

- Input: None
- Output: None
- Parent Dependency: None
- Child Dependency: Google Sign in, Login, Signup, Forgot password

Login with email:

- Input: email address, password
- Output: None
- Parent Dependency: Start, Signup
- Child Dependency: Main page, Forget Password

Log out:

- Input: None
- Output: None
- Parent Dependency: Profile Page
- Child Dependency: Login

Sign up:

- Input: email address, password, username
- Output: None
- Parent Dependency: Start, Login
- Child Dependency: Image Upload

Log in with Google:

- Input: None
- Output: None
- Parent Dependency: Start
- Child Dependency: Main Page, Create Profile

Forget Password:

- Input: email address, temporary password, a new password
- Output: temporary password (sent to the email entered)
- Parent Dependency: Start
- Child Dependency: Login

HomePage:

- Input: None
- Output: show messages about this action
- Parent Dependency: Login
- Child Dependency: Profile Page, Explore

Explore:

- Input: None
- Output: Chat room categories
- Parent Dependency: MainPage
- Child Dependency: Create chat room, Browse through chat rooms

Profile:

- Input: Avatar Image, User Email, User ID
- Output: Show options for changing user information
- Parent Dependency: MainPage
- Child Dependency: Image Upload, Change Username, Change Password, Logout

Change Password:

- Input: password, a new password, confirm new password
- Output: show messages about this action

- Parent Dependency: Profile
- Child Dependency: None

Change Username:

- Input: new username
- Output: Show confirmation about this action
- Parent Dependency: Profile
- Child Dependency: None

Create a Chat room:

- Input: chat name, description, category.
- Output: Show a message box on success or fail
- Parent Dependency: Explore
- Child Dependency: None

Browse through chat rooms:

- Input: None
- Output: A chat room list
- Parent Dependency: Explore
- Child Dependency: none

Join a chat room:

- Input: none
- Output: show a message box on success
- Parent Dependency: Explore
- Child Dependency: None

Upload Avatar:

- Input: photo Uri from Gallery
- Output: Show image preview and upload photo to Firebase with confirmation
- Parent Dependency: Profile page
- Child Dependency: None

Sprint 2:

Give feedback to developers:

- Input: text
- Output: email to devs
- Parent Dependency: None
- Child Dependency: None

Favorite List:

- Input: None
- Output: ListView of user favorite list
- Parent Dependency: Profile page,
- Child Dependency: None

View Chat Rooms Information:

- Input: None
- Output: None
- Parent Dependency: Chat room

- Child Dependency: None

Add to Favorite List:

- Input: "hollow heart" button click
- Output: button change to a "full heart" and chat room added to the favoriteList. Error message shows up if not successful
- Parent Dependency: Chat room
- Child Dependency: None

Remove from Favorite List:

- Input: "full heart" button click
- Output: button change to a "hollow heart" and chat room removed from the favoriteList. Error message shows up if not successful
- Parent Dependency: Chat room
- Child Dependency: None

View other's profile:

- Input: None
- Output: Target user info including favorite list
- Parent Dependency: Profile page, Chat room
- Child Dependency: Favorite list

Search a Chat room:

- Input: Chatroom prefix
- Output: List of chat rooms with search key
- Parent Dependency: Explore page
- Child Dependency: Chat Room list

Send Message:

- Input: A String input
- Output: A success toast
- Parent Dependency: Join a Chatroom
- Child Dependency: None

Receive Message:

- Input: None
- Output: Message found from other users
- Parent Dependency: Join a Chatroom
- Child Dependency: None

Retrieve Message Content:

- Input: None
- Output: message contents from other users
- Parent Dependency: Join a Chatroom
- Child Dependency: None

Retrieve user's profile avatar and username:

- Input: None
- Output: user's profile avatar will be displayed next to the message.
- Parent Dependency: Join a Chatroom
- Child Dependency: None

1.2 Which form of incremental testing did you follow

We use the **Top-down** approach because we follow the designed user flow of the event to visit and test each module in our app. Starting from the Main modules to sub modules, we give data to the module and assert the output of the module if the module can generate an output. We set up automated test for each module in order to test the integrity of the app.

2. Incremental & Regression Testing

Module: Feedback

Method: automatic

Incremental Testing

Defect No.	Description	Severity	How to correct
1	After the modification on main page activity UI, the button to feedback is deleted	important	Create a new button on toolbar

Regression Testing

Defect No.	Description	Severity	How to correct
1	When feedback is sent, the app does not returning to the mainpage	workaround	Add function that goes back to main page after successful feedback submission

Module: Chat room's information

Method: Manual

Incremental Testing

Defect No.	Description	Severity	How to correct
1	The count of like appears to be negative because there was a bug at favorite list activity	Workaround	Fix the bug in the favorite list activity

2	Very long chat room name results in overlapping texts	workaround	Fix the size of textViews so that they do not overlap
3	Very long description results in formatting problem	workaround	Fixing the description to have at most 4 lines of texts.
4	Some like count was stored as string and cannot render on UI	workaround	Fixing the like count data type in database and modify local function to store count using int.

Module: Display Favorite List

Method: Manual

Incremental Testing

Defect No.	Description	Severity	How to correct
1	Favorite list doesn't update properly when return from a new activity	Important	Override Onstart() method and refresh data adapter list for favorite list
2	Favorite list reproduce duplicated Chatroom element in explore and profile activities	Workaround	Clear data for adaptor of recyclerView and reload list every time the user redirecting to new activities
3	Favorite list in explore page occupied too much space on screen	Workaround	For recyclerView on explore page, change the orientation from vertical to horizontal .

Regression Testing

Defect No.	Description	Severity	How to correct
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1	Improper favorite list updating may result in no change on database	Important	When adding chatroom to favorite list, update the database each time when updating the local list.
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Module: Modify Favorite List

Method: Manual

Incremental Testing

Defect No.	Description	Severity	How to correct
1	When adding or deleting the favorite room to the favorite list, the corresponding "like" number in the chat room information is not updated properly	Workaround	Change the toggle button action to click button action. When the heart button is clicked, check if the chat room is successfully deleted or added to the list and update the number of likes inside the corresponding functions
2	The same chat room can be added twice to the favorite list	Workaround	Once the snapshot of the favorite list is retrieved by the program, check if the current chat room is in the list first. Change the button image to show if the room is in the favorite list or not.
3	If the maximum number(10) of chat rooms are already added to the favorites list, the user still can add more chat rooms to the favorite list.	Workaround	Once the snapshot of the favorite list is retrieved by the program, check the size of the array first. If the number of chat room is already the maximum number and the user tries to

			add the current room to favorite list, the program toasts an error message and the current chat room will not be added to the favoriteList in this case.
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Regression Testing

Defect No.	Description	Severity	How to correct
1	After delete room from favorite list was implemented, when deleting a chat room from the list, the program crashes and chatroom adapter gives an error	Important	The problem is caused because of the type of the "like" variable is overridden to "int" instead of "string". Change all the uses of "like" variable to be type of "string".

Module: Send Message

Method: Automatic

Incremental Testing

1	Some valid inputs are recognized as invalid inputs	Critical	Modify regex for message input to ensure the usage of some commonly used punctuation characters
2	Null Pointer Exception occurs when update the message to database	Critical	Chatroom object passed from ChatListActivity is null so the chatroom_id is also null. Instead of sending the whole chatroom object to ChatActivity, pass

			just chatroom_id value to ChatActivity.
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Regression Testing

No Defects.

Module: Receive Message(retrieve message content and profile avatar included)

Method: Manual

Incremental Testing

1	After sending a message, all the messages in this chatroom will be re-retrieve and display	Critical	Modify the database real-time listener to only retrieve document that is "ADDED" status, and when new message is added to the database, only return the latest message to front end.
2	After sending a message, the message is not displayed. Needs to quit the chatroom and rejoin.	Critical	Change the database listener from onCompleteListener to SnapshotListener so that the message retrieval is in real-time.
3	When typing in the message editText, the soft keyboard will block the message list and users can't scroll down to bottom to see latest messages.	Important	In the layout file for the ChatActivity, relate the message recyclerview to be placed above the message edittext.
4	When new message came, the message recycler view is not scrolled down to bottom.	Important	Modify the adapter so that when the adapter get updated, scroll down to bottom.

5	When users update their usernames and profile avatar, their sent messages in chatrooms will not be updated. The displayed profile avatar and usernames are still the old ones.	Important	The usernames and profile avatar url stored in the message object will not be updated when users update username and avatar url. Instead of using the username and url stored in the message, use user_uid stored in the message object and then retrieve the updated username and avatar url with user_uid.
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Regression Testing

No Defects.

Module: View Others Profile

Method: Manual

Incremental Testing

Defect No.	Description	Severity	How to correct
1	No method for users to redirect to other's profile page	Important	Add onclick functionality on user avatar in chatroom
2	Accessing different user profile always redirects to same User profile page	Important	Update user ID for each element of listView in chatAdaptor and pass it to user profile when opening profile page

Regression Testing

Defect No.	Description	Severity	How to correct
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1	No responses when pressing user avatar image, but redirect to profile page when pressing the username	Workaround	Move onClick listener from textView to imageView
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Module: Search Chatroom

Method: Manual

Incremental Testing

Defect No.	Description	Severity	How to correct
1	Searched chatroom will remain when starting a new search session	Important	Clear data for search adaptor everytime when starting a new search session
2	Search activity only support full name search	Workaround	Add regular expressions when querying from firebase

Regression Testing

No Defects.