

## Team 4 – Product Backlog(ChatChat)

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### Problem Statement

People communicate with one another every day, but people meeting for the first time are often oblivious about people's common interests, which would likely result in their conversations being cut short. Our android app aims to remedy this situation by allowing people to connect in groups based on the topics they are interested in, for example, gamers are able to search for gaming groups of which they have a mutual interest in. Furthermore, our app offers ways for people to connect within subgroups of their topic, which allows clients to further narrow down to specific knowledge of which they share.

### Background Information

We aim to develop an app that allows users to create their accounts and connect with each other based on people's common interests or conversations. People can explore others who share the same interests by inputting their topics in the search bar. Furthermore, if you are vague about certain topics but still would like to chat with others about related sub-topics, no worries, we've got you covered. Users are able to input the big topic in the search bar and we will narrow it down further into sub-categories. If you are unable to find any sub-categories that really interest you, you could also initiate a conversation with a fresh new topic.

### Environment

We plan to develop our app on the Android platform, therefore, given the functionality and versatility of Android studio, we will use it for creating the app. In the backend, we would like to implement user login, logout, registration, and authentication; all this can be stored and performed using Google's Firebase Framework. In the front end, our intuitive UI is designed within XML. We are going to have our source control via Github.

### Functional Requirements

Backlog ID	Functional Requirements	Hours	Status
1	As a user, I would like to sign up with my email.	10	Sprint 1
2	As a user, I would like to sign in with my Google account.	7	Sprint 1

3	As a user, I would like to sign in with my registered account.	10	Sprint 1
4	As a user, I would like to log out and exit the app properly.	7	Sprint 1
5	As a user, I would like to change my user ID.	5	Sprint 1
6	As a user, I would like to create a chat room.	7	Sprint 1
7	As a user, I would like to join a chat room.	5	Sprint 1
8	As a user, I would like to browse through different topics and chat rooms under those topics.	7	Sprint 1
9	As a user, I would like to get a link to reset my password in case I forgot my password.	7	Sprint 1
10	As a user, I would like to search for chat rooms.	7	Sprint 1
11	As a user, I would like to give feedback to the developers through email in the app.	4	Sprint 2
12	As a user, I would like to send messages in the chat room.	7	Sprint 2
13	As a user, I would like to browse through the chat history.	5	Sprint 2
14	As a user, I would like to receive other users' messages in real-time.	7	Sprint 2
15	As a user, I would like to upload a profile picture.	10	Sprint 1
16	As a user, I would like to change my profile picture.	8	Sprint 2
17	As a user, I would like to see who sends the message(display icon and chat ID) in a chat room.	6	Sprint 2
18	As a user, I would like to see the number of users that added the chat room into their favorite lists on the chat room page.	8	Sprint 2

19	As a user, I would like to see my current chat room's information.	7	Sprint 2
20	As a user, I would like to add a chat room to my favorite list ().	8	Sprint 2
21	As a user, I would like to see a list of my favorite chat rooms.	7	Sprint 2
22	As a user, I would like to remove a chat room from my favorite list.	6	Sprint 2
23	As a user, I would like to reset my password.	7	Sprint 1
24	As a user, I would like to access others profile page through chat room	6	Sprint 2
25	As a user, I would like to view others' profile pictures in their profile pages	4	Sprint 2
26	As a user, I would like to view other users' favorite lists on their profile pages.	4	Sprint 2

## Non-Functional Requirements

### Performance

Our aim for this project is to produce an app that is functioning and scalable in terms of storage space. Specifically, our app would display hardly distinguishable differences regardless of the number of concurrent users and should have enough space to hold all their data. We will compress uploaded user profile pictures before uploading them from the user's device to our server. We will put a limit on upload size and quantity of uploads to prevent a user from hogging bandwidth and abusing our service.

### Usability

The UI should be intuitive and easy to use. The user should be able to access all functions using a reasonable number of taps. We will be supporting this app in English to start, but we may add more language options if we have time. We will make this app for the earliest version of Android OS that fulfills our needs for this project to provide access for more users since Android OS versions are backward compatible.

## Security

The app is to be encrypted by Kerberos and all user information is protected. Users need to set up usernames and passwords to log in. Maintaining user privacy is our number one priority.

## Hosting

We intend to make use of the strong inter-functionality between Android Studio and Google Cloud to serve as our backend connection. We will be using Firebase for a real-time database and authentication system working in tandem with our android app.

## Use Cases

### Case 1:

sign up with my email

Action	System Response
1. Click "Sign Up" on the login page	2. Display sign up page
3. Enter Email / Password or login using an existing Google account	4. Send a request to Firebase Authentication
	5. Once success, Display "Enter Username"
6. Enter Username	7. Store username in Firebase
	8. Display home page

### Case 2:

sign in with my Google account

Action	System Response
1. Click "Sign In with Google"	2. Send a request to Firebase Authentication
	5. Once success, Display "Enter Username"

6. Enter Username	7. Store username in Firebase
	8. Display home page

### Case 3:

Sign in with my registered account.

Action	System Response
1. On the login page, tap the “Sign In with Google” button or enter email and password then tap the “Login” button.	2. Send a request to Firebase Authentication
	3. Once successfully logged in, display home page

### Case 4:

As a user, I would like to log out to the app.

Action	System Response
1. Click user name	2. Display user profile
3. Click on the “Log Out” button	4. Send sign out request to Firebase
	5. Log the user out.

### Case 5:

As a user, I would like to change my user ID.

Action	System Response
1. Click on “edit” button on the user profile page	2. The text field prompt for the user to input his/her new username
3. Fill up the field	
4. Click the “save” button	5. The new username is shown on the UI

	6. The new username is saved in firebase
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### Case 6:

As a user, I would like to create a chat room.

Action	System Response
1. Click on "Create a chat" button	2. Move to Create Chat page
3. Fill up the posting	
4. Click "Create" button on the chat creating page.	5.If other required fields are filled, a new chat room is created and the app goes to the created chat room page.
	6.New chat room info saved in the database

### Case 7:

As a user, I would like to join a chat room.

Action	System Response
1. Click the chat room the user wish to join	2. UI changes to chat room
	3. Recent information is rendered on screen

### Case 8:

As a user, I would like to browse through different topics and chat rooms under those topics.

Action	System Response
1. Enter the homepage	2. Display the homepage
3. Scroll and select interested topic card	4. Directs to list of related chatroom

### Case 9:

As a user, I would like to get a link to reset my password in case I forgot my password.

Action	System Response
1. On the login page, tap on "Forget My Password"	2. Display a dialog to request Email address
3. Enter the email linked to the account	2. Send a reset password request to Firebase Authentication
	4. Send an email to the user
5. Click the link in the email	
6. Enter the new password and click "Submit"	7. Update password in Firebase Authentication

### Case 10:

As a user, I would like to search for chat rooms.

Action	System Response
1. On the homepage, click on the search bar	2. Display search bar
3. Enter inquiries into the search bar	4. Display results based on the search algorithm

### Case 11:

As a user, I would like to give feedback to the developers through email in the app.

Action	System Response
1. On the profile page, click feedback	2. Prompt a text field for the user to input feedback

3. Input feedback and click the “send feedback” button	4. Send the feedback in the form of an email to the developers
	5. Exit from feedback screen

### Case 12:

As a user, I would like to send messages in the chat room.

Action	System Response
1. Tap on text input bar.	2. Pops up keyboard.
3. Input text and click send.	4. Send input String to the database and render the message in the chat room

### Case 13:

As a user, I would like to browse through the chat history.

Action	System Response
1. Enter any chatroom	2. Display the latest chats in the room
3. Scroll up to view chat history	4. Show past chat messages

### Case 14:

As a user, I would like to receive other users’ messages in real-time.

Action	System Response
1. Stay in the chat room UI, and other user send a message	2. Render the new message once it update to the firebase



### Case 15:

As a user, I would like to upload a profile picture.

Action	System Response
1. On the profile page, click "upload profile picture"	2. Picture library is shown
3. Select the picture	4. Picture uploaded to firebase
	5. The new profile picture is shown on UI

### Case 16:

As a user, I would like to change my profile picture.

Action	System Response
1. Click on the profile tab	2. Displays the user profile page
3. Click on the profile picture	4. Displays option to change profile picture
5. Click on change profile picture	5. Prompts user to upload a new profile picture
6. Upload profile picture	7. Store new profile picture in Firebase
	8. Display the new profile picture in user profile

### Case 17:

As a user, I would like to see who sends the message(display icon and chat ID) in a chat room.

Action	System Response
1. Enter a chat room	2. Display a chat room page, on top of each message, the sender's name and its profile picture will also be displayed.

### Case 18:

As a user, I would like to see how many users have added a chat room into their favorite list on the chat room page.

Action	System Response
1. Navigate to chat room page under certain topics	2. Displays chat rooms with number of favorites they received

### Case 19:

As a user, I would like to see my current chat room's information.

Action	System Response
1. On the chat room page, click on "information"	2. Send requests to Firebase
	3. Display current chat room's information

### Case 20:

As a user, I would like to add a chat room to my favorite list.

Action	System Response
1. In the chatroom, click on the "hollow heart" icon	2. The "hollow heart" becomes filled
	3. On Firebase, the chatroom ID is added to the favorite field
	4. On the homepage, the chatroom name is added to the favorite list

### Case 21:

As a user, I would like to see a list of my favorite chat rooms.

Action	System Response
1. Enter the homepage button	2. Goes to the homepage.
	3.pulls data from back-end and displays it as a list on the homepage
4.scroll up or down	5. If success, all the favorite lists will be displayed in the list.

## Case 22:

As a user, I would like to remove a chat room from my favorite list.

Action	System Response
1. Long Click the chat room title in the favorite list.	2. Pops up a confirmation screen to ask whether remove the chat room from the favorite list or no.
3. Click "Yes" button	4. Remove the chat room's ID from the user's data in Firebase and also removes the chat room in the favorite list in real time.

## Case 23:

As a user, I would like to reset my password.

Action	System Response
1. Click on the profile tab	2. Display the profile page
3. Click on the option to reset password	4. Send requests to Firebase
	5. If success, Display Enter old, new password, and confirm new password
6. Enter old, new passwords and confirm the new password, then click Okay	7. Replace old password with the new password in Firebase
	8. Displays profile page

### Case 24:

As a user, I would like to access others profile page through chat room

Action	System Response
1. Enter a chat room	2. Goes to a chat room page.
3. Tap on one user's profile picture.	4. App directs to that user's profile page.

### Case 25:

As a user, I would like to view others' profile picture in their profile page

Action	System Response
1. Go to a user's profile page	2. Display the user's profile page
3. Tap on the profile picture	4. An expanded profile picture will be displayed on the screen.

### Case 26:

As a user, I would like to view other's favorite list in profile pages.

Action	System Response
1. Go to a user's profile page	2. Display the user's profile page
3. Scroll down for favorite list	4. Render a list of card view of chatrooms of user's favorite list