

Project for 7th semester of Bachelor of Information Technology

Chat Rooms & Video Calling App



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Date: 1st May 2024

KIST College of Information Technology

Kamalpokhari, Kathmandu



CERTIFICATE

This is to certify that the project work entitled “**Chat Rooms & Video Calling App**” is carried out by **Abit Shrestha(371365), Sohan Shrestha(371399) and Kusal Karki (371379)** bona-fide students of **Kathmandu Institute of Science and Technology** in partial fulfillment of the requirement for the degree of **Bachelor in Information Technology (BIT)** of the **PURBANCHAL UNIVERSITY, BIRATNAGAR**. It is certified that the matter embodied in this project is authentic and genuine work done by the group and has not been submitted in other college/institution/ University for the fulfillment of the requirement of any course of study. The project report has been approved, as it satisfied the academic requirements in respect of the project work prescribed for the said degree.

.....
Mr. Roshan Shrestha
Project Guide

.....
Mr. Deepak Khadka
Head of Department

.....
Name:
External Examiner

Date: 2081/01/19

STUDENT'S DECLARATION

We hereby declare that the project report entitled “CHAT ROOM & VIDEO CALLING APP” is a result of our own work. If we are found guilty of copying any other report or published information and showing as our original work, we understand that we shall be liable and punishable by Purbanchal University.

We further certify that this project is submitted in partial fulfilment for the award of Bachelor in Information Technology (BIT) of the Purbanchal University is our original work and has not been submitted for award of any other degree or other similar title or prize.

S.N	Name	Registration No.	Symbol No.
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TO WHOM IT MAY CONCERN

This is to certify that Mr. Abit Shrestha, Mr. Sohan Shrestha and Mr. Kusal Karki of Bachelor of Information Technology (BIT) have studied as per the curriculum of BIT 7th Semester and completed the project entitled “**CHAT ROOM & VIDEO CALLING APPLICATION**”. This project is the original work of Mr. Abit Shrestha, Mr. Sohan Shrestha and Mr. Kusal Karki has was carried out under the supervision of Mr. Roshan Shrestha as per the guidelines provided by Purbanchal University and certified as per the student’s declaration that project “**CHAT ROOM & VIDEO CALLING APPLICATION**” has not been presented anywhere as part of any other academic work.

The detail of the student is as follows:

Name of students: Abit Shrestha
 Sohan Shrestha
 Kusal Karki

Semester: 7th semester

Subject Code: BIT 478CO

Project Title: **CHAT ROOM & VIDEO CALLING APPLICATION**

.....
Mr. Deepak Khadka
Program Coordinator, BIT
KIST College of Information Technology

ACKNOWLEDGEMENT

This project was a part of the curriculum of **PURBANCHAL UNIVERSITY**. We are glad to carry out this project “**CHAT ROOM & VIDEO CALLING APPLICATION**”. But it would not have been possible to complete this project without the proper guidance and support of some excellent people.

Firstly, we would like to express our deep and sincere gratitude and regards to our IT department coordinator Mr. Deepak Khadka and project coordinator Mr. Roshan Shrestha for their continuous guidance and encouragement that has helped us to complete the project on time.

We would also like to thank the entire Information Technology (IT) department of KIST college for their remarkable support and guidance throughout the completion of this project. This has helped us to complete the project as a part of curriculum of **PURBANCHAL UNIVERSITY**.

Finally, we would like to take this opportunity to express our gratitude to Purbanchal University for giving us an opportunity to be a part of such project. It is surely helping us to develop the idea and knowledge in the field of information technology for future.

Sincerely,
Abit Shrestha
Sohan Shrestha
Kusal Karki

ABSTRACT

In this project, we aim to develop a robust and user-friendly chat application using Flutter, a popular cross-platform development framework. The application will leverage Flutter's rich set of widgets and intuitive UI design to create a seamless chatting experience for users.

Key features of our chat application will include real-time messaging capabilities, multimedia support (such as sending images and videos), user authentication and authorization, notifications for new messages, and a clean, responsive interface.

We will implement backend functionalities using Firebase, taking advantage of Firebase's real-time database and authentication services. This will ensure secure data transmission and storage, as well as efficient handling of user sessions.

Our focus will be on creating a scalable and sustainable architecture that can accommodate future updates and enhancements. This includes optimizing performance for a large user base, implementing data caching mechanisms for offline access, and adhering to best practices in software development for maintainability and extensibility.

Through this project, we aim to showcase the power of Flutter in building modern and feature-rich chat applications while emphasizing the importance of scalability and sustainability in software development.

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INTRODUCTION

Our project is related to a way of chatting with people. Chatting and communicating with people through internet is becoming common to people and is connecting people all over the world.

This chatting application includes chatting through internet using IP address. It mainly focuses on chatting and connects people all around the world. Mostly, chatting applications like WhatsApp requires mobile no. of the person and then we can chat and connect with the person. But here, the person only has to login with the system, and then he can connect with the people which he wants with.

For using the app, firstly we have to register our name in the application. After registration, the person will be given a particular IP address, which is only used by that person, so that people with same name can be differentiated easily. The IP address can only be seen by the person which is registered under that name. Once, the registration of the person is done, he can join the chat room. The chatting between 2 people can be easily converted into group, as the people chatting easily know if there is another person, who wants to join the chat between them.

If we have to chat with a specific person, then we just have to know the name of the person. It's different from the present chatting applications, as it includes the personal information of the person, which gets accessed by the person which is following him or is friends with the person. This can save the person from sharing his personal stuff to strangers, without his consent.

OBJECTIVES

- **Easy login:** Just enter your name and get a unique IP address for secure access.
- **Open source:** Anyone interested in a topic can join and leave easily as the chat room is open to all.
- **Global connectivity:** Connect with people worldwide as the app operates over the internet.
- **Unique features:** Unlike typical chat apps, Discuss stands out with quick login and exclusive features.
- **Seamless transition:** Switch effortlessly from one-on-one chats to group conversations.
- **Real-time notifications:** Get notified when new people join discussions for ongoing engagement.

FEATURES

- **Chat and Video Call:** Engage in text-based chatting and video calling within the same app.
- **User-friendly Interface:** Intuitive design for easy navigation between chat and video call functions.
- **Contacts Integration:** Easily find and connect with friends from your contacts list.
- **Group Chat:** Create or join group chats for multi-person conversations.
- **High-Quality Video:** Enjoy clear and smooth video calls with high-definition resolution.
- **Text Chat:** Exchange messages in real-time with text-based chat functionality.
- **Notification Alerts:** Receive alerts for incoming messages and video call invitations.
- **Privacy Controls:** Set privacy settings for both chats and video calls to control who can contact you.
- **Cross-Platform Compatibility:** Access the app on various devices and operating systems for seamless communication.

SYSTEM REQUIREMENTS

System requirements are the configuration that a system must have in order for a hardware or software application to run smoothly and efficiently. Failure to meet these requirements can result in installation problems or performance problems. The former may prevent a device or application from getting installed, whereas the latter may cause a product to malfunction or perform below expectation or even to hang or crash.

1. HARDWARE REQUIREMENTS

The most common set of requirements defined by an operating system or software application is physical computer resources, also known as hardware. Most hardware only has operating system requirements or compatibility.

The minimum hardware requirements of this project are:

- Processor : Intel i5 or higher
- Hard Drive : 4 GB free space
- Memory (RAM) : 4 GB

2. SOFTWARE REQUIREMENTS

Software requirements deal with defining software resource requirements and prerequisites that have to be installed on a computer to provide optimal functioning. These requirements are generally not included in the software installation package and need to be installed separately before the software is installed.

The **minimum software requirements** of this project are:

- Operating System : Windows 10 or higher
- Application : Android studio/Visual Studio Code
- Language Used : Flutter
- Database : Fire Base
- Android Version : Android 8

SYSTEM DESIGN

Systems design is the process of defining elements of a system like modules, architecture, components and their interfaces and data for a system based on the specified requirements. It is the process of identifying, creating, and designing systems that meet an organization's specific objectives and expectations. One can take it as the implementation of the system's theory to product development.

DATA FLOW DIAGRAM (DFD)

DFD is a simple graphical formalism that can be used to represent a system in terms of input data to the system, various processing carried out on this data, and the output data is generated by this system. It also shows the relationship between the processes, the data travelling in and out of the process and also the type of data present in the database.

A DFD may be used to represent a system at any level of abstraction. DFD may be partitioned into levels that represent increasing information flow and functional detail.

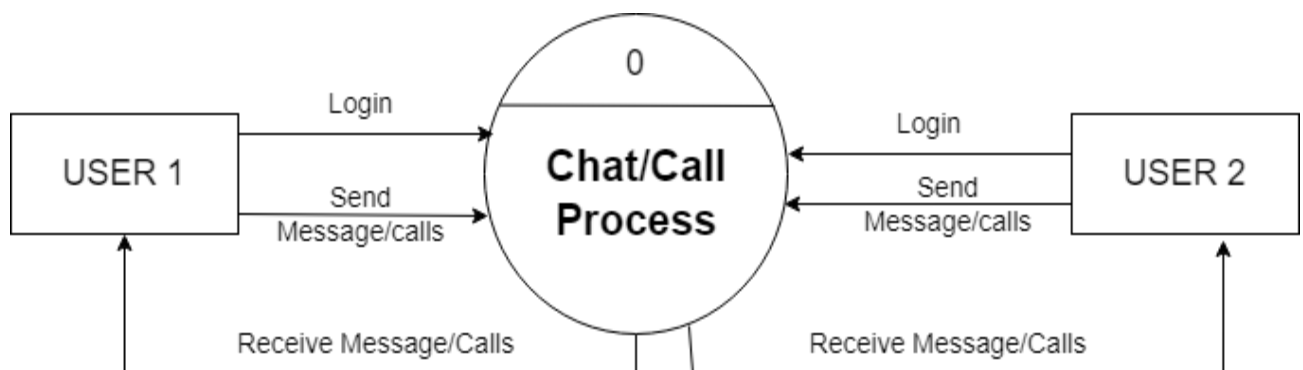


Figure 0-1Context Diagram/ Level 0 DFD

SYSTEM FLOWCHART

The system flow chart is a diagrammatic representation to explain how a system work, the diagrammatic representation is easier to understand than a lengthy text. The system flow chart is one of the major tools of the system analyst to show an overview of the processing in a complete system.

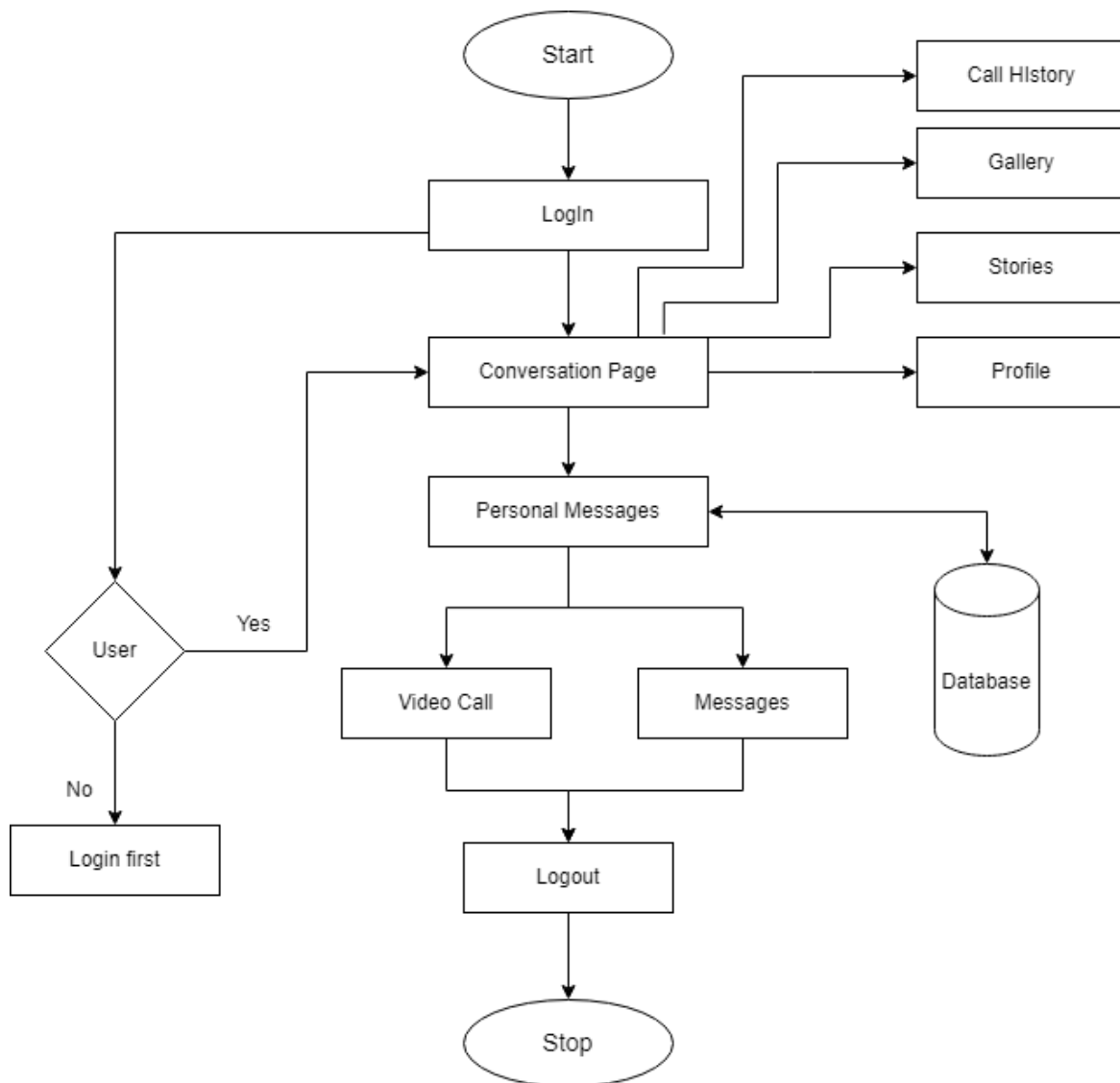


Figure 0-2 System flowchart of Chat Application

USE CASE DIAGRAM

A use case diagram in the Unified Modeling Language (UML) is a type of behavioral diagram defined by and created from a Use-case analysis. Its purpose is to present a graphical overview of the functionality provided by a system in terms of actors, their goals (represented as use cases), and any dependencies between those use cases. The main purpose of a use case diagram is to show what system functions are performed for which actor. Roles of the actors in the system can be depicted.

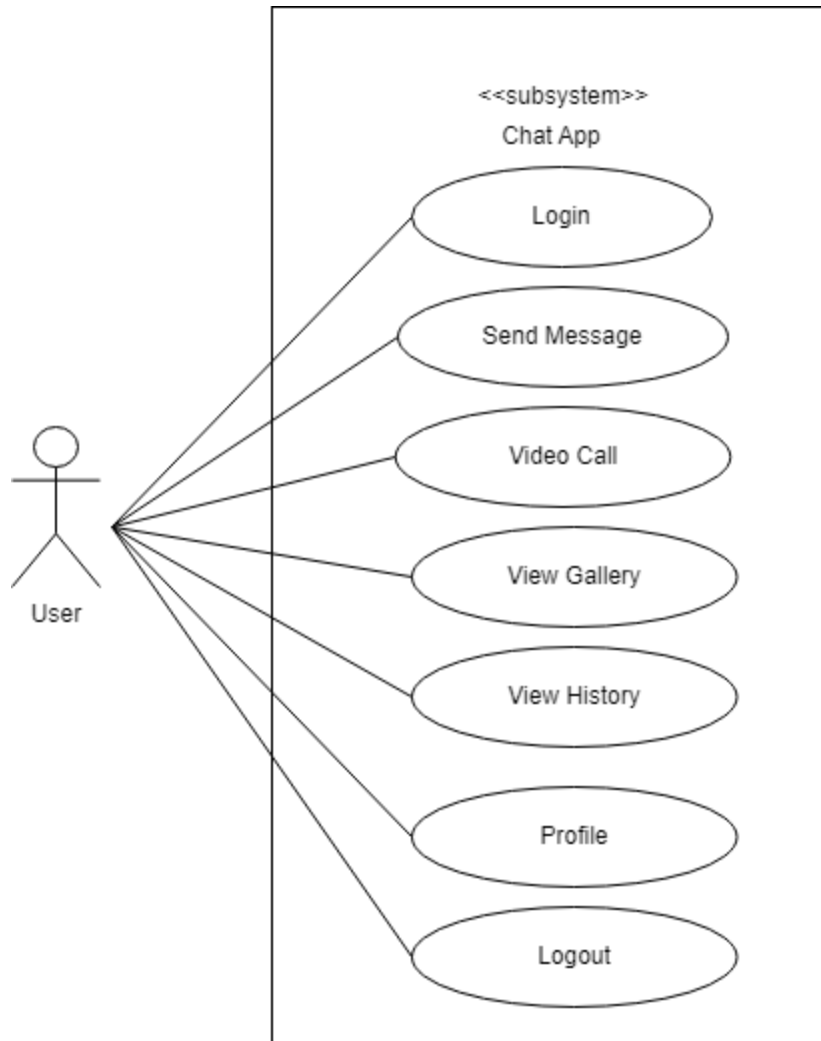


Figure 0-3 Use Case Diagram of Chat App

CONCLUSION

In conclusion, the chat app developed using Flutter offers a modern and efficient platform for communication. Its features, including easy login, open-source accessibility, global connectivity, and unique functionalities, set it apart from traditional chatting applications.

With its user-friendly interface and seamless transition between one-on-one and group chats, the app provides a personalized and engaging experience for users. Additionally, its focus on privacy, real-time notifications, and secure communication ensures that users can interact confidently and securely.

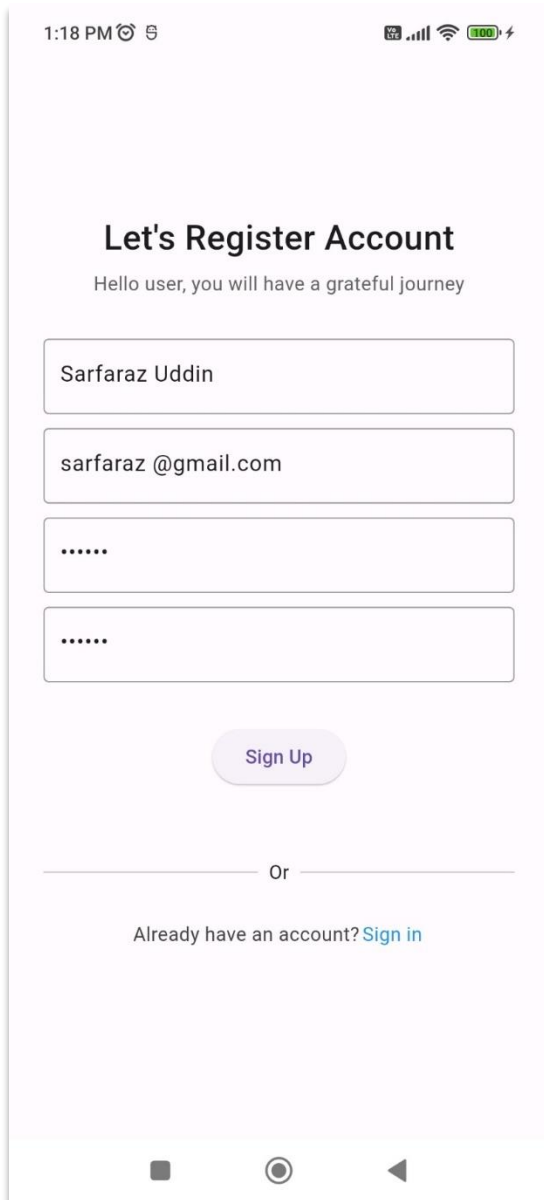
The app's ability to connect people globally, regardless of geographical location, fosters community building and facilitates meaningful conversations on various topics of interest. Overall, the Flutter chat app represents a significant step forward in the realm of online communication, catering to the diverse needs and preferences of modern users.

Future Enhancement

- **Message Editing:** Enable users to edit or delete messages they have sent.
- **Message Reactions:** Introduce emoji reactions to messages for quick responses
- **Customizable Themes:** Let users personalize the app's appearance with customizable themes or colors.
- **Smart Reply:** Incorporate AI-powered suggestions for quick replies based on message content.
- **Screen Sharing:** Enable users to share their screens during video calls for presentations or demonstrations.
- **Status Updates:** Allow users to set status updates to let their contacts know if they're available, busy, or away.

SNAPSHOTS

Login and Sign up Page:



1:18 PM

Let's Register Account

Hello user, you will have a grateful journey

Sarfaraz Uddin

sarfaraz @gmail.com

.....

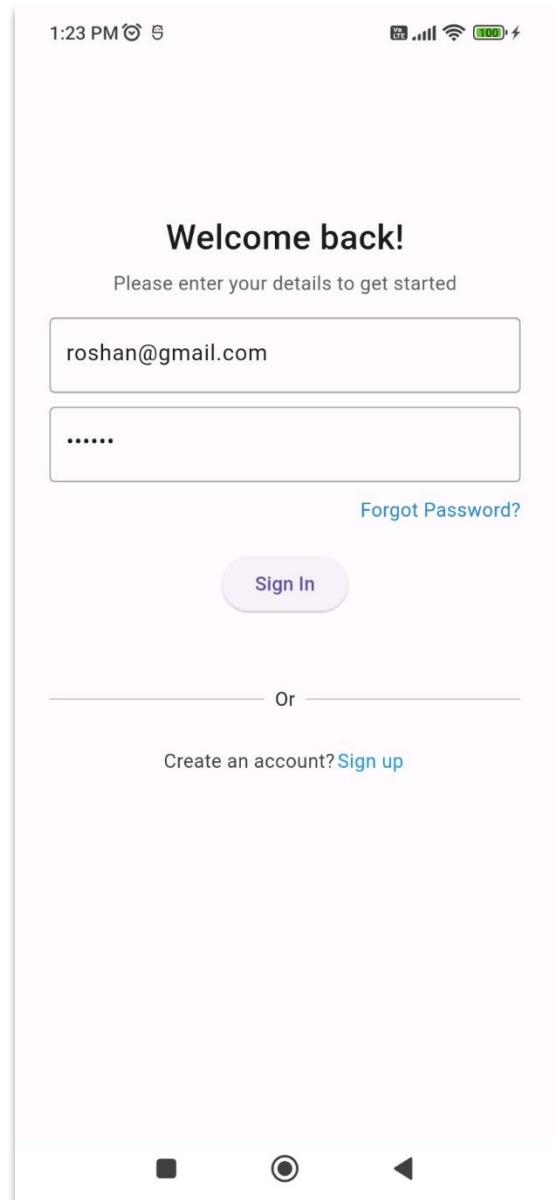
.....

Sign Up

Or

Already have an account? [Sign in](#)

This is a mobile app registration screen. It features a light purple background. At the top, the time is 1:18 PM. The title 'Let's Register Account' is centered, followed by a subtitle 'Hello user, you will have a grateful journey'. There are four input fields: a name field containing 'Sarfaraz Uddin', an email field containing 'sarfaraz @gmail.com', and two password fields, each with six dots. A purple 'Sign Up' button is centered below the password fields. Below this is a horizontal line with the word 'Or' in the center. At the bottom, it says 'Already have an account?' followed by a blue link 'Sign in'. The bottom of the screen shows standard Android navigation icons.



1:23 PM

Welcome back!

Please enter your details to get started

roshan@gmail.com

.....

[Forgot Password?](#)

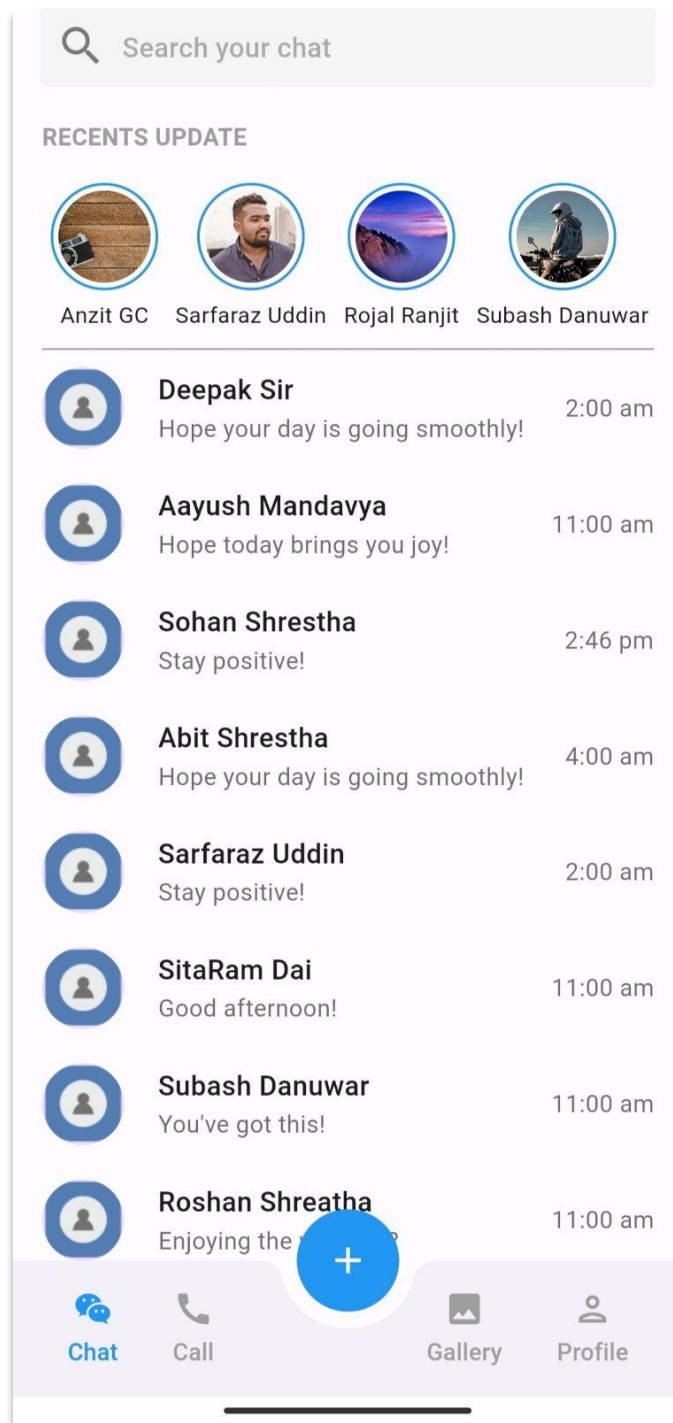
Sign In

Or

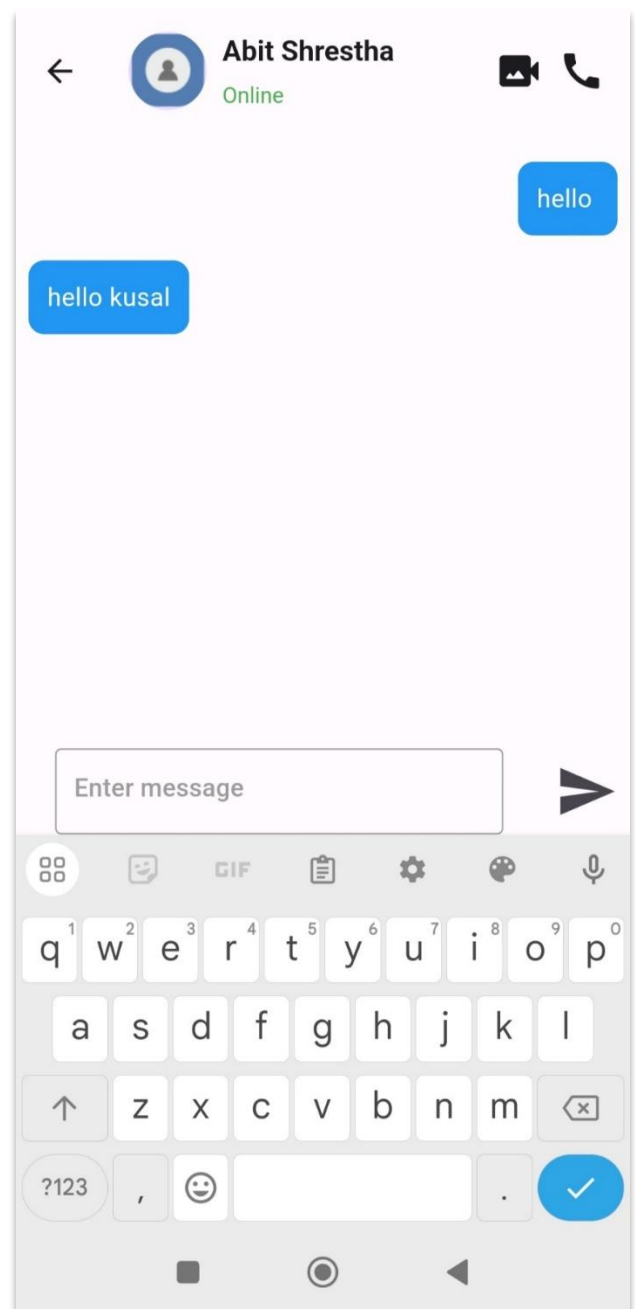
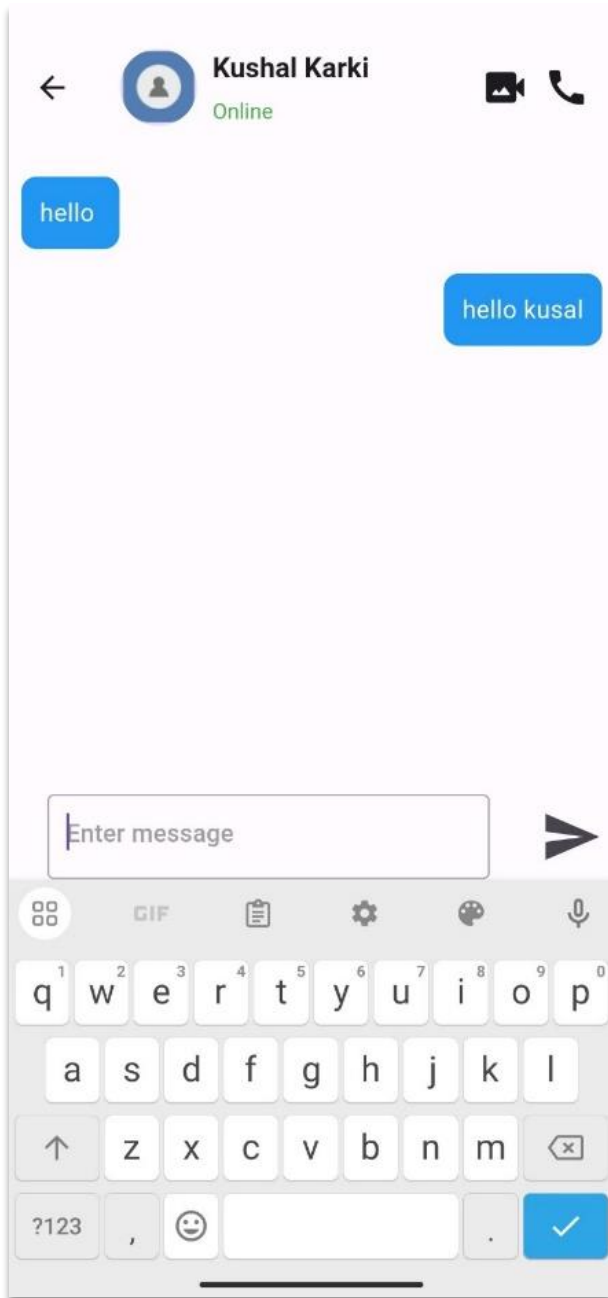
Create an account? [Sign up](#)

This is a mobile app login screen. It features a light purple background. At the top, the time is 1:23 PM. The title 'Welcome back!' is centered, followed by a subtitle 'Please enter your details to get started'. There are two input fields: an email field containing 'roshan@gmail.com' and a password field with six dots. A blue link 'Forgot Password?' is to the right of the password field. A purple 'Sign In' button is centered below the password field. Below this is a horizontal line with the word 'Or' in the center. At the bottom, it says 'Create an account?' followed by a blue link 'Sign up'. The bottom of the screen shows standard Android navigation icons.

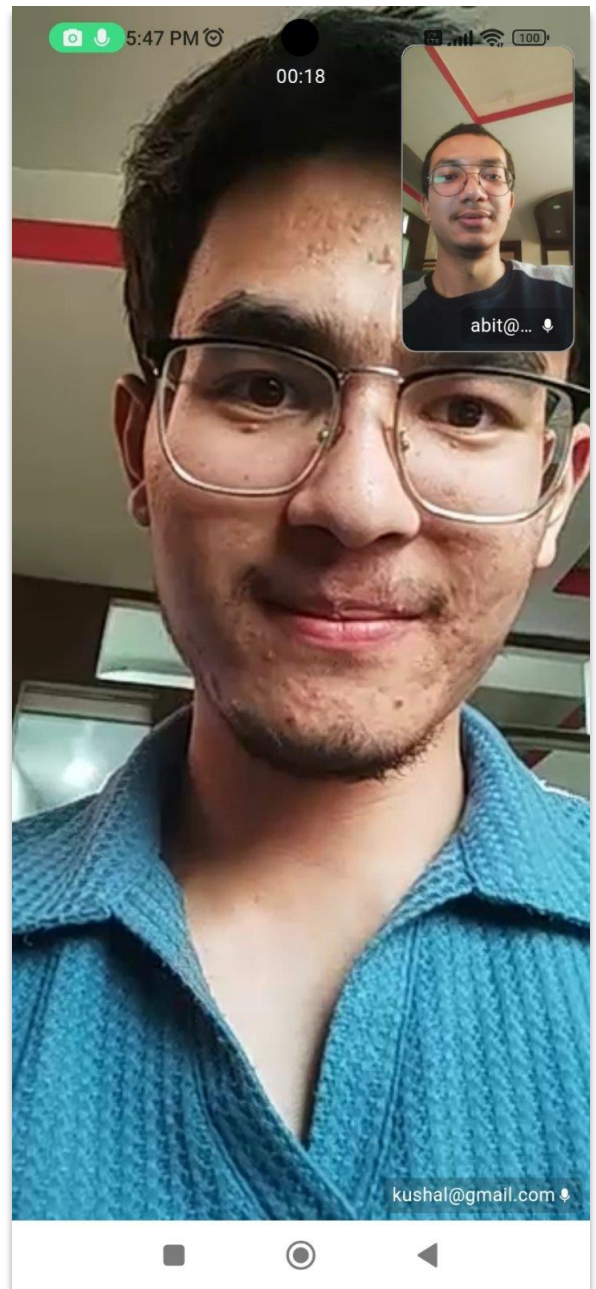
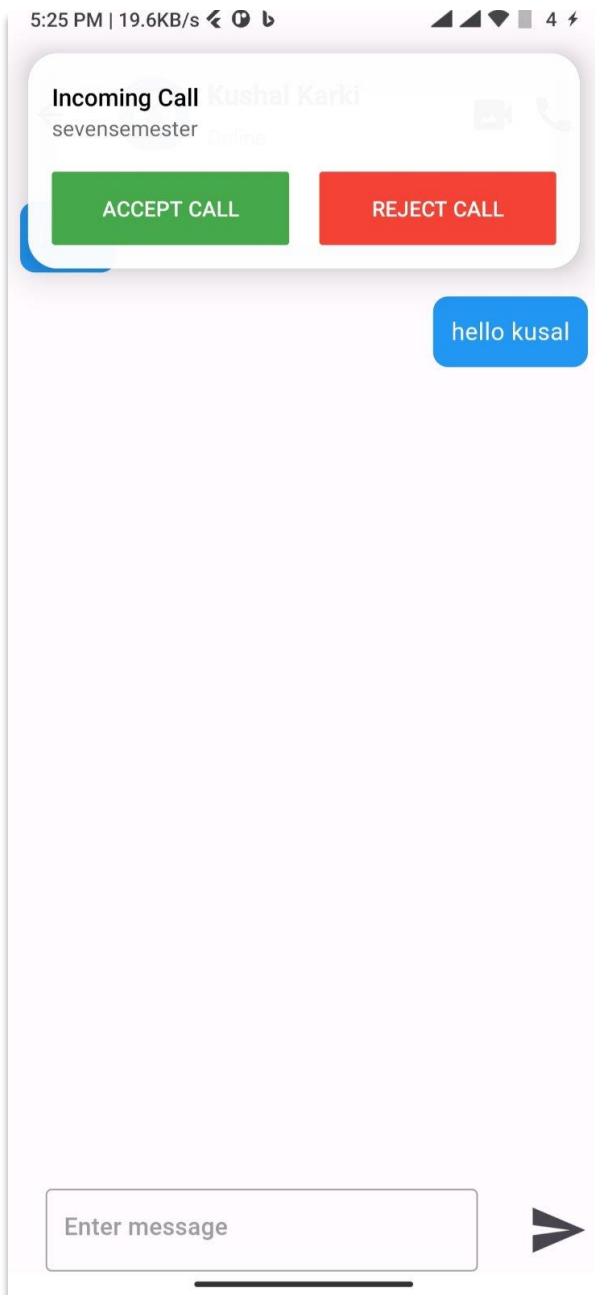
Chat Page:



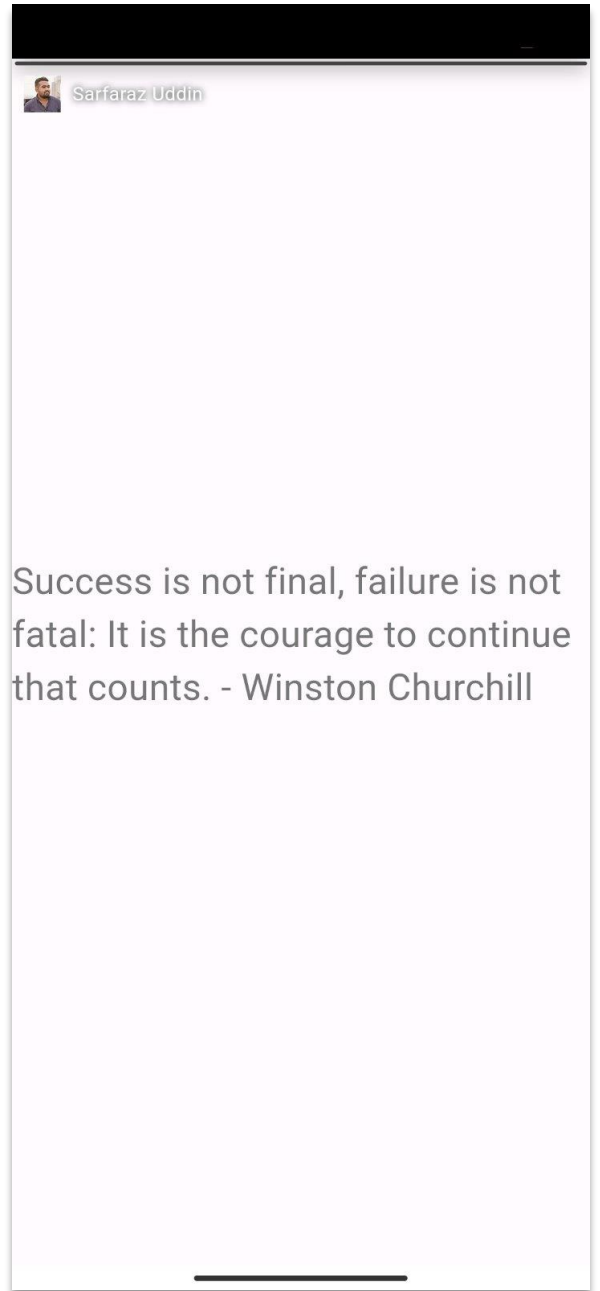
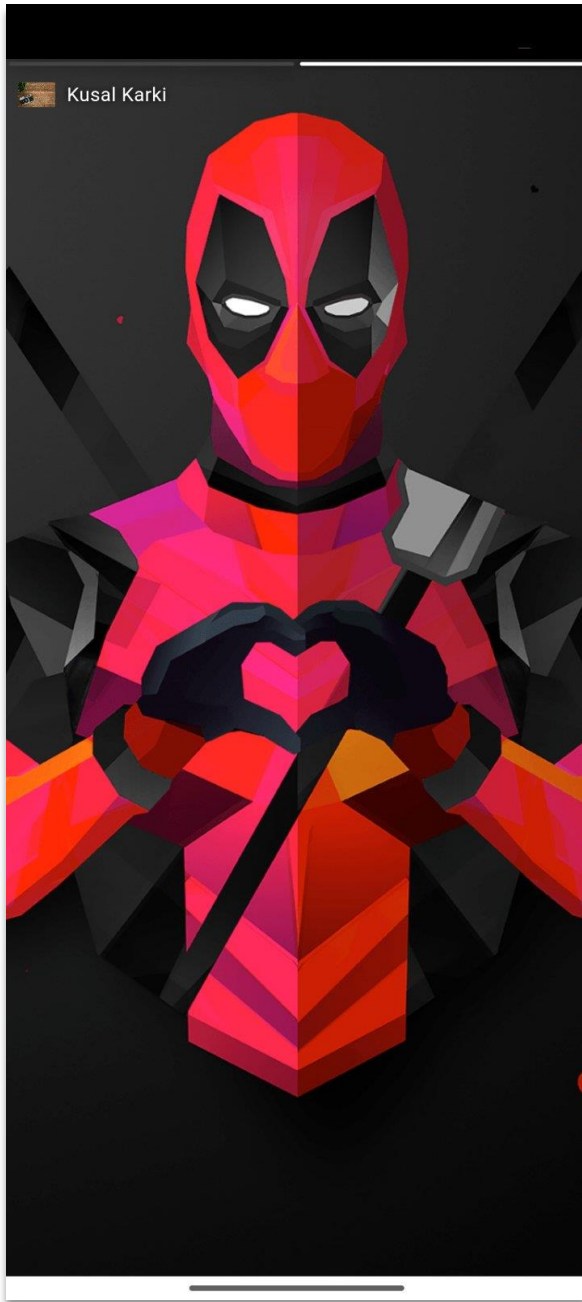
Personal Message Page:



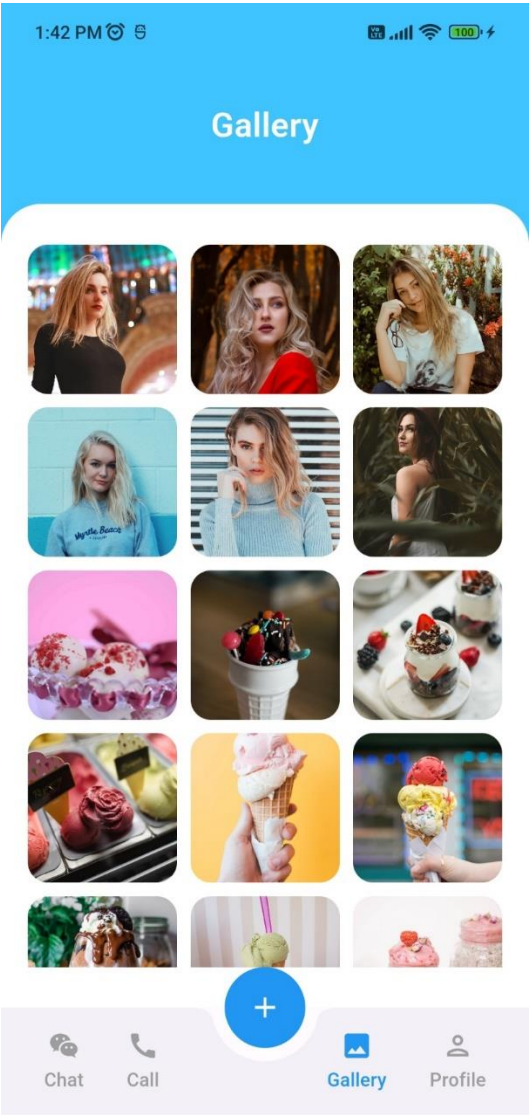
Video Call:



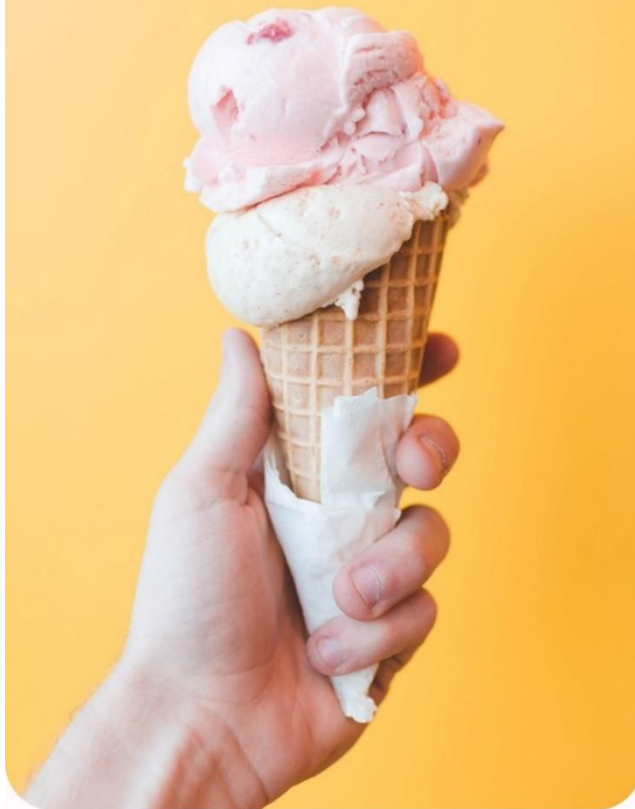
Story Page:



Gallery Page:



1:43 PM



New York

By Jamie Bryan

\$20.00

Lorem ipsum dolor sit amet, consectetur adipisicing elit. Nihil error aspernatur, sequi inventore eligendi vitae dolorem animi suscipit. Nobis, cumque.

Back

Buy



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