



# **REPORT**

## **Online Chat Application**

**Module: Mobile Application Development**

**Course: Management Information Systems (Special)**

**Batch : 19.1 UGC**

## **Content**

- **Team member details**
- **Introduction**
- **Functional Requirements**
- **Non-functional requirements**
- **Technologies used**
- **Project source code (GitHub link)**
- **Test cases and UIs**

## Team Members

	Student name	Student ID	Contribution to prototype
01.	H.M.R.K. Herath	21019019	Project proposal, Prototype, Report Chatting Firebase
02.	C.M.D. Liyanage	23006035	Project proposal, Prototype, Report Update avatar Update about me
03.	I.P.R. Kumarasinghe	21017868	Project proposal, Prototype, Report New conversation Change theme Image sharing
04.	P.W. Hettiarachchi	21010139	Project proposal, Prototype, Report Stickers sharing Image zooming
05.	P.G.I.D. Gallage	22018035	Project proposal, Prototype, Report Avatar zooming Sign in
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## **Introduction**

In today's world online chatting has become a significant part of the society. Distance relationships are maintained via online platforms in higher percentage. This is because people find the flexibility and reliability in using online platforms due to various reasons like cost effectiveness, efficiency and attractivity is higher in those conference applications. Chat applications via mobile has been popular in society more than desktop-based applications. For business purposes, education, family, and friend relationships who are in different locations are maintained through these kinds of applications. So, a high-quality featured chat application with advanced security is going to be designed by our team as a solution to overcome most of the issues faced by today's society when using current applications.

## **Project Definition**

Mobile teleconferencing or chatting is a prominent type of application in the smart phones. Even though this is not a new idea for the society a featured application with outstanding qualities. This app will have two step verification security plans and password verifications and account verifications from device to device. Also, end-to-end encryptions in private messages and voice will improve the security aspect in this application. To improve the live quality of the application animated sticker sets, gif also going to be added to chats. Video calls are made with high quality camera and optimize the security about user privacy. Chat application will give the ability to have group conversations, live video conferencing, files and location sharing like features also. Live streaming can be added to conferences as the client's preferences. Eye catching themes, fonts, and other technologies will be applied in order to give the best user experience. This project is going to be handled using agile development methodology so that team members can discuss the changes and ideas they would like to do in the application and give the chance to monitor and track the progress of the project. Likewise, from the beginning to the end were introducing the deliverables, then in maintenance team is going to take care of the project until it becomes an outstanding mobile chat application.

## Application Features

- Real-time text transmission.
- Flexible and reliable steps.
- Chat bots and help agents.
- Conveniency.
- Chat history backup to cloud.
- Multitasking performance
- Animated and non-animated stickers.
- Live streaming
- Two step verification
- End-to-end encryption
- Account verification confirmation and verification codes to different devices
- Location sharing
- Content sharing and file sharing with high storage
- Unlimited numbers member invitations to groups.
- Operation via any mode (Wi-Fi or mobile data)
- Advanced profile settings(last seen, online, contact sharing, profile sharing, etc.)
- In-app notifications and push notifications
- Privacy checkup and advanced settings
- Message forwarding
- Integrated apps
- Image and video quality resolution control
- Unlimited concurrent chats
- Ability to customize chat backgrounds and other features

## Functional Requirements

- Sign up

A new user should be able to download the application to their mobile phone and install it properly. If any constraint or privacy statement is not fulfilled within the installation, then the application should be closed by viewing an error message. When user attempt to sign up to the chat application obviously, application show the google authentication sign up page for the sign up and user should be able to sign in successfully. At the same instance, the current user should be able to see the new user where they can start to chat with him.

- Login/ Log out

For the regular user there will be no continuous login function but when the user log out from the application and reattempt to join the chat application again, then the application should display the google authentication log in for that. After the login, that user is able to see all the previous chats he used in the previous instances and continue as he wished to do.

- Messaging

The user should be able to send instance messages in the chat for any user and should receive a notification that the receiver got the message. Unlimited access to send any number of messages as the want is also a functional requirement. Smooth message transmission should be there for the chat to avoid any consequences.

- File sharing

Images, files, gifs, videos, and voice messages should be able to send and users should have an interesting chat between them. Even the chat application is unable to send voice, at this instance, there will be a feature release for those features in future with more privacy improvements.

- Theme preferences

For the users who prefer light theme can continue to the light theme as their default theme in the chat. For the user who prefer dark mode can change their theme to dark mode since the application has already provided this feature to improve the chat performance.

- User details editing

User can edit their bio and username, so that they can customize their profiles. Also, they can change the avatar when they need so on. The application will automatically crop the image size which is suitable for the avatar. User just need to select the image for the avatar, no need to resize them.

## **Non-Functional Requirements**

- Speed and Performance

Messages should delivered to the receiver with low latency. For that end-to-end encryption should handle with high performance rate. Otherwise, time delays can be caused.

- Privacy and Security

Flutter firebase ensures the privacy and security aspects of user. It will gives the opportunity to block any unauthorized user or in misbehavior.

- Robustness

If the device crashes of user lose any chat history details, he/she can use the backup which connects to the google account to restore the chat.

- Reliability
- Usability

- Scalability

Chat features are updated continuously to improve the user experience with chat application and to provide addicting performance to the user. Features are going to be release as soon as the development team confirms its performance, security, and functionality.

## **Technologies Used**

- The chat application is developed by Flutter
- For sign up, login, log out : Firebase authorization, and support Google account authentication
- Cloud Firestore is used for the database
- Plugins installed (firebase auth, google sign in, firebase storage, cloud Firestore, fluttertoast, image picker, shared preferences, intl, cached network image)
- To get the push notifications implemented Cloud functions, Firebase\_messaging and local\_notifications.

## **Project source code (GitHub link)**

<https://github.com/rohankumara/MAD-Chat-App>



## Test cases and UIs

(Test cases are attached as an .xlsx in a test case template.)









