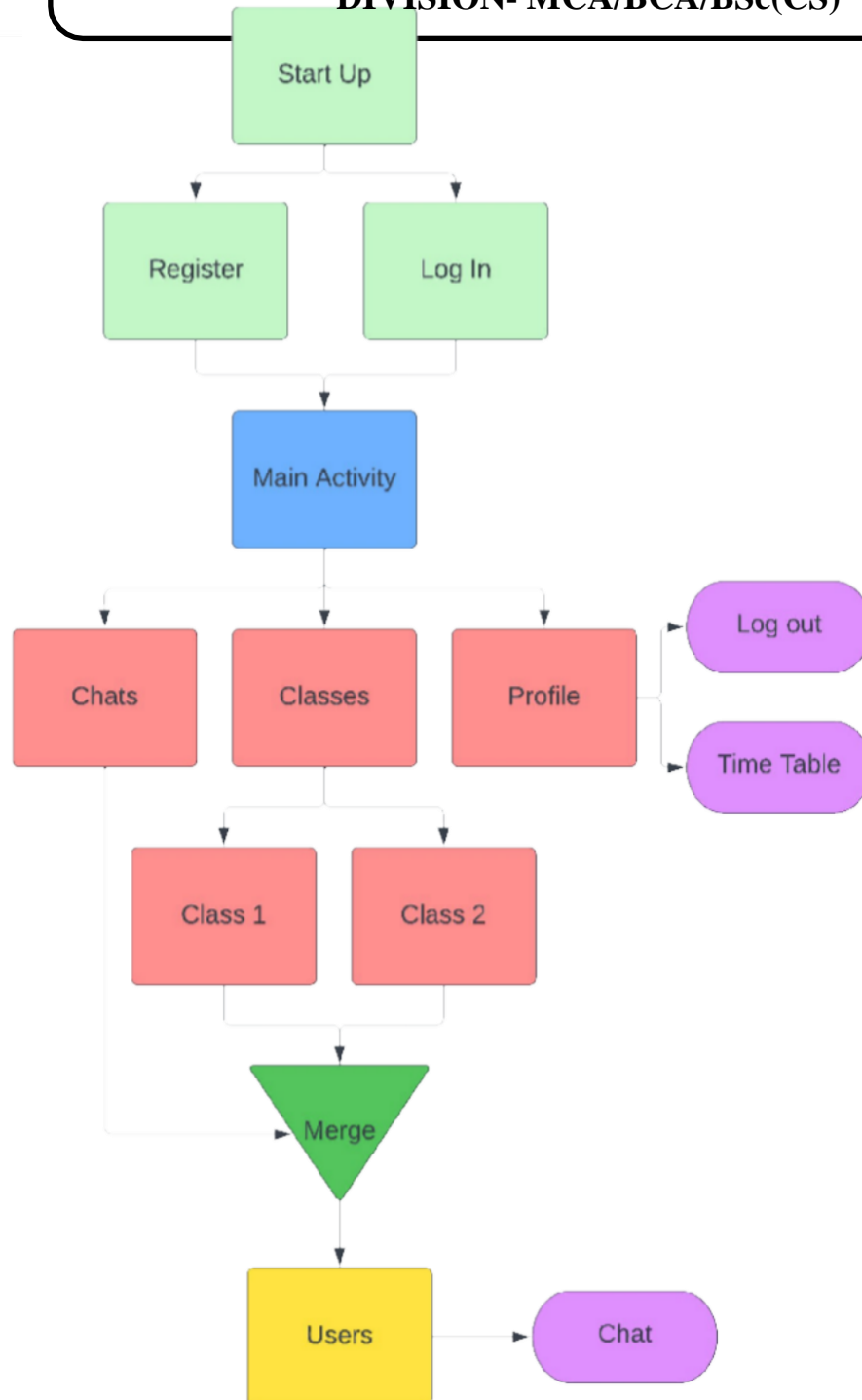
We used Modern tools like **Trello** to keep tabs on our tasks and goals and easily visualize what we need to do. We also used **Lucid Chart** web app to create ER diagrams and charts to visualize process.

ii. design drawings/schematics/ solid models

Student Process Flow



Faculty Process Flow





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- iii. **Report preparation :** – We used **MS. word** and **Lucid Chart** to prepare this report and create figures
- iv. **Project management, and communication :** – We used **Trello** to manage our project in a sophisticated manor and used whatsapp for communicate with team.
- v. **Testing/characterization/interpretation/data validation :** – We manually tested for possible bugs and errors to ensure the app is as bug free as possible



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Chapter 5: Conclusion and future work

i. References

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4. <https://nevonprojects.com/android-college-connect-chat-app/>
5. <https://code.tutsplus.com/tutorials/how-to-create-an-android-chat-app-using-firebase--cms-27397>
6. [Lucid chart](#)