

Shared To-Do List
CSE 5324-002
Coffee_Code - Group 6
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Project Description

1 **ShareList** - Since the start of the pandemic, many workplaces have switched to working from
2 home (working online). This can cause problems in collaboration within the teams as many places
3 are switching to working online for the first time. There already exist many different apps which
4 cater to only large organizations, have a steep learning curve, or are not available/accessible to
5 everyone. We would like to create a mobile app which is intuitive to use and accessible by
6 everyone. An app where a user can create a group of tasks, and decide which users will work on
7 it. This app can be used whether the group follows the SCRUM model, waterfall model, Agile, or
8 no model at all.

9 This to-do app is designed to allow users to create, delegate, and track tasks that are
10 shared amongst users in a group. The app needs the internet to connect with the server so all
11 users can stay synchronized. The main purpose of the app is to allow group members in a virtual
12 environment to have better collaboration. The app can be used by anyone wishing to
13 create/delegate tasks with others and not just for industry use. Whether you are a group of
14 students working on a semester project, or a family managing the chores, or an organization
15 managing their work on the go, this app is an efficient, fast, user-friendly and smooth task-
16 management tool for you!

17 *Admin:* Any user that has created a group is the admin of that group. The admin can add
18 users to the group, assign who works on what tasks, promote users to admin status, and
19 add/remove/edit tasks.

20 *User:* Anyone who is part of a group, but is not admin. Can be assigned to tasks by the
21 admin. A user can mark a task as completed.

22 *Task:* Tasks can only be created by the admins. All tasks in a group are visible to all
23 members within that group. Each task has users assigned to it. For tasks with multiple users
24 assigned to it, ALL users must mark the task completed in order for it to be considered fully
25 completed. Each task has properties such as:

- 26 • Start time- creation date/time of task.
- 27 • Completion time- when the task has been marked completed by all those
28 assigned to it.
- 29 • Due Date - the date the admin expects the task to be done by.
- 30 • Time spent - the time from the start time to completion time.
- 31 • Title, description, users assigned

32 *Group:* "Groups" are collections of tasks that belong to the members of that group. Groups
33 can be created by any user of ShareList. When a user creates a group, they have admin status.
34 Members of the group include admins and users. Admins can control who is added/removed from
35 the group. Tasks can be added by the admin only. The whole concept of groups is to have a
36 specific goal that all tasks within that group are working towards. Think of a group as a "project"
37 where the members of the group work towards a certain goal, accomplishing tasks along the way.

39 **Functions** -

- 40 • Login/Profile: Create/edit login credentials, manage sessions, etc.
- 41 • Add/Remove/Edit/Assign Tasks: Admins adds or removes tasks from the group. Admins
42 edit who the task is assigned to, what the task contains, due date, start date, etc.
- 43 • Search tasks/groups/users: Search by keyword.

- 44 ● Mark Completed: Allows for users to mark a task as completed. All assigned users must
45 mark a task completed for it to be fully complete.
- 46 ● Create/Edit Group: Allows a user to create a group of unique users. The creator is initially
47 set as the admin. Admin can add additional admins.
- 48 ● Delete Group: Allows any admin of a group to delete the group. Deleting the group will
49 permanently delete the group and the related records.
- 50 ● Group Summary: Calculates and reports to the user a summary of the group, which
51 includes:
- 52 ○ Tasks completed - number and total time of completed tasks.
- 53 ○ In-progress tasks - number of in-progress tasks.
- 54 ○ Tasks not completed by due date - number/total-time/total-time-past-due.
- 55 ● Update: Updates the UI, checks for changes/updates within the tasks. Syncs current tasks
56 with the database.

57

58 **Utilized Resources -**

- 59 ● Database: Used for storing information related to tasks, groups, users.
- 60 ● Wireless: Used for syncing between each user's device and the database.

61

62 **Android Experience per Team Member -**

63 Hannan Khan - No prior experience with Android. I have implemented/developed simple
64 apps in Java when I had started out programming. In terms of app development, I mainly focus
65 on apps in Python, which I consider myself to be strong in. These apps consisted of both frontend
66 and backend work.

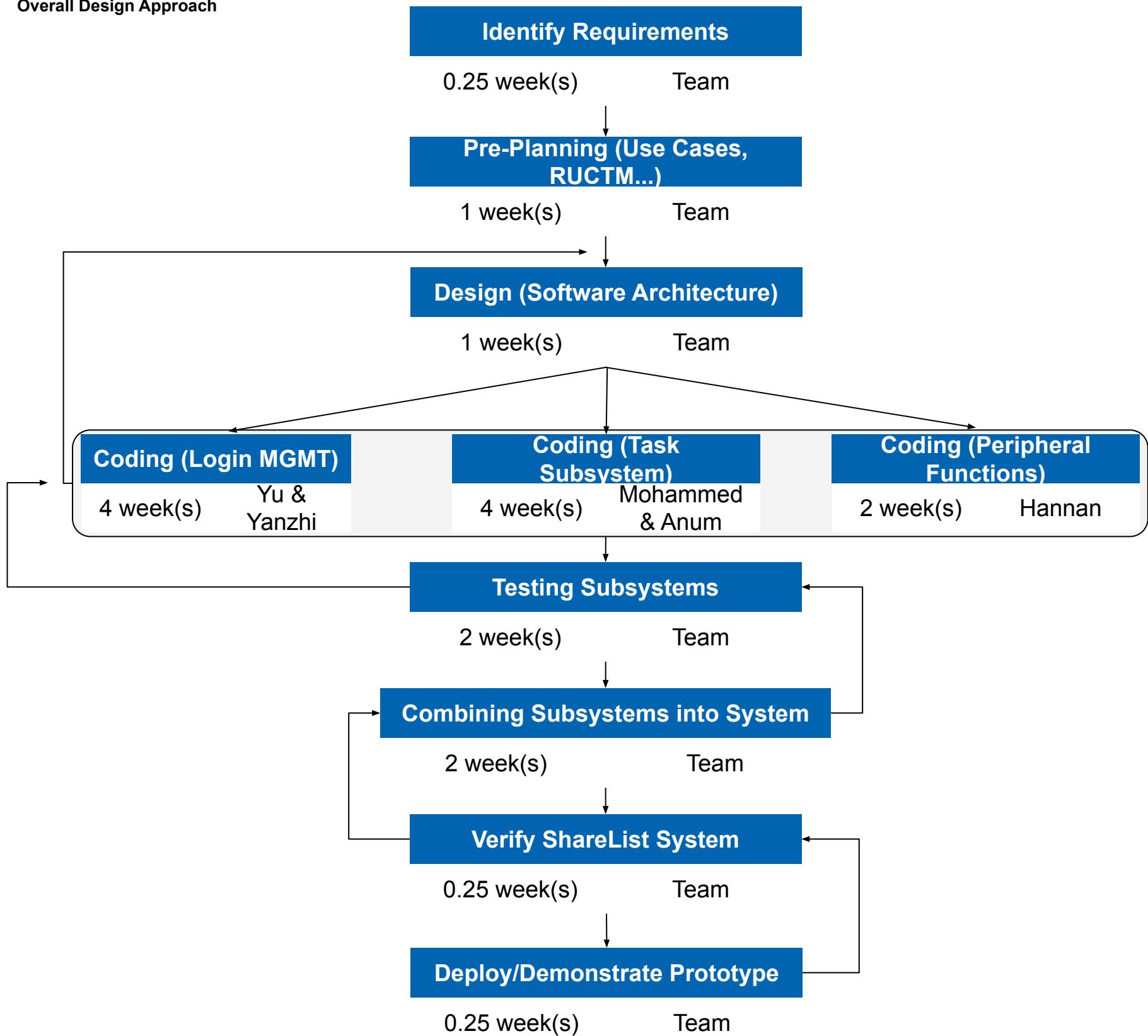
67 Yanzhi Wang - I do not have a lot of Android experience and I have not worked on any
68 Android project during the previous semester. The project will take the whole semester, so we will
69 have plenty of time to learn. I hope everyone in the team will learn something about Android, UML,
70 and the agile process by working together on the project.

71 Yu Zhao - Do not have any experience with Android development. I have some small full-
72 stack applications experience, and familiar with programming languages like Java, Python, and
73 JavaScript. I can work on both the frontend and backend.

74 Mohammed Furkhan Shaikh - Does not have prior experience with Android application
75 development. I have experience with programming languages like Java, C, Python. I'm familiar
76 with object-oriented concepts. I can work on the backend and implement functions for the app.
77 No experience with the formal design process.

78 Anum Farrukkh Khan - No prior experience with Android development. I am familiar with
79 python, java and javascript and have developed various applications using these languages. I
80 have developed a mobile application in react native as part of an academic project.

Overall Design Approach



Requirements

Req ID	Req Statement	Line (From Project Description)
R1	The system shall provide for authenticated login to the ShareList app.	
R1.1	Register.	40
R1.2	Login.	
R1.3	Log Off.	
R1.4	Reset password.	
R2	The system shall provide group admins the ability to:	
R2.1	Add tasks.	41,42
R2.2	Remove tasks.	
R2.3	Edit tasks.	
R2.4	Assign tasks.	
R2.5	Add users to group.	46,47
R2.6	Remove users from the group.	34,35
R2.7	Add new group admins to group.	18,47
R2.8	Delete group	48,49
R2.9	Edit group.	46,47
R3	The system shall provide users the ability to:	
R3.1	Mark task as completed.	44,45
R3.2	Create groups.	46,47
R4	The system shall provide the ability to search by keywords.	43
R5	The system shall provide tasks the ability to:	
R5.1	Be visible to all members in that group.	22,23
R5.2	Have users assigned to it.	41,42
R5.3	Have assigned users mark it as completed.	44,45
R6	The system shall provide tasks the following properties: start time, completion time, due date, time spent, title, description, users assigned	50
R7	The system shall provide users the ability to create groups, and have group admin status when they do.	46,47
R8	The system shall provide a database used for storing information related to tasks, groups, users.	59
R9	The system shall provide wireless resources used for syncing between each user's device and the database in realtime.	60
R10	The system shall provide a group summary function, which will accomplish:	50
R10.1	Calculating and reporting the tasks completed.	52
R10.2	Calculating and reporting the in-progress tasks.	53
R10.3	Calculating and reporting the tasks not completed by due date.	54

Use Case List

Use Case #	Use Case Name
UC1	Login
UC1.1	Register.
UC1.2	Login.
UC1.3	Log Off.
UC1.4	Reset password.
UC2	Manage task
UC2.1	Add tasks.
UC2.2	Remove tasks.
UC2.3	Edit tasks.
UC2.4	Assign tasks.
UC3	Manage group
UC3.1	Add users.
UC3.2	Remove users.
UC3.3	Add admins.
UC3.4	Delete groups
UC3.5	Edit groups.
UC4	Mark task as completed
UC5	Create groups.
UC6	Search by keywords.
UC7	Generate summary

High Level Use Cases

UC 1.1: Register

- TUCBW the user entering required details and clicking the register button.
- TUCEW the user being registered successfully.

UC 1.2: Login

- TUCBW the user enters the username and password.
- TUCEW the user successfully logs in and can see the home page.

UC 1.3: Log Off

- TUCBW the user clicks on the logout button.
- TUCEW the user is successfully logged out and can see the login page.

UC 1.4: Reset Password

- TUCBW the user clicks on the reset password option.
- TUCEW the password of the user is changed.

UC 2.1: Add Tasks

- TUCBW the admin clicking on the “Add Tasks” option.
- TUCEW the admin adding the task successfully and can see the added tasks.

UC 2.2: Remove Tasks

- TUCBW the admin clicking the “Remove Task” option.
- TUCEW the admin removing the task successfully.

UC 2.3: Edit Tasks

- TUCBW the admin clicking on the “Edit Task” option and making the necessary .
- TUCEW the admin being able to see the changes made to the respective tasks.

UC 2.4: Assign Tasks

- TUCBW the group admin assigning the task to particular users.
- TUCEW the users get assigned new tasks.

UC 3.1: Add users

- TUCBW the group admin clicking on the add member option.
- TUCEW the user being added to the selected group.

UC 3.2: Remove users

- TUCBW the admin selecting a user to be removed from the group.
- TUCEW the user is no longer a member of the group.

UC 3.3: Add admins

- TUCBW the admin electing a member to be an admin.
- TUCEW the selected user being the admin for the group.

UC 3.4: Delete Group

- TUCBW the admin selecting the delete group option.
- TUCEW the group, related tasks and users, being removed from the records.

UC 3.5: Edit Group

- TUCBW the admin selecting the edit group option.
- TUCEW the group information is updated by the admin.

UC 4: Mark task as completed

- TUCBW the users selecting their assigned tasks to be marked complete.
- TUCEW the user seeing the task as crossed off.

UC 5: Create Group

- TUCBW the user selecting the create group option.
- TUCEW the user sees a confirmation “The group has been created”.

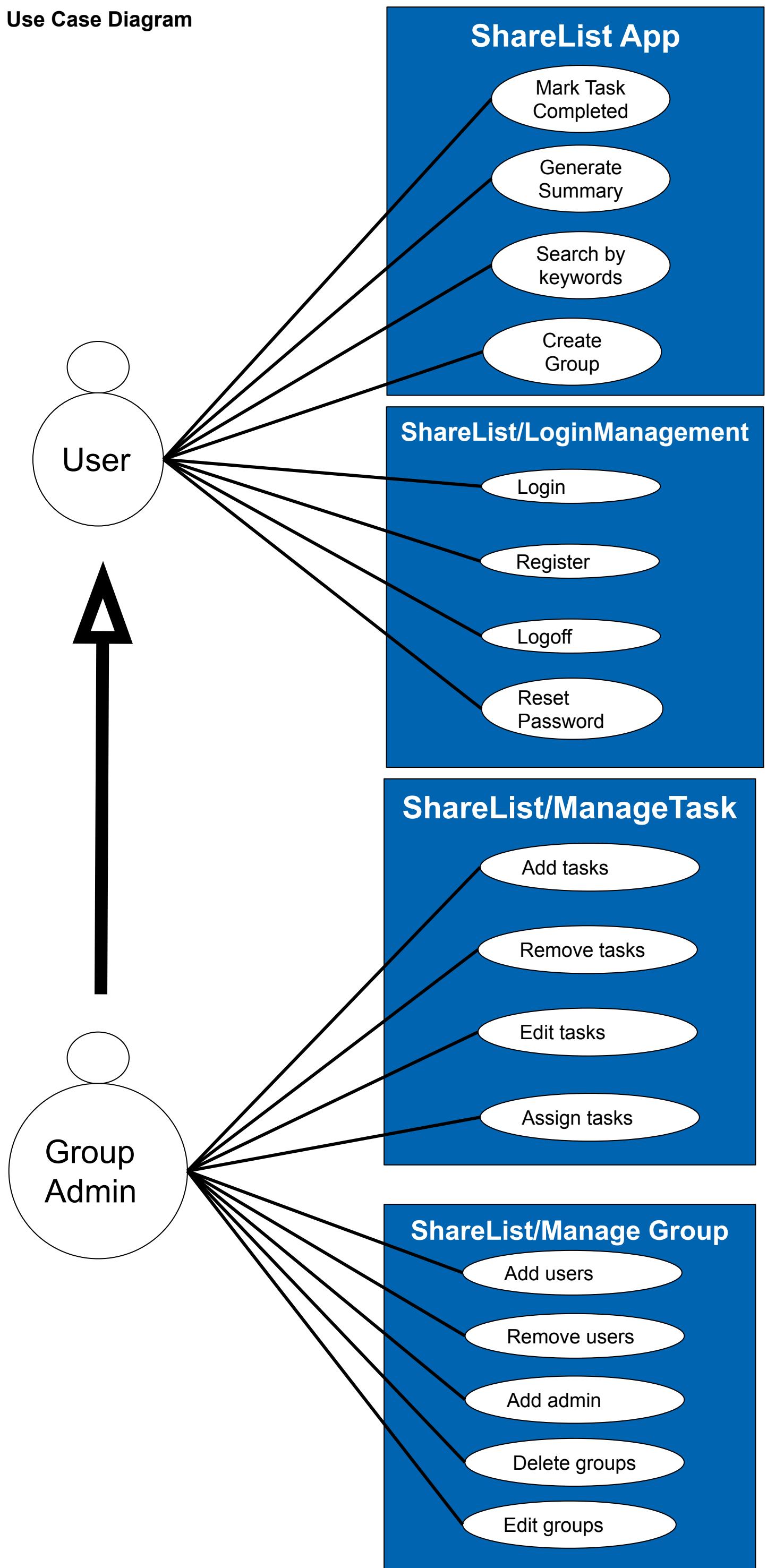
UC 6: Search by keywords

- TUCBW user clicks on the Search button and enters the search keyword.
- TUCEW user sees the search results.

UC 7: Generate summary

- TUCBW the user selecting the generate summary option.
- TUCEW the summary of tasks and reports being displayed to the user.

Use Case Diagram



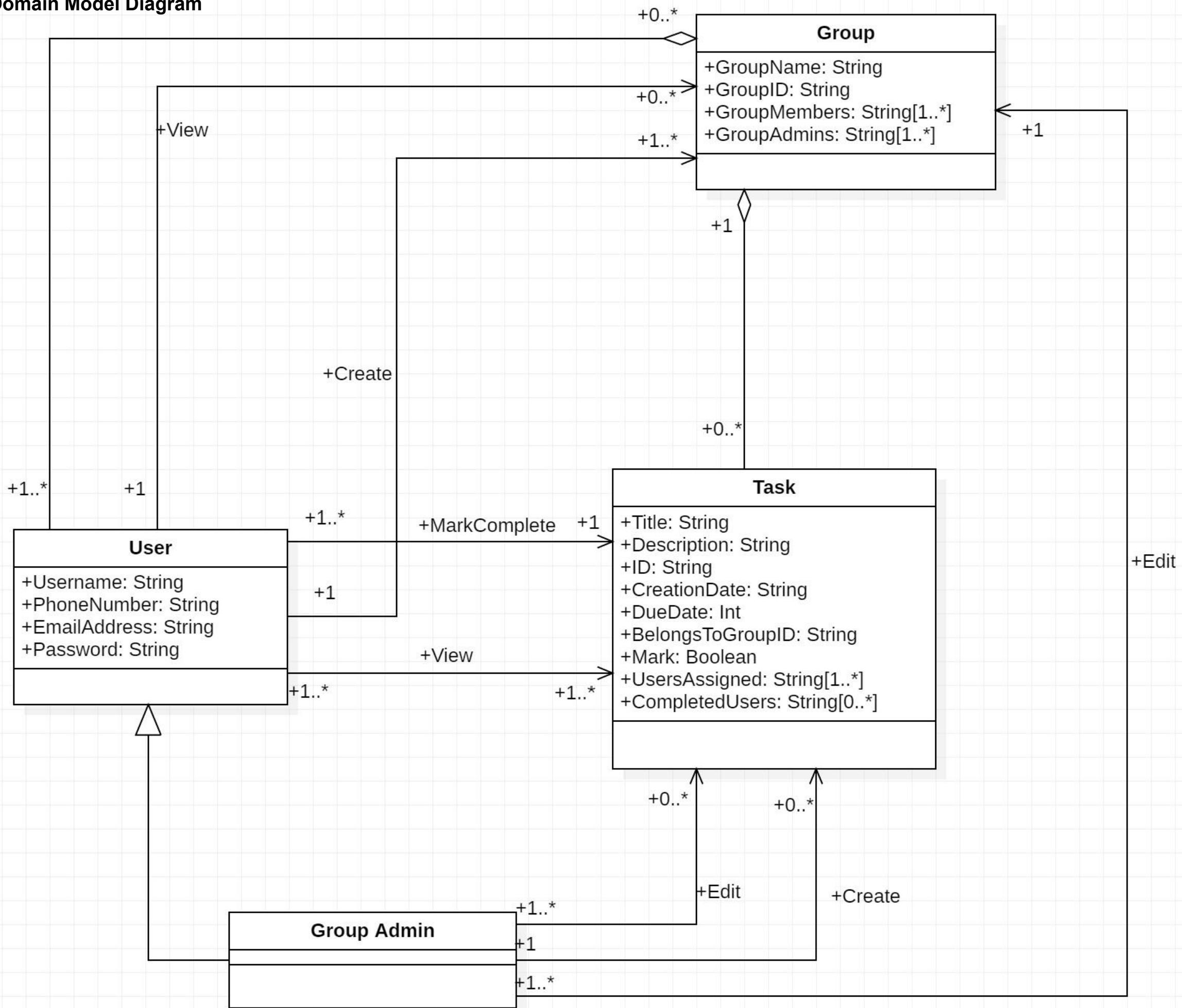
Requirements to Use Case Traceability Matrix

Increment Matrix

Use Case #	Priority	Effort (Person-weeks)	Depends on	Iteration 1 (03/12)	Iteration 2 (04/09)	Iteration 3 (05/03)	
UC1	3	6	None				
UC1.1					6		
UC1.2					6		
UC1.3					6		
UC1.4						6	
UC2	2	2	None				
UC2.1				2			
UC2.2						2	
UC2.3					2		
UC2.4	1	3	UC 1		3		
UC3		4					
UC3.1					4		
UC3.2					4		
UC3.3						4	
UC3.4						4	
UC3.5						4	
UC4	5	3	UC 2		3		
UC5		4	UC 3		4		
UC6	5	2	UC 2		2		
UC7	4	1				2	
Total Effort		63		2	40	22	

1 PW = 5 hrs				10	200	110
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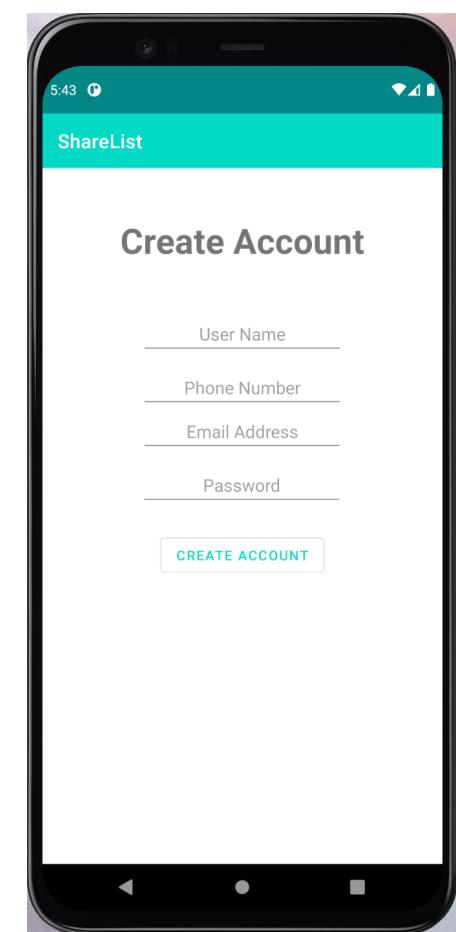
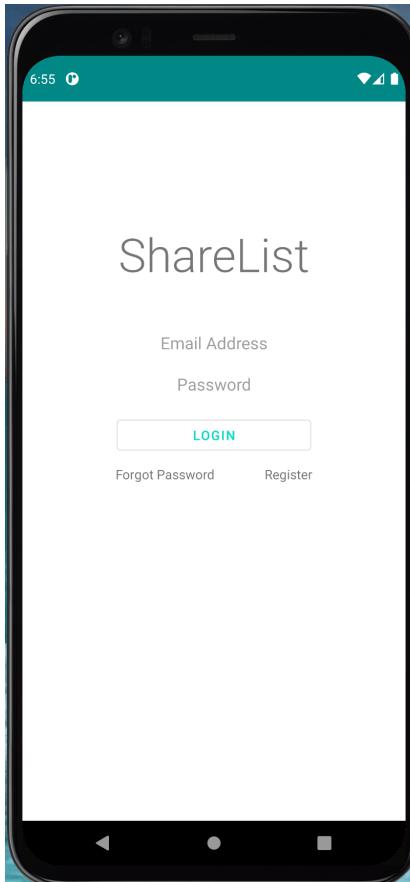
Domain Model Diagram



Expanded Use Cases with User Interface Prototypes

EUC1.1: Register

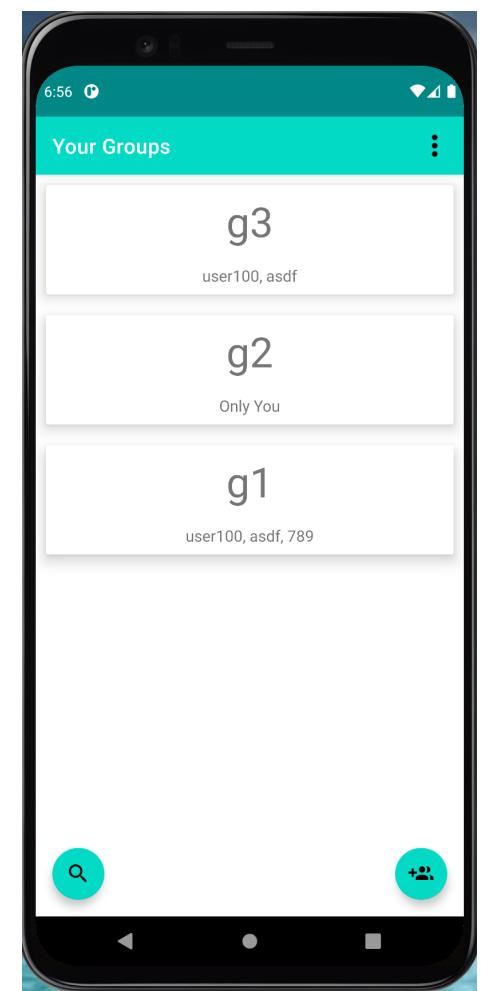
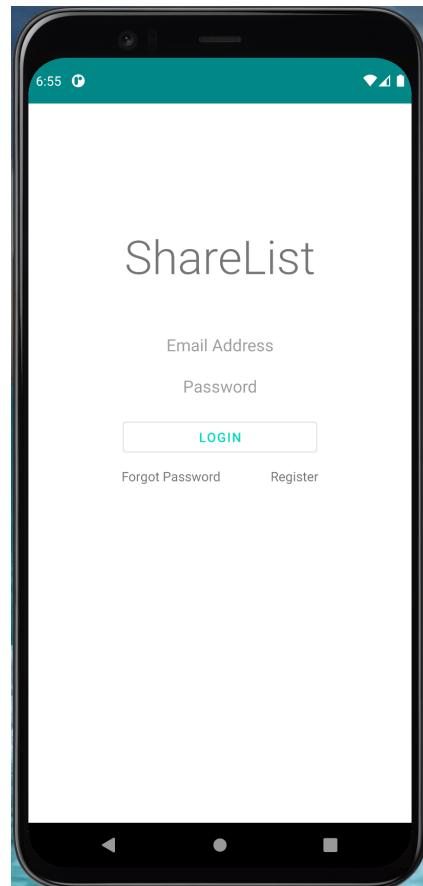
Actor: User	System: ShareList/LoginMGMT
	0. System displays the Login/Register page.
1. TUCBW the user clicks on the 'Register' button.	
3. User enters credentials and clicks 'Create Account'.	2. System displays the Register Activity page.
5. TUCEW the new user is registered successfully.	*4. System checks if the information is okay, displays a confirmation, and takes the user back to the Login page.
<p>Postcondition: The user's new account is stored in the database, ready for authentication.</p>	



EUC1.2: Login

Precondition: This use case assumes that the user is seeing the Login page and is a registered user.

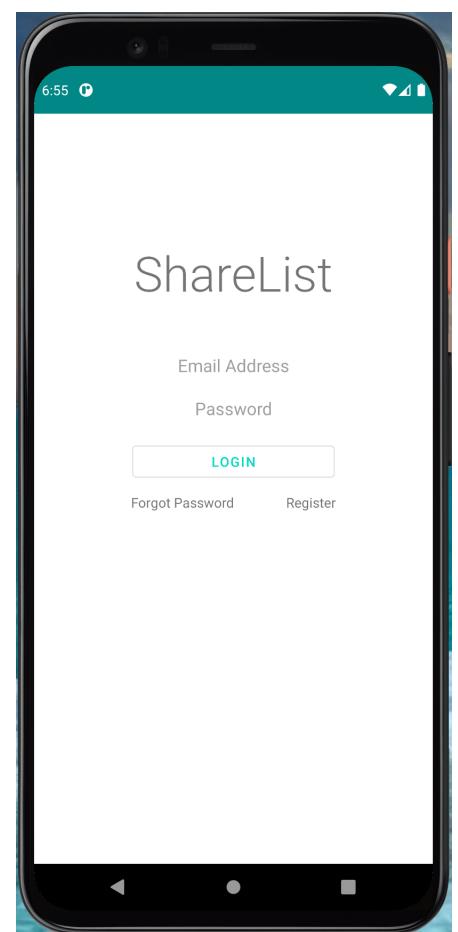
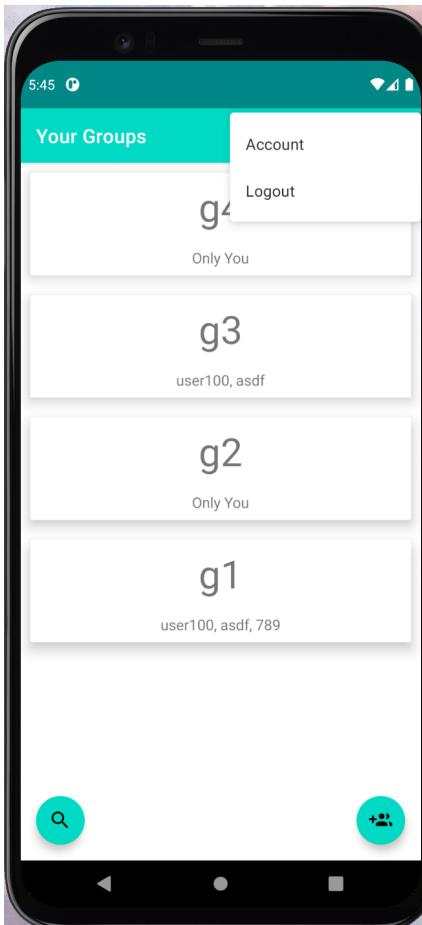
Actor: User	System: ShareList/LoginMGMT
1. TUCBW the user enters the details and clicks on the Login button.	0. System displays the Login page. *2. System checks the credentials entered by user: a) If the credentials are correct, the users 'Your Groups' page will be displayed. b) If incorrect, the system will display an "Incorrect username/password" message.
3) TUCEW the user successfully logs in.	
Postcondition: The user will be able to access the features of the app.	



EUC1.3: Logout

Precondition: This use case requires that the user is logged in, and is on the Your Groups page.

Actor: User	System: ShareList/LoginMGMT
1. TUCBW user clicking on the Logout button.	0. System displays the Logout button on the menu.
3. TUCEW user successfully logging out of the application.	2. System displays the Login/Register page.
Postcondition: The user must be able to login again.	

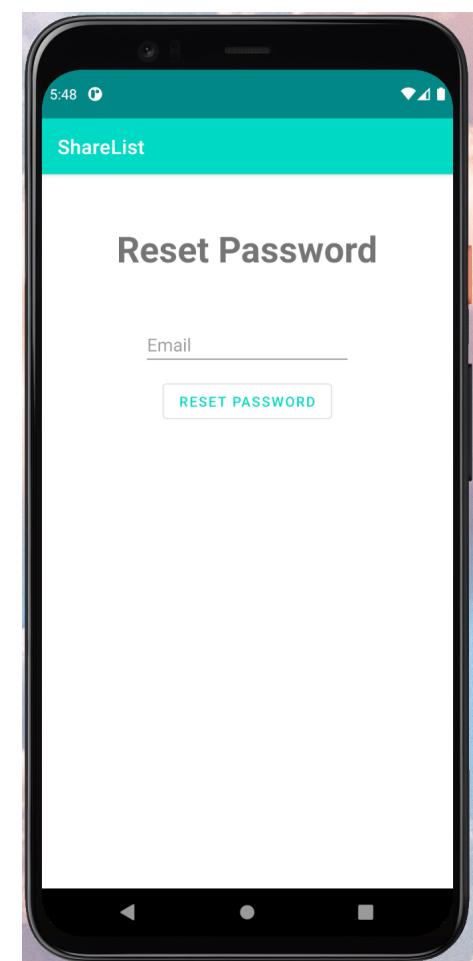
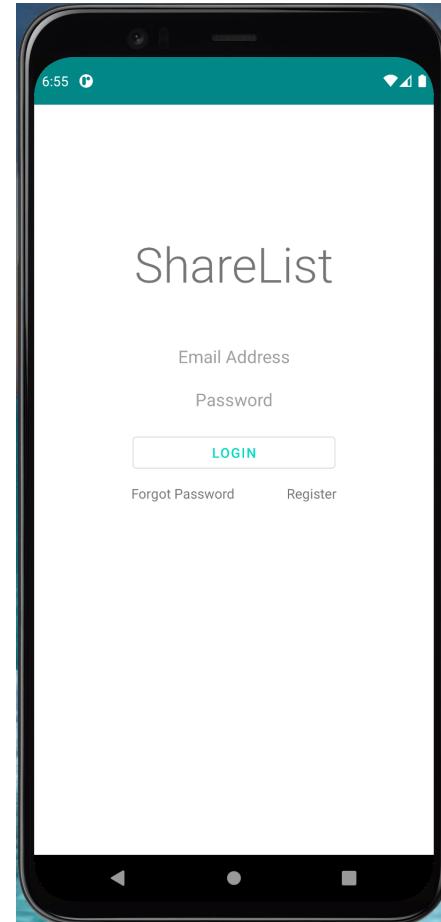


EUC1.4: Reset Password

Precondition: This use case requires that the user is already registered.

Actor: User	System: ShareList/LoginMGMT
1. TUCBW user clicking on the Forgot Password button.	0. System displays the Login/Register page.
3. The user enters the email id and clicks on the Submit button.	2. System prompts the user to enter the registered email id.
5. The user clicks on the link received in email and enters the new password.	4. System sends a link to the email to reset the password.
7. TUCEW the password of the user is changed.	6. System successfully updates the new password.

Postcondition: The user's new password is stored in the database.

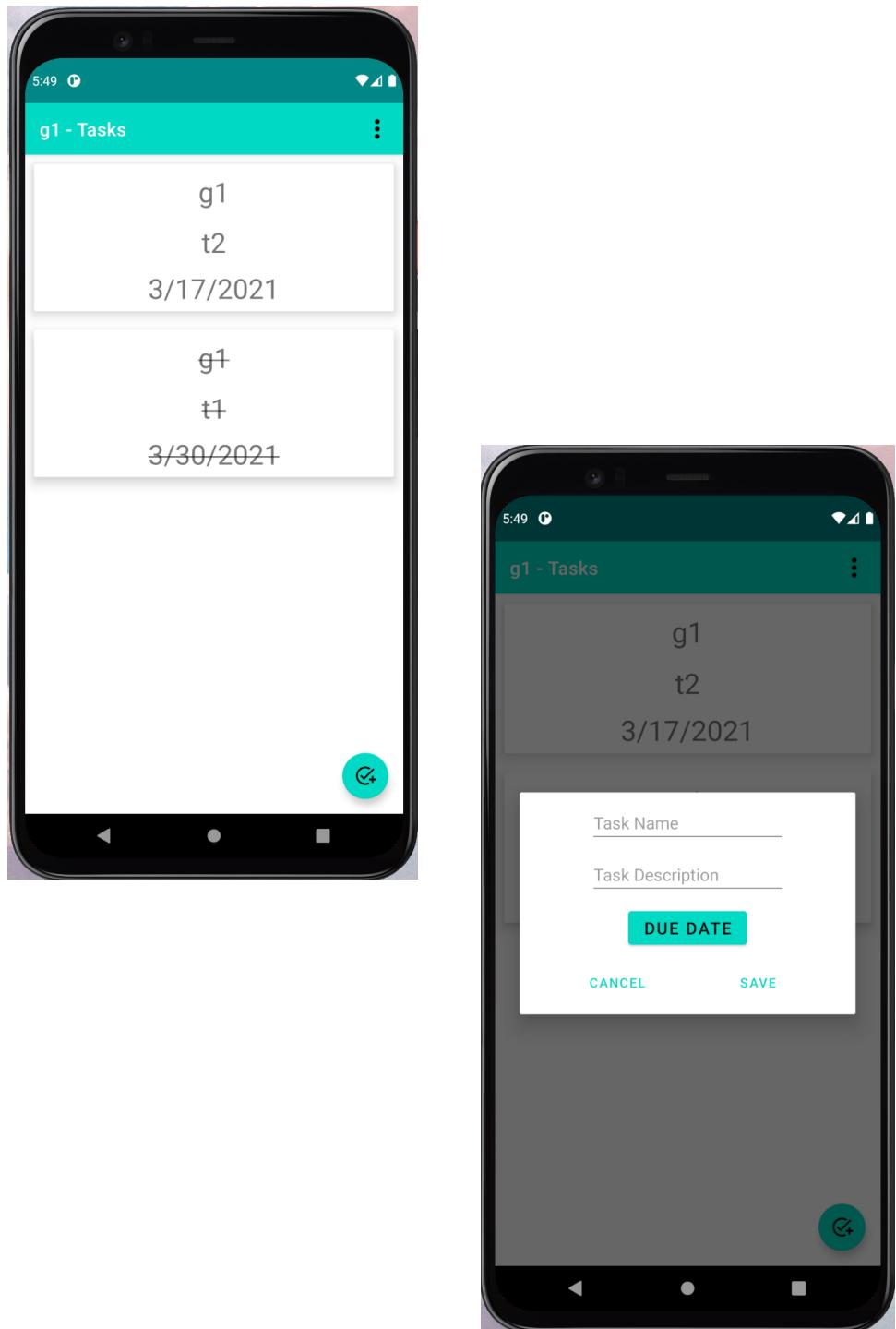


EUC2.1: Add Tasks

Precondition: This use case requires that the user is logged in and is an admin of the group.

Actor: Group Admin	System: ShareList/ManageTask
1. TUCBW group admin clicking on the Add Task button.	0. System displays the Add task button.
3. The group admin enters the information and clicks on the Save button.	2. System prompts the group admin to enter the Task name, Task Description and Due date. *4. System checks for errors, and processes the save request.
5. TUCEW the group admin sees a confirmation “The task has been added” on the app	

Postcondition: The task is created successfully and stored in the database.

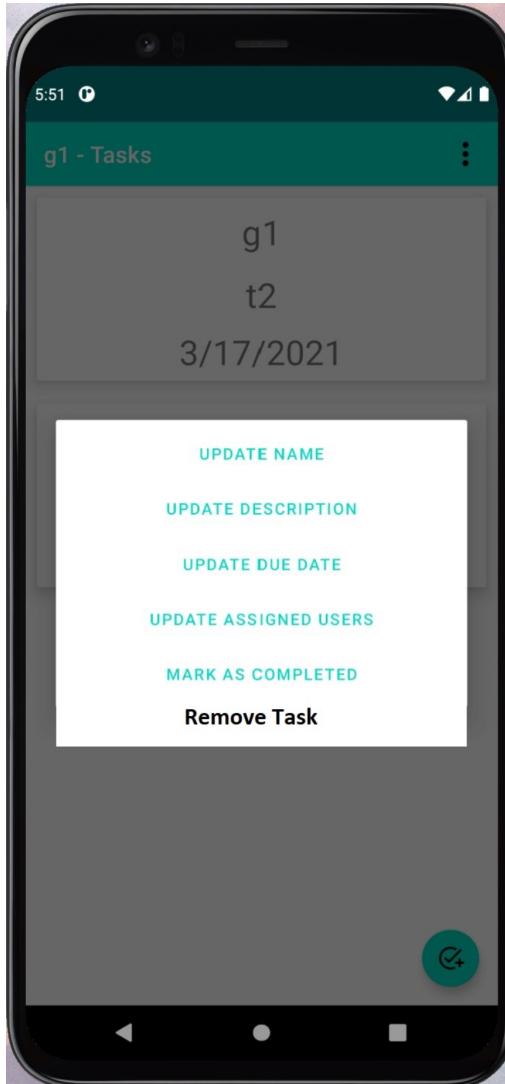


EUC2.2: Remove Tasks

Precondition: This use case requires that the user is an admin of the group and the task has been created.

Actor: Group Admin	System: ShareList/LoginMGMT
1. TUCBW group admin clicking on the Remove task button.	0. System displays the Remove task button.
3. The group admin confirms by clicking the “Confirm” button.	2. System prompts the group admin to confirm the remove task activity.
5. TUCEW the group admin seeing a confirmation of the task being removed.	*4. System removes the task.

Postcondition: The task is removed successfully.

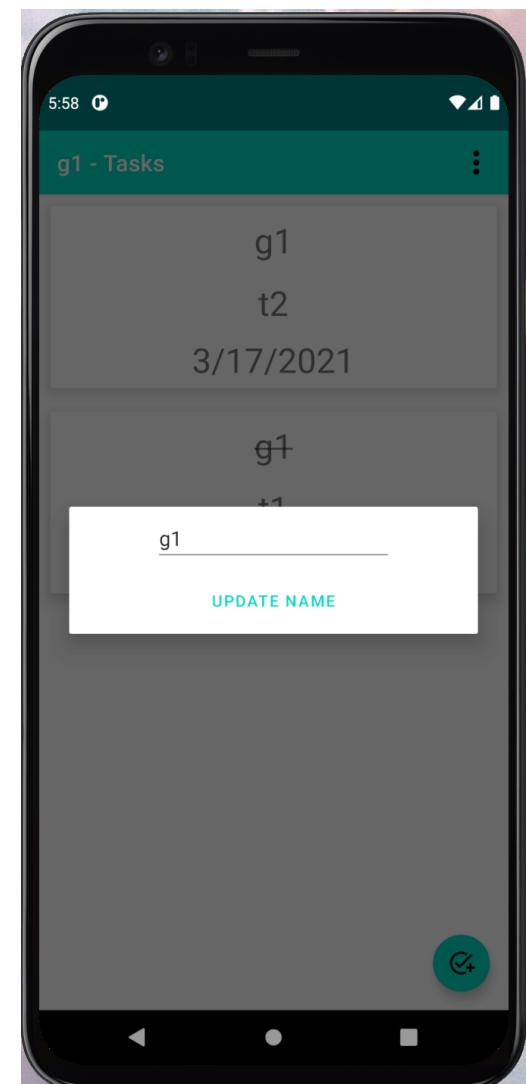
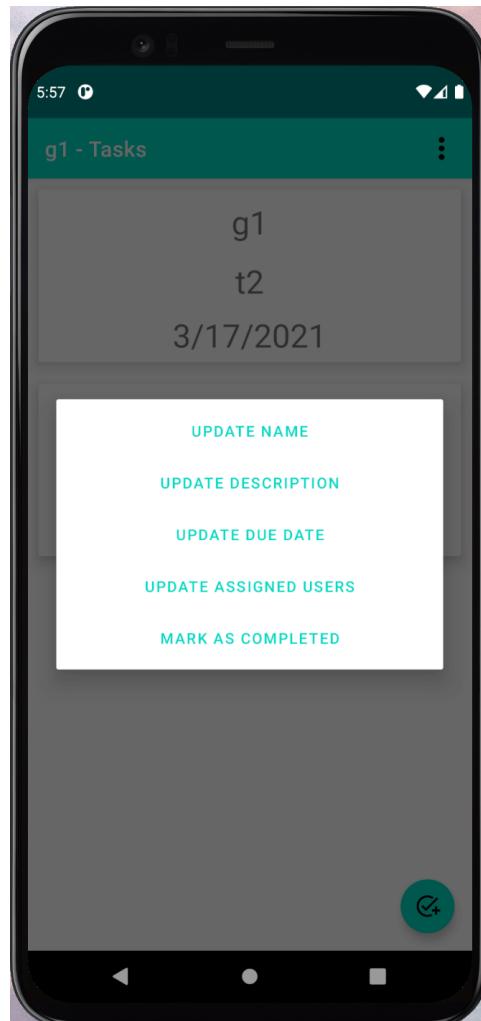


EUC2.3: Edit Tasks

Precondition: This use case requires that the task is already created.

Actor: Group Admin	System: ShareList/LoginMGMT
1. TUCBW group admin clicking on the Edit task button.	0. System displays the Edit Task on the app. *2. System provides group admin the ability to edit name, description, due date and assigned users and displays a message "The task has been edited".
3. TUCEW group admin sees the changes.	

Postcondition: The task is edited successfully and updated in the database.

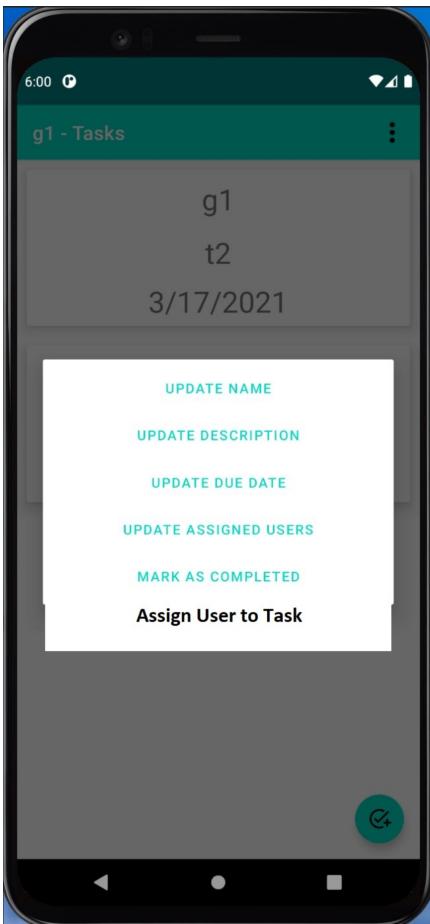


EUC2.4: Assign Tasks

Precondition: This use case requires that the user is an admin of the group and the task is created.

Actor: Group Admin	System: ShareList/LoginMGMT
1. The group admin clicks on the Edit task button.	0. System displays the Edit task button. *2. System provides an option “Assign User to Task” and allows the group admin to choose the user.
3. TUCEW group admin sees the user is assigned to the task.	4. System displays a message “The task has been assigned”.

Postcondition: The task is assigned to the respective user successfully.

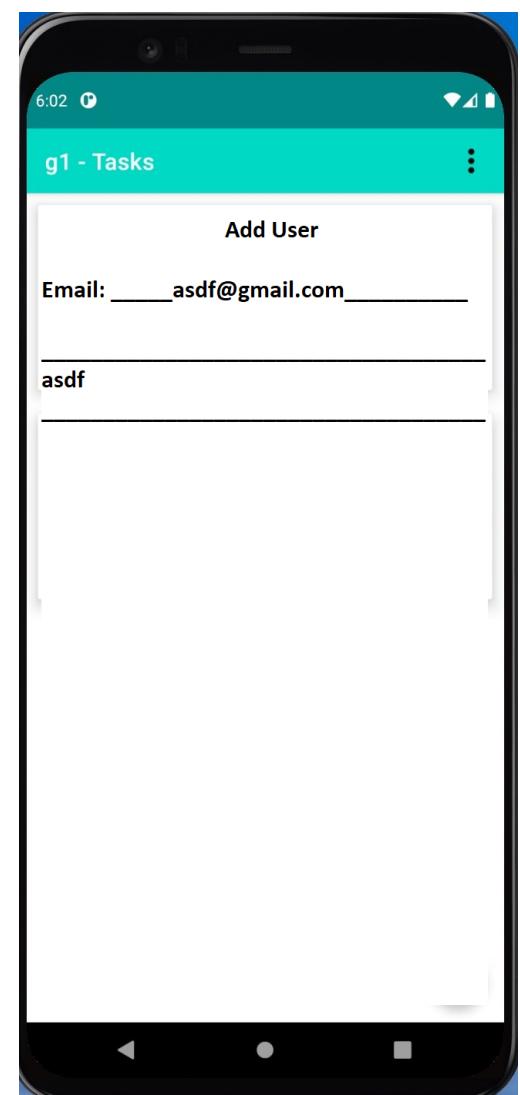
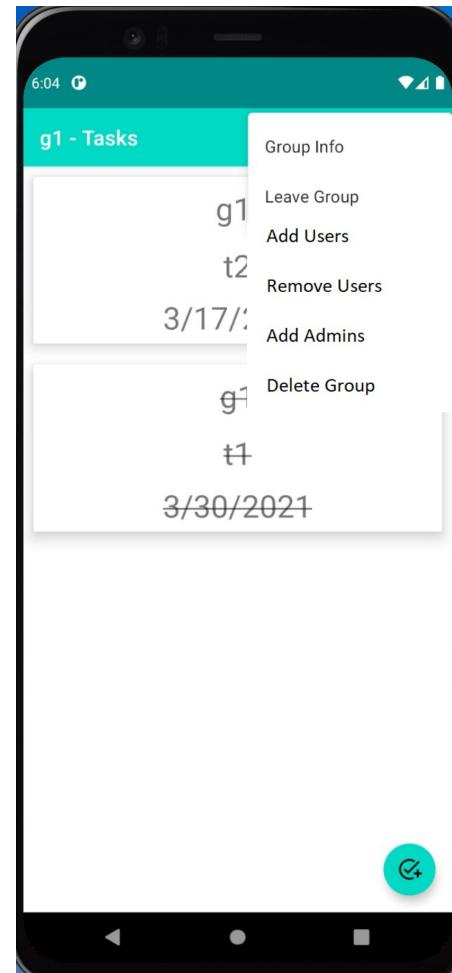


EUC3.1: Add Users

Precondition: This use case requires that the user is an admin of the group.

Actor: Group Admin	System: ShareList/LoginMGMT
1. TUCBW admin clicks on the Add User button.	0. System displays the Add User button.
3. Group admin selects the particular user to be added and clicks on the Add User button.	2. System prompts admin to enter the user's email to be added and displays a message "The user has been added".
5. TUCEW group admin seeing the user added to the group.	*4. System adds the user.

Postcondition: The user is successfully added to the respective group.

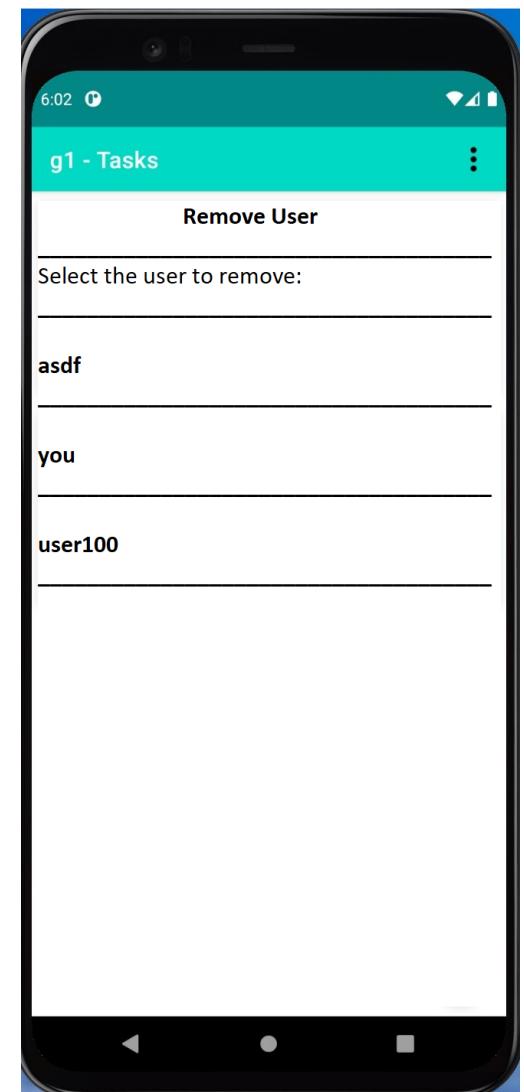
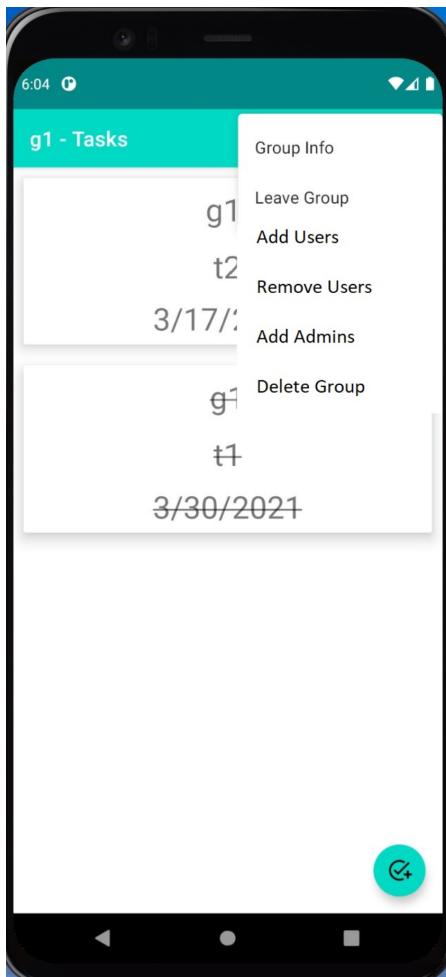


EUC3.2: Remove users

Precondition: This use case requires that the user is an admin of the group.

Actor: Group Admin	System: ShareList/LoginMGMT
1. TUCBW admin clicking on the Remove User button.	0. System displays the Remove User button. *2. System prompts admin to select the user to be removed and removes it.
3. TUCEW group admin sees the user is no longer a member of the group.	

Postcondition: The selected user is successfully removed from the respective group.

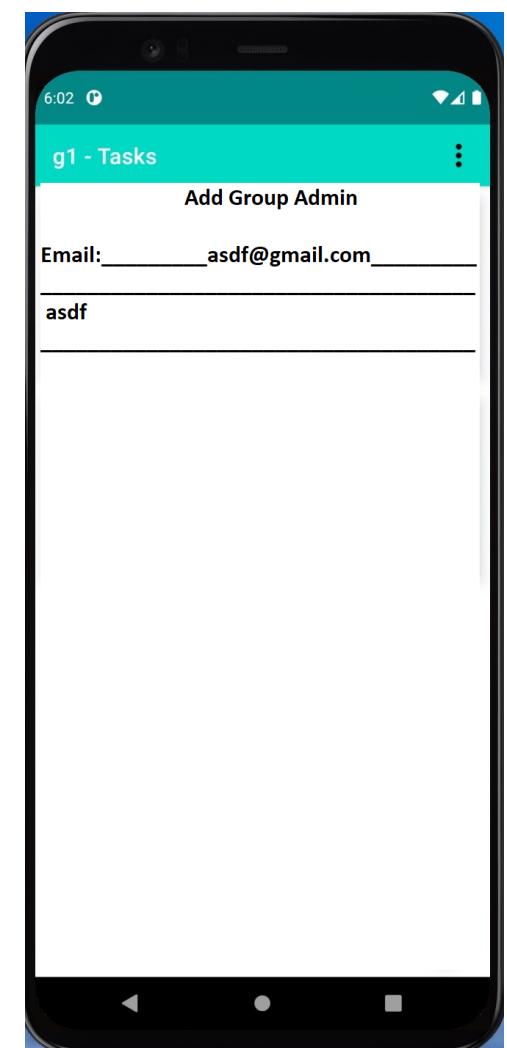
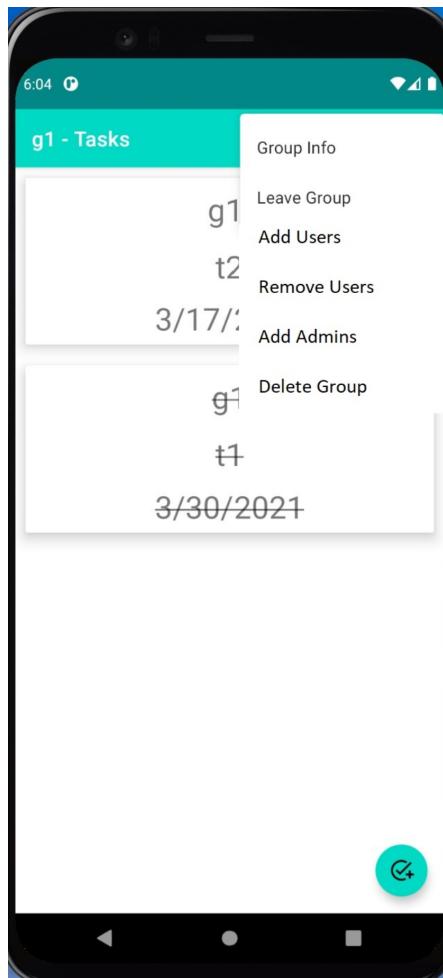


EUC3.3: Add Admins

Precondition: This use case requires that the user is an admin of the group.

Actor: Group Admin	System: ShareList/LoginMGMT
1. TUCBW group admin clicking on the Add Admin button.	0. System displays the Add Admins button. *2. System prompts admin to select another user to be added as an admin.
3. TUCEW group admin sees the user is now an admin.	

Postcondition: The user is successfully added as the admin of the respective group.

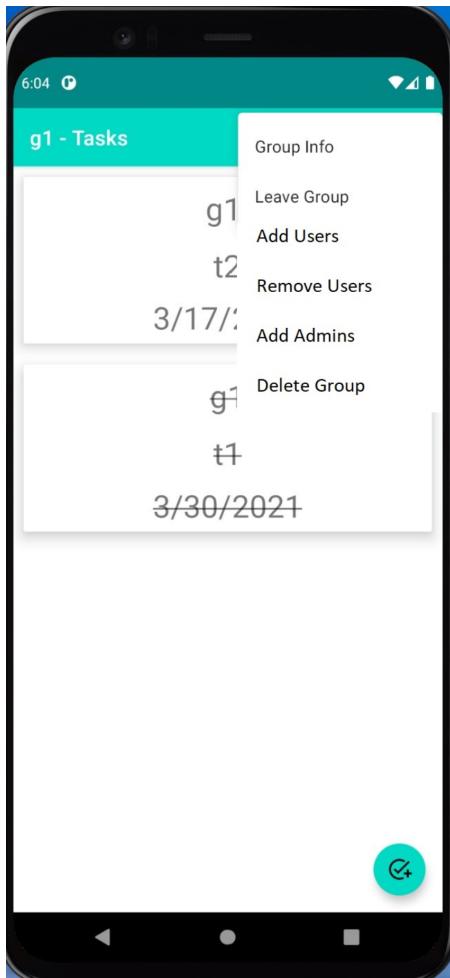


EUC3.4: Delete Group

Precondition: This use case requires that the user is an admin of the group and the group is created.

Actor: Group Admin	System: ShareList/LoginMGMT
1. TUCBW group admin clicking on the Delete group button. 3. Group admin selects the yes option. 5. TUCEW the group, related tasks and users, being removed from the records	0. System displays the Delete group button. 2. System asks the group admin for confirmation. *4. System deletes the group and displays a message "The group has been deleted".

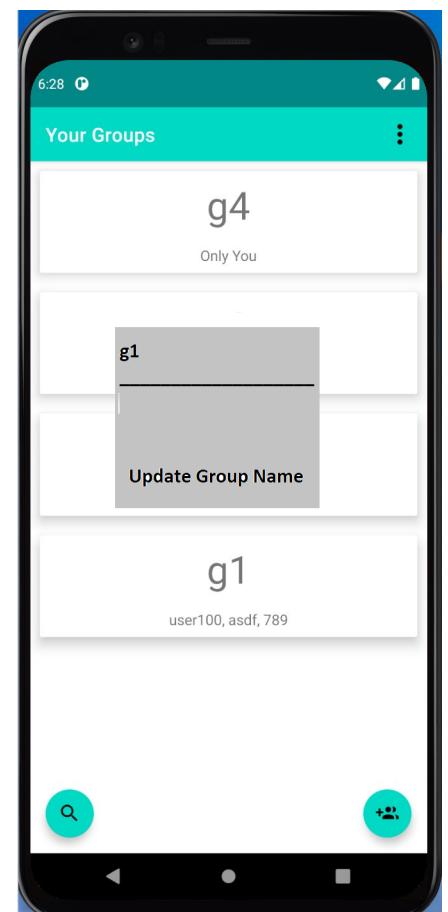
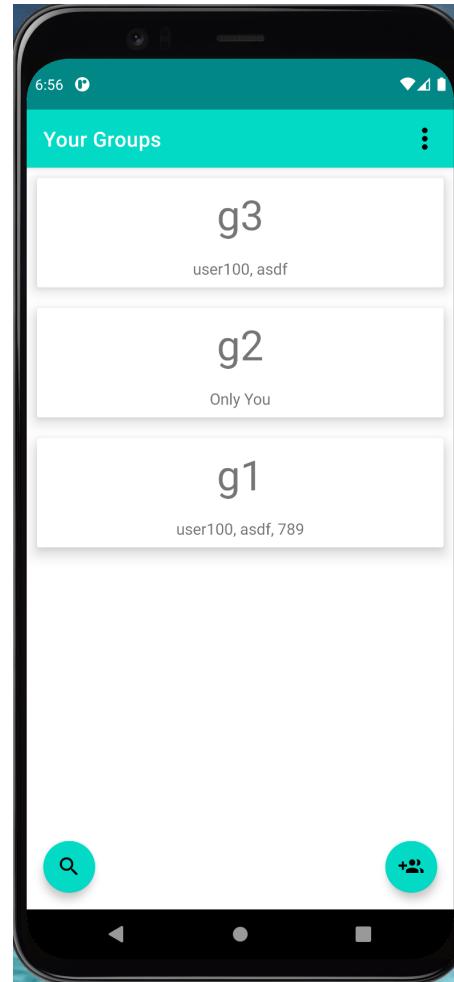
Postcondition: The group is deleted successfully and the entry is removed from the database.



EUC3.5: Edit Group

Precondition: This use case requires that the user is an admin of the group and the group is created.

Actor: Group Admin	System: ShareList/LoginMGMT
1. TUCBW admin clicking on the Edit group button.	0. System displays the Edit group button. *2. System provides an option to edit the group name.
3. TUCEW group information is updated by the group admin.	
Postcondition: The group is updated successfully.	

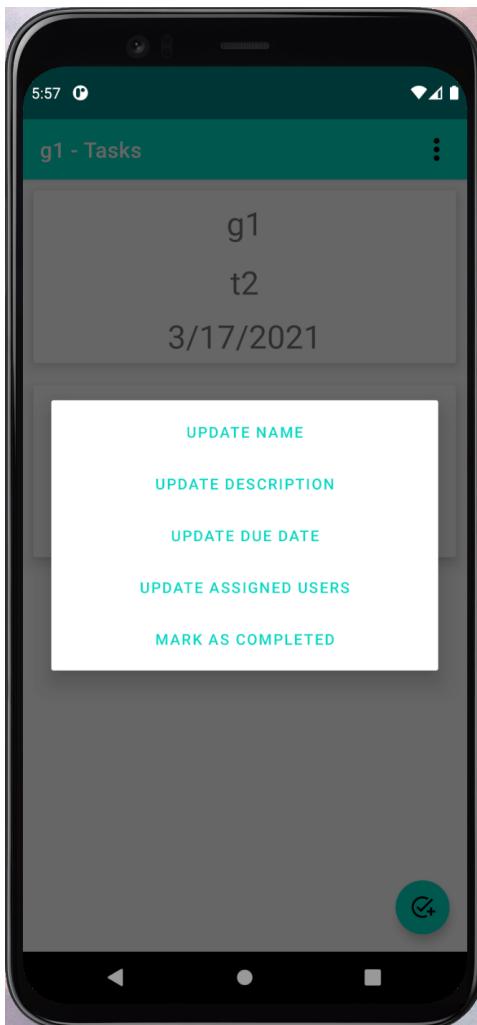


EUC4: Mark Task As Completed

Precondition: This use case requires that the user is a member of the group and the task is not marked as complete.

Actor: User	System: ShareList/LoginMGMT
1. TUCBW user clicking on the Mark Task As Completed button.	0. System displays the Mark Task As Completed button. *2. System displays a message "The task has been updated successfully".
3. TUCEW the user seeing the task as crossed off.	

Postcondition: The task is marked as completed, and its status updated in the database.

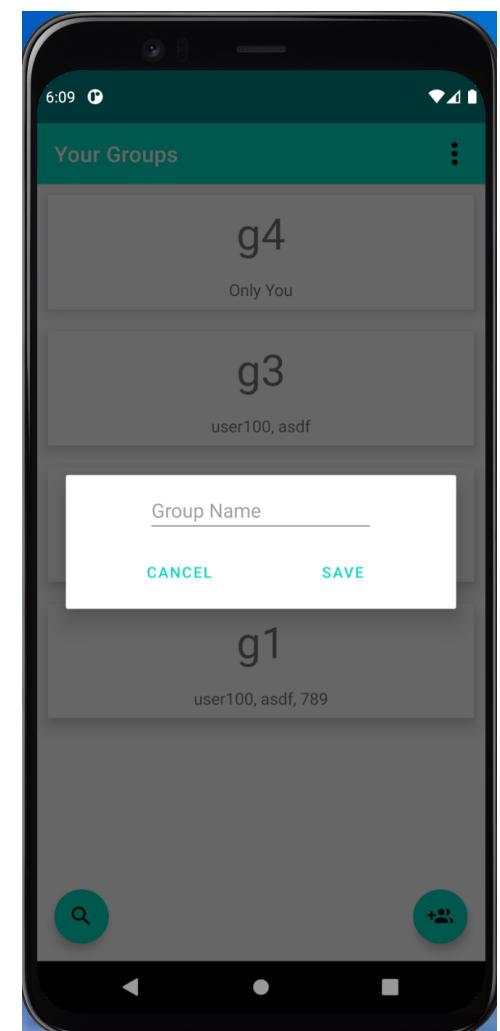
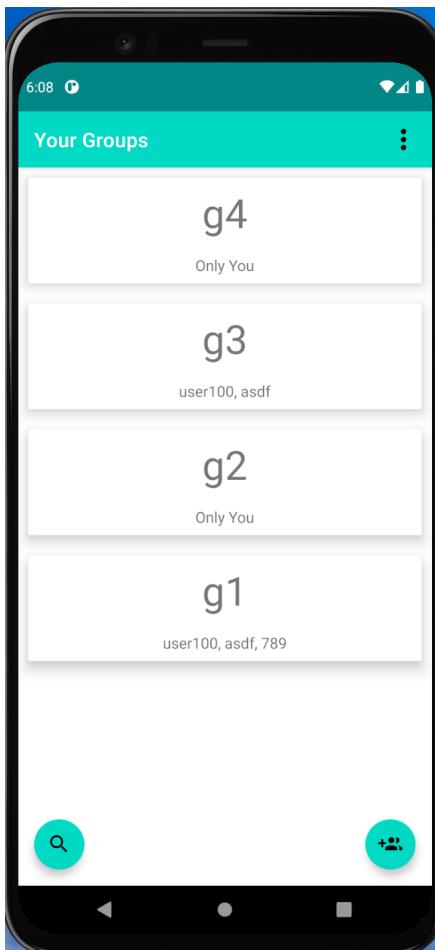


EUC5: Create Group

Precondition: This use case requires that the user is logged in to the ShareList App, and is seeing the 'Create Group' activity.

Actor: User	System: ShareList App
1. TUCBW user clicking on the Create Group button.	0. System displays the Create Group activity.
3. The user fills in the text field and clicks the save button.	2. System displays text field to enter group name.
5. TUCEW the user sees a confirmation "The group has been created".	*4. System checks for errors and processes the save request.

Postcondition: The group is created, stored in the database, and available to be acted upon immediately.

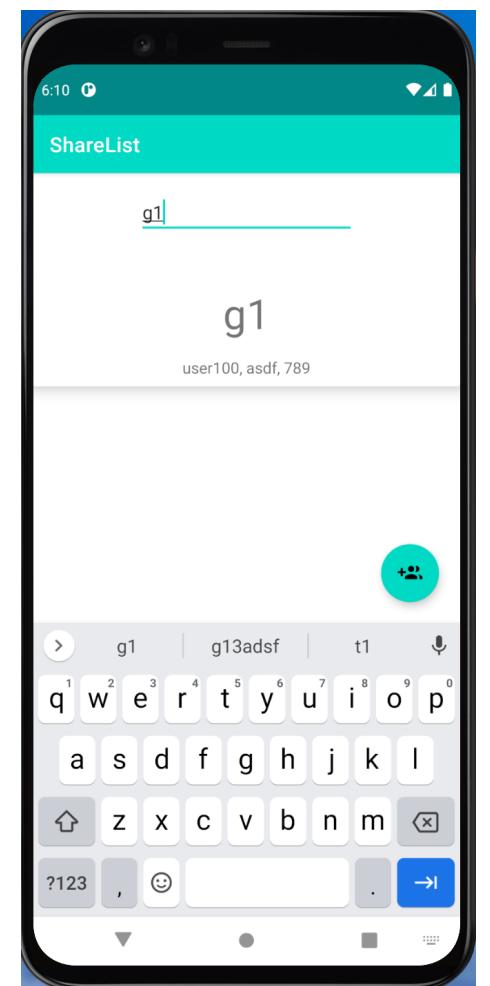
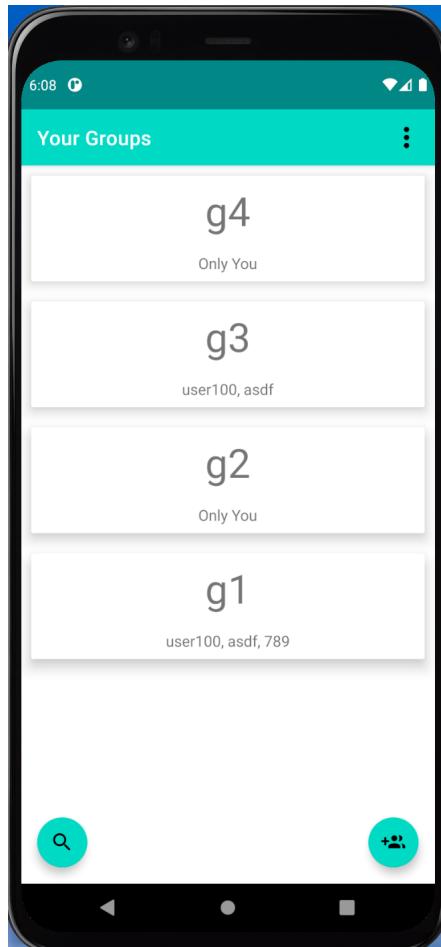


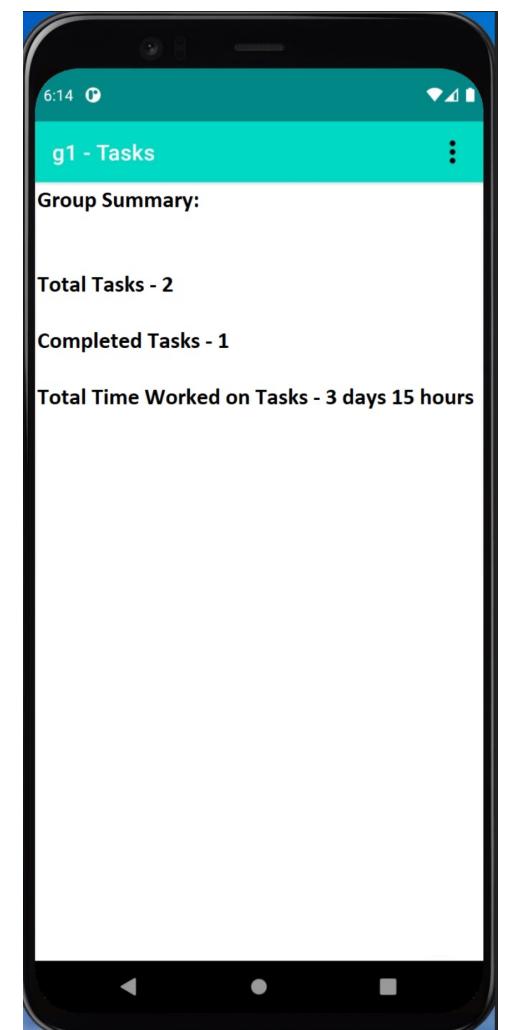
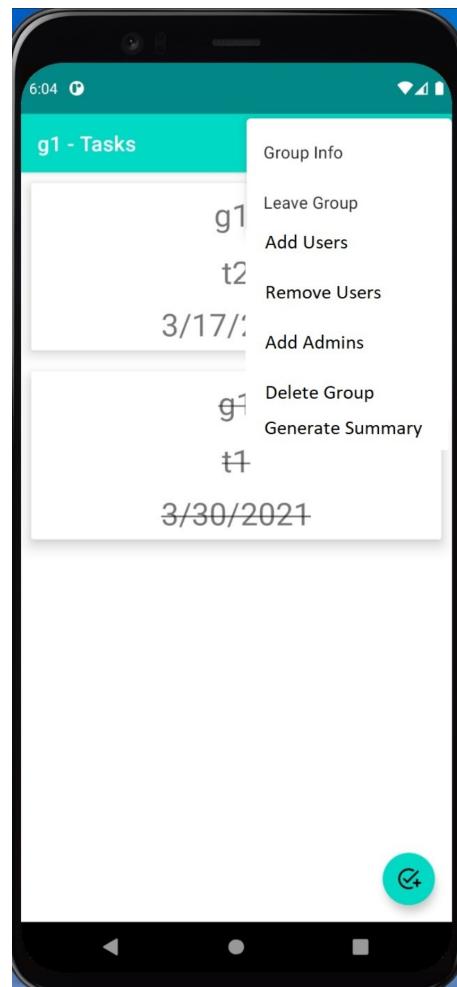
EUC6: Search By Keywords

Precondition: This use case requires that the user is logged into the app.

Actor: User	System: ShareList/LoginMGMT
1. TUCBW user clicks on the Search button and enters the search keyword.	0. System displays the Search button. 2. System displays search the result to the user
3. TUCEW user sees the search results.	

Postcondition: The search result is visible to the user on the app.





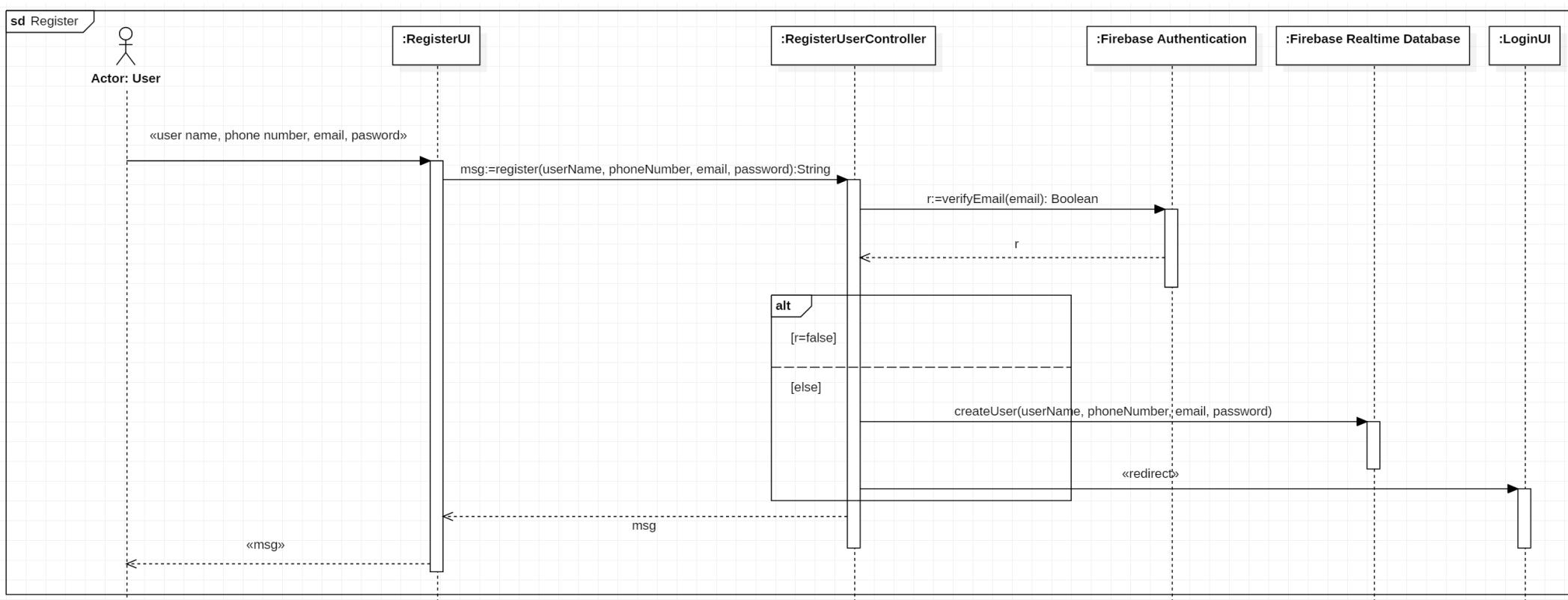
EUC7: Generate Summary

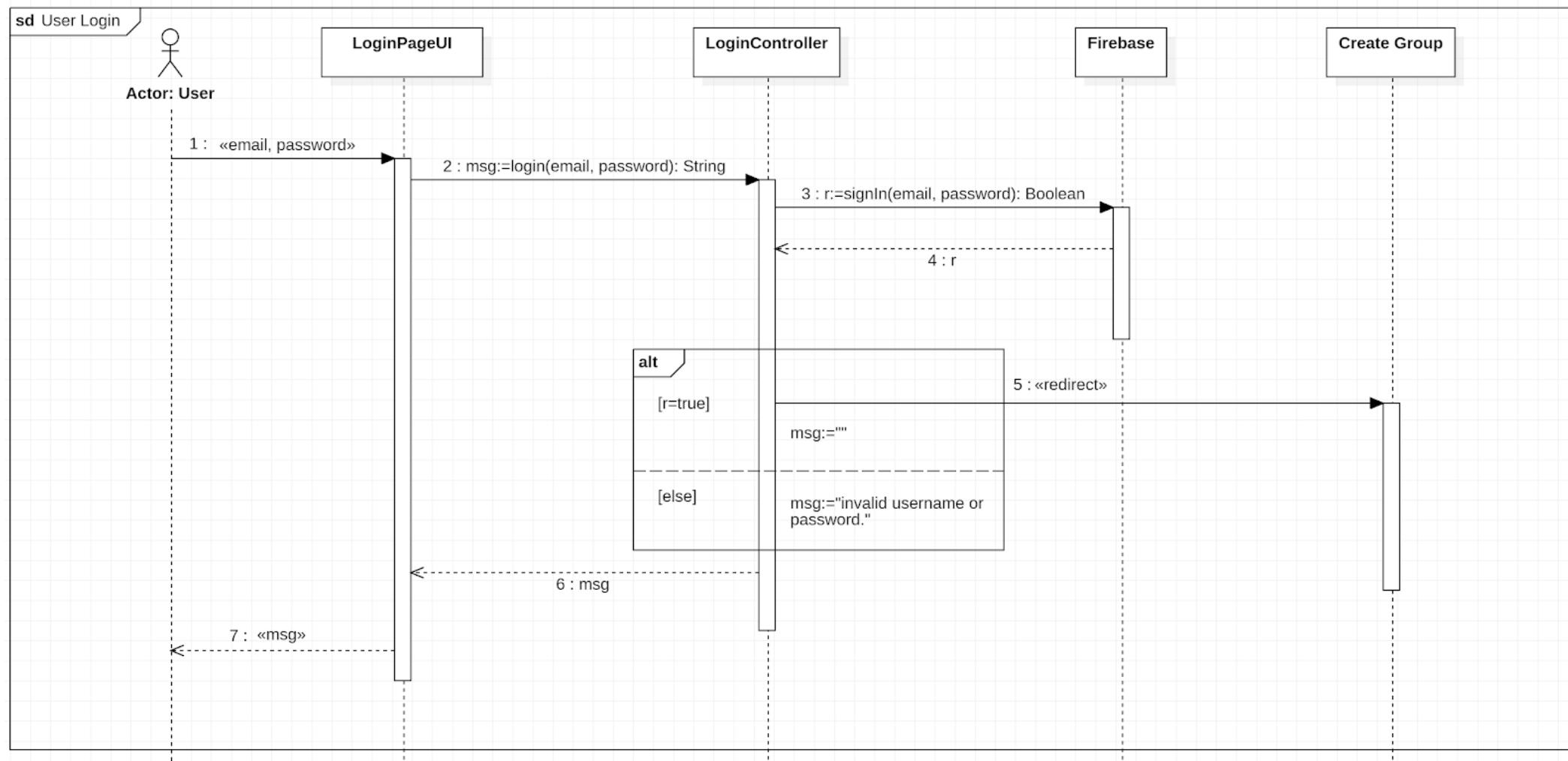
Precondition: This use case requires that the user is logged in and is a member of the particular group.

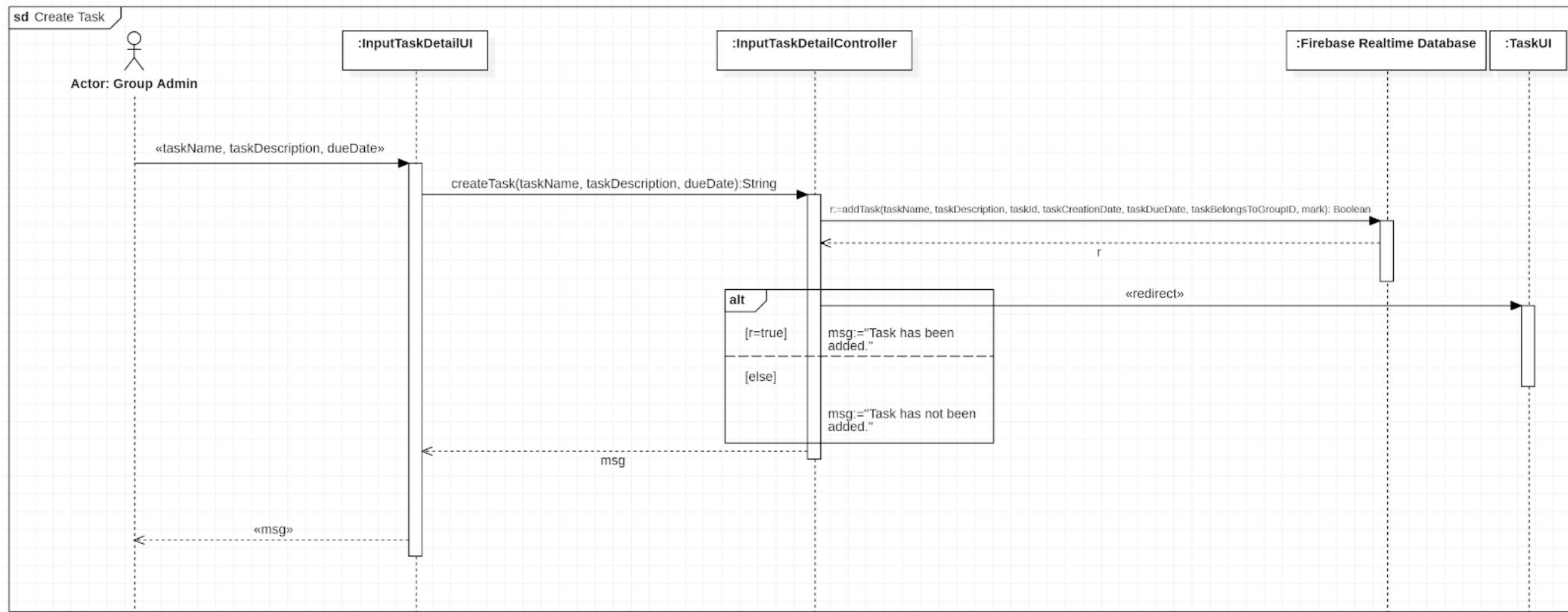
Actor: User	System: ShareList/LoginMGMT
1. TUCBW user clicking on the Generate Summary button.	0. System displays the Generate Summary button.
3. TUCEW the summary of tasks and reports being displayed to the user.	2. System fetch the summary of the tasks and reports.

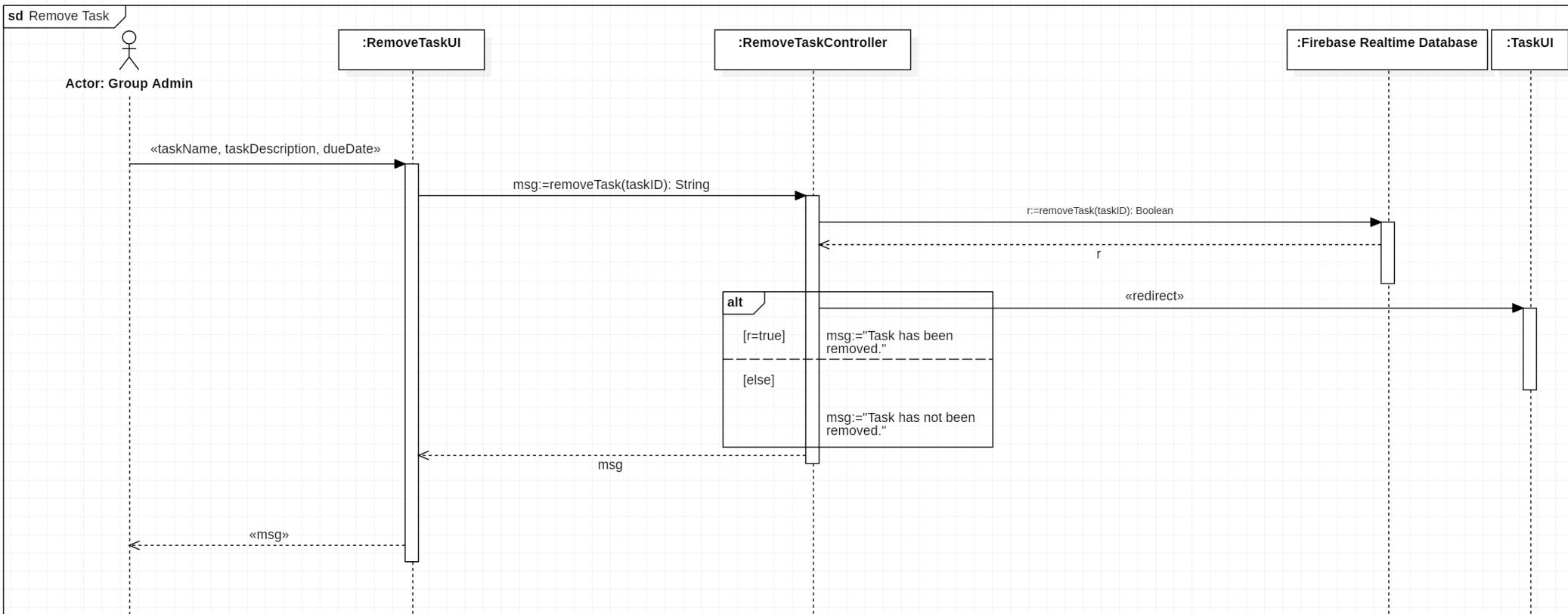
Postcondition: The Summary of the particular group is displayed to the user.

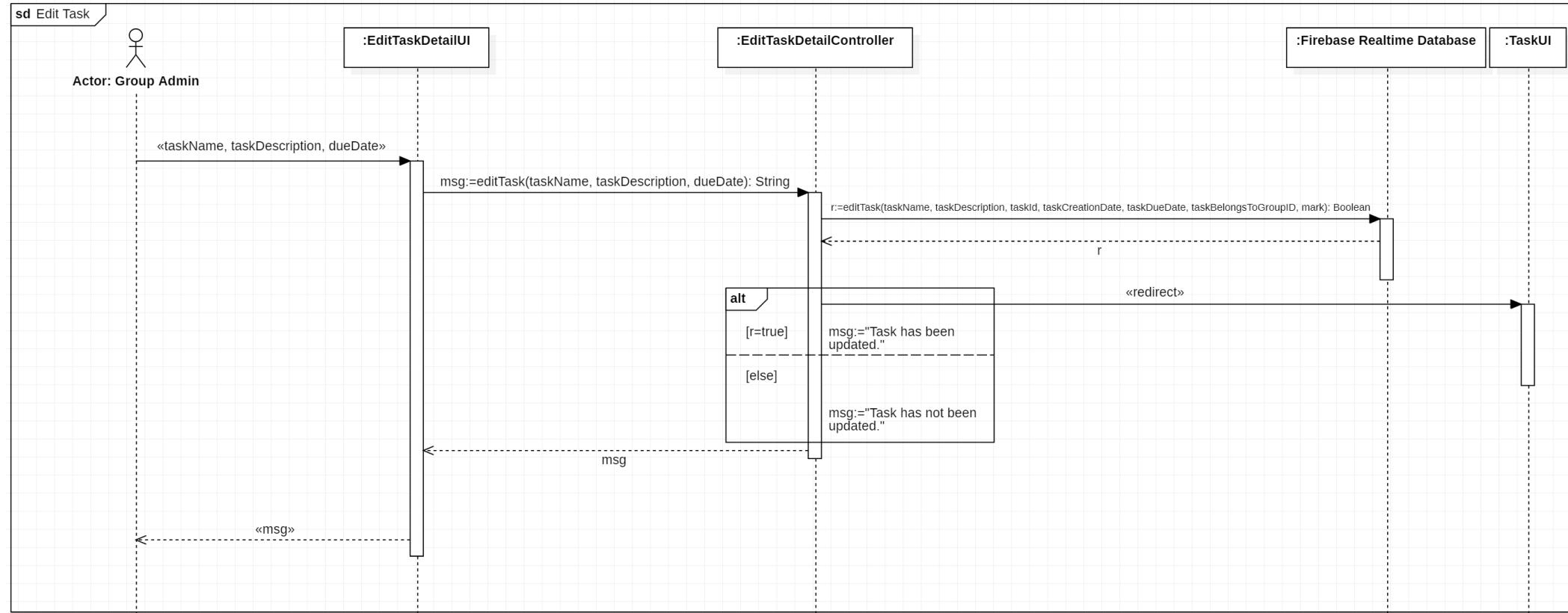
Design Sequence Diagrams

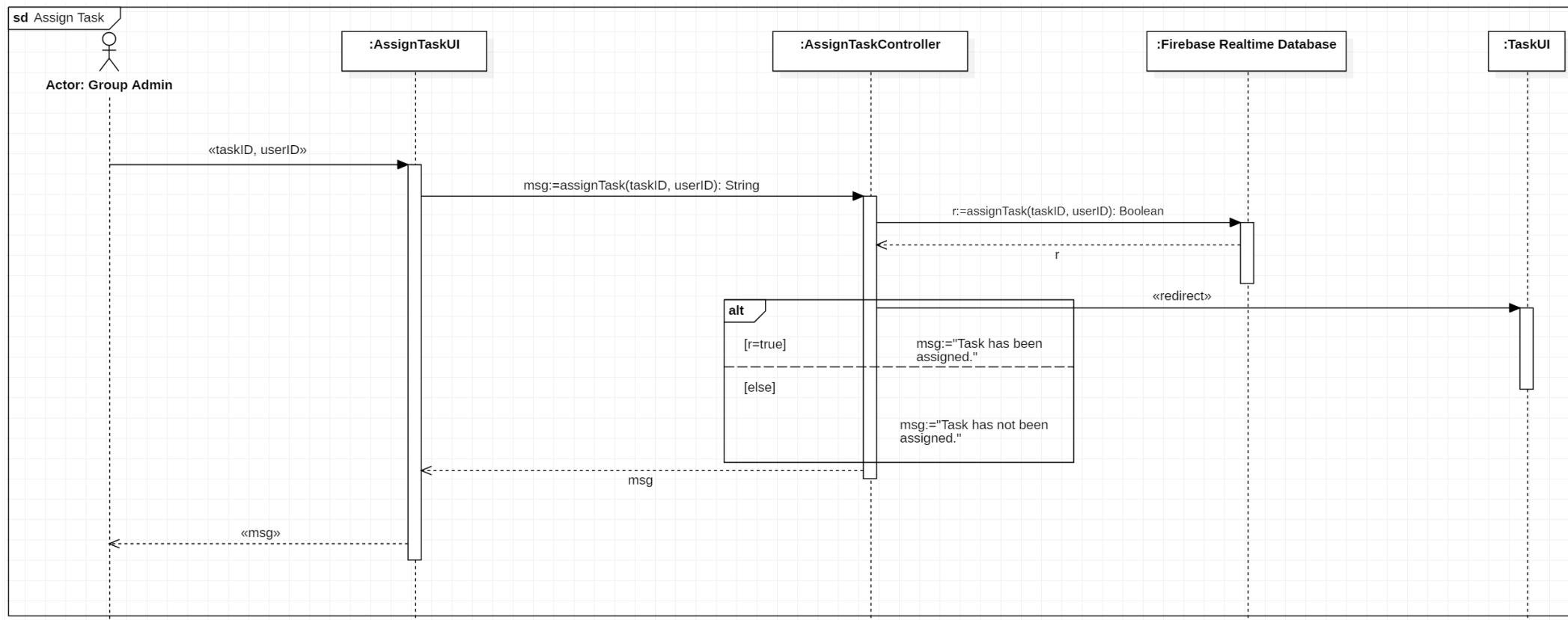


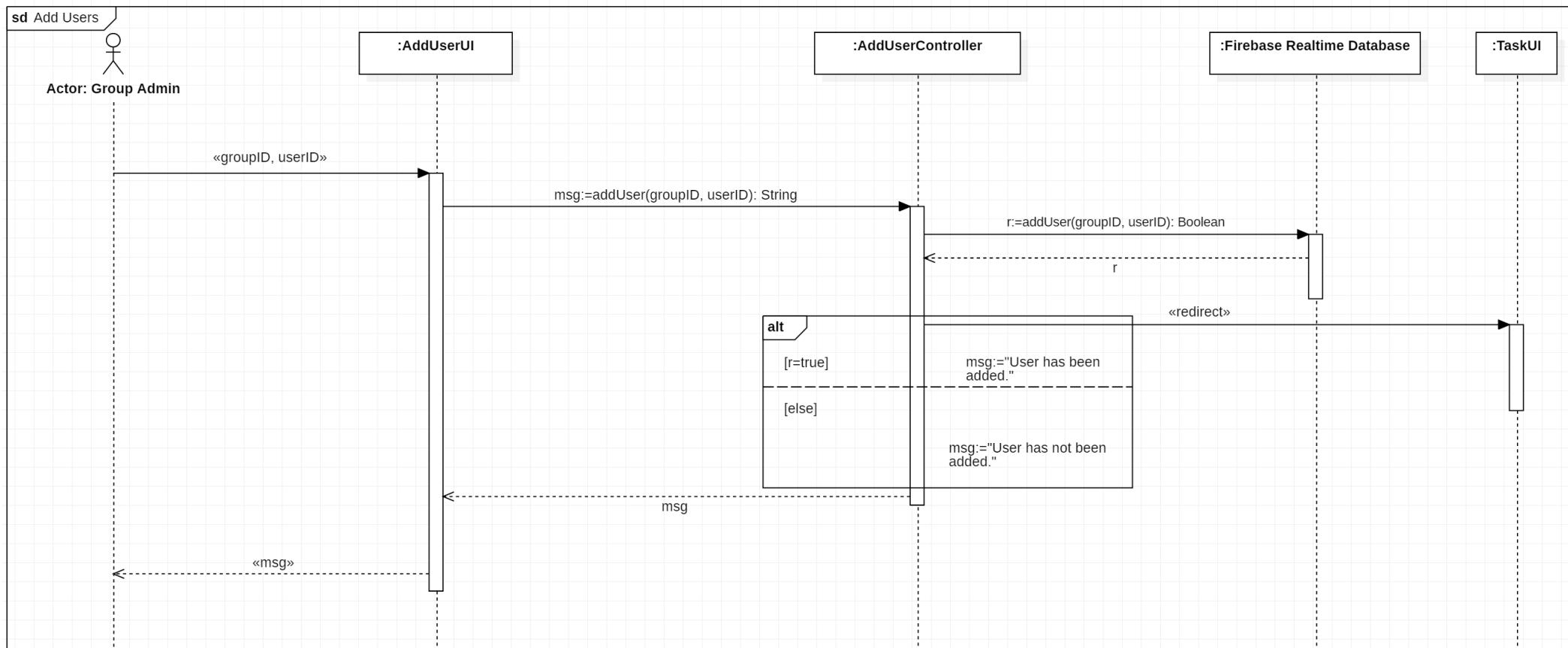


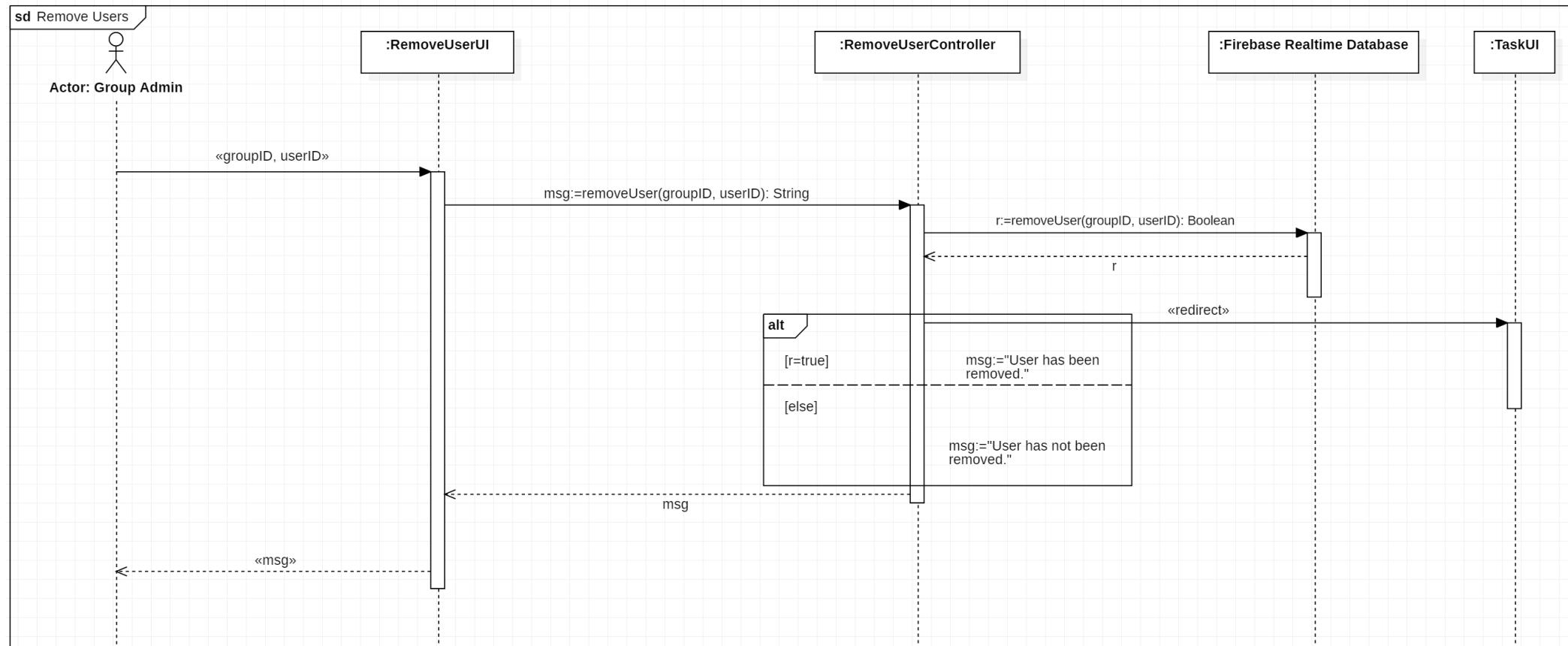


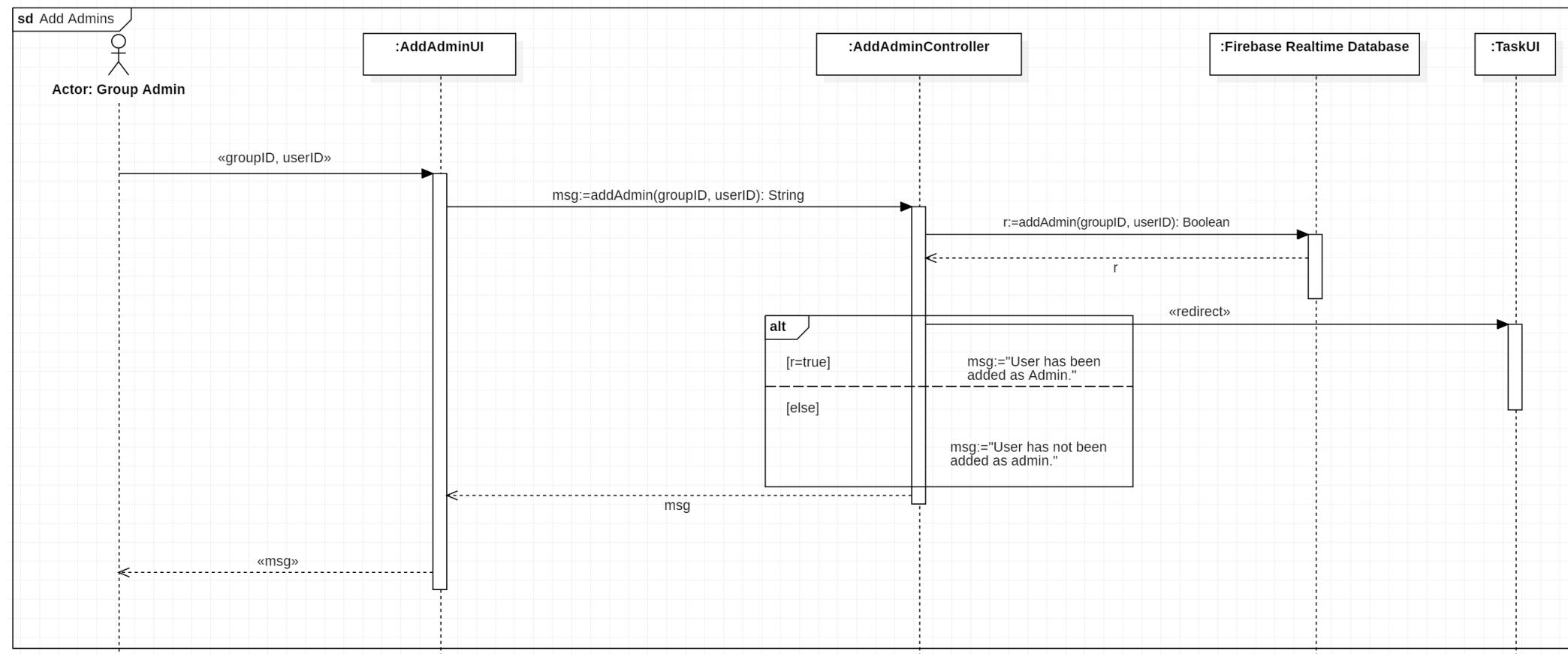


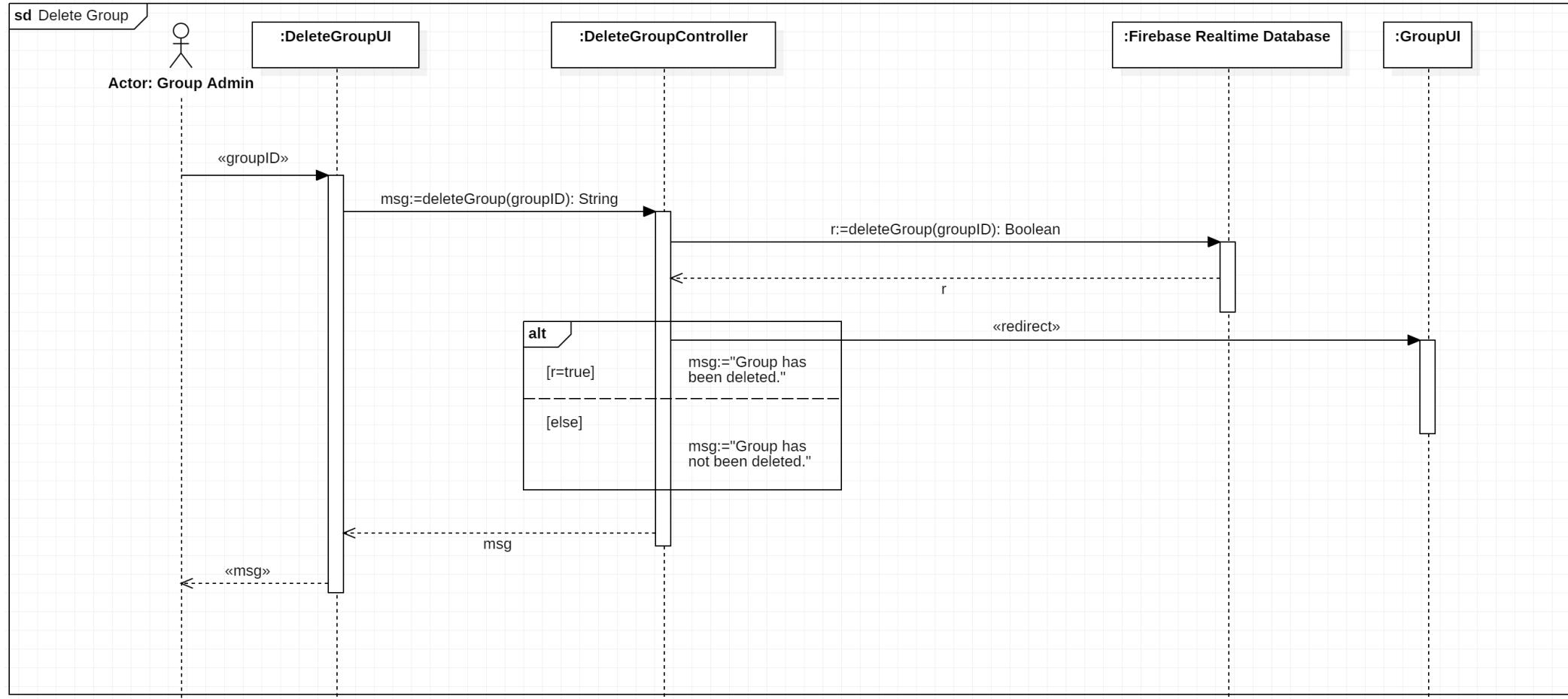


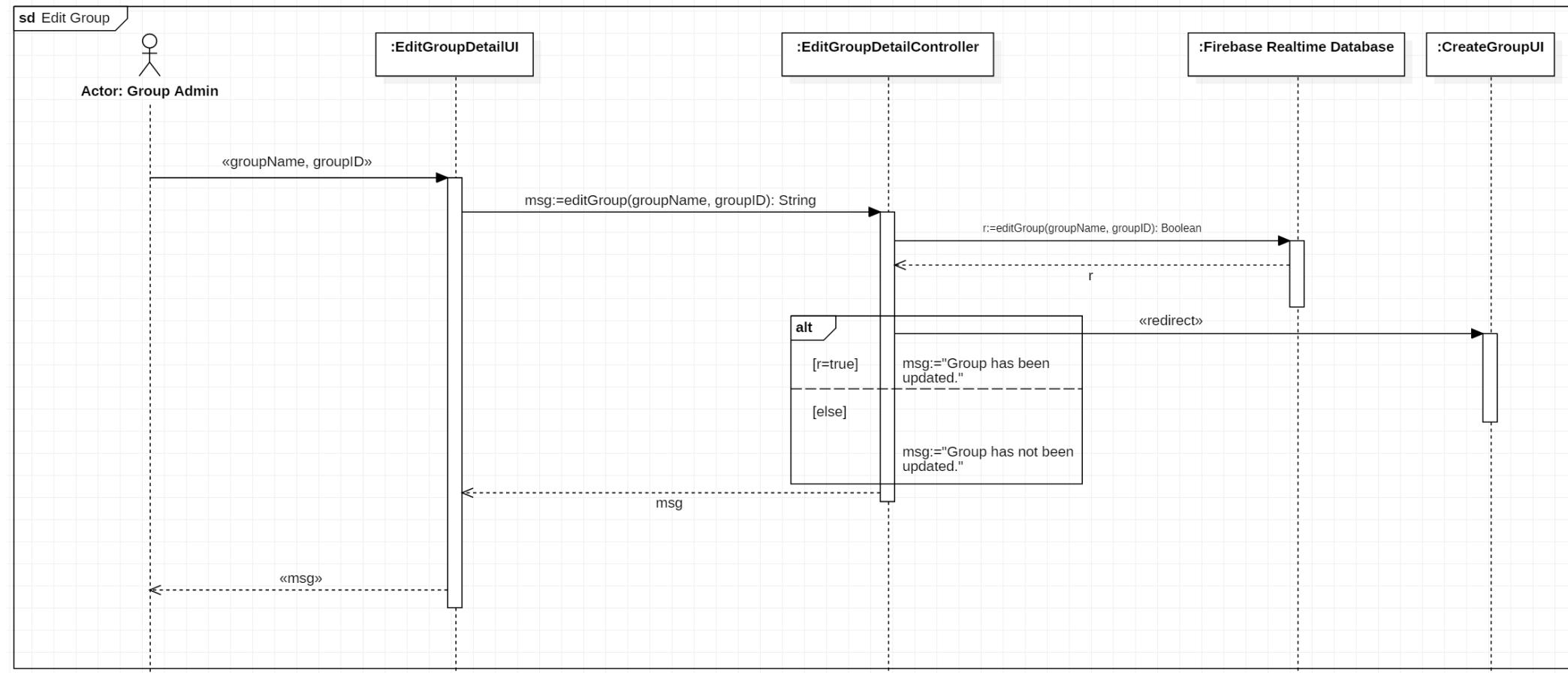


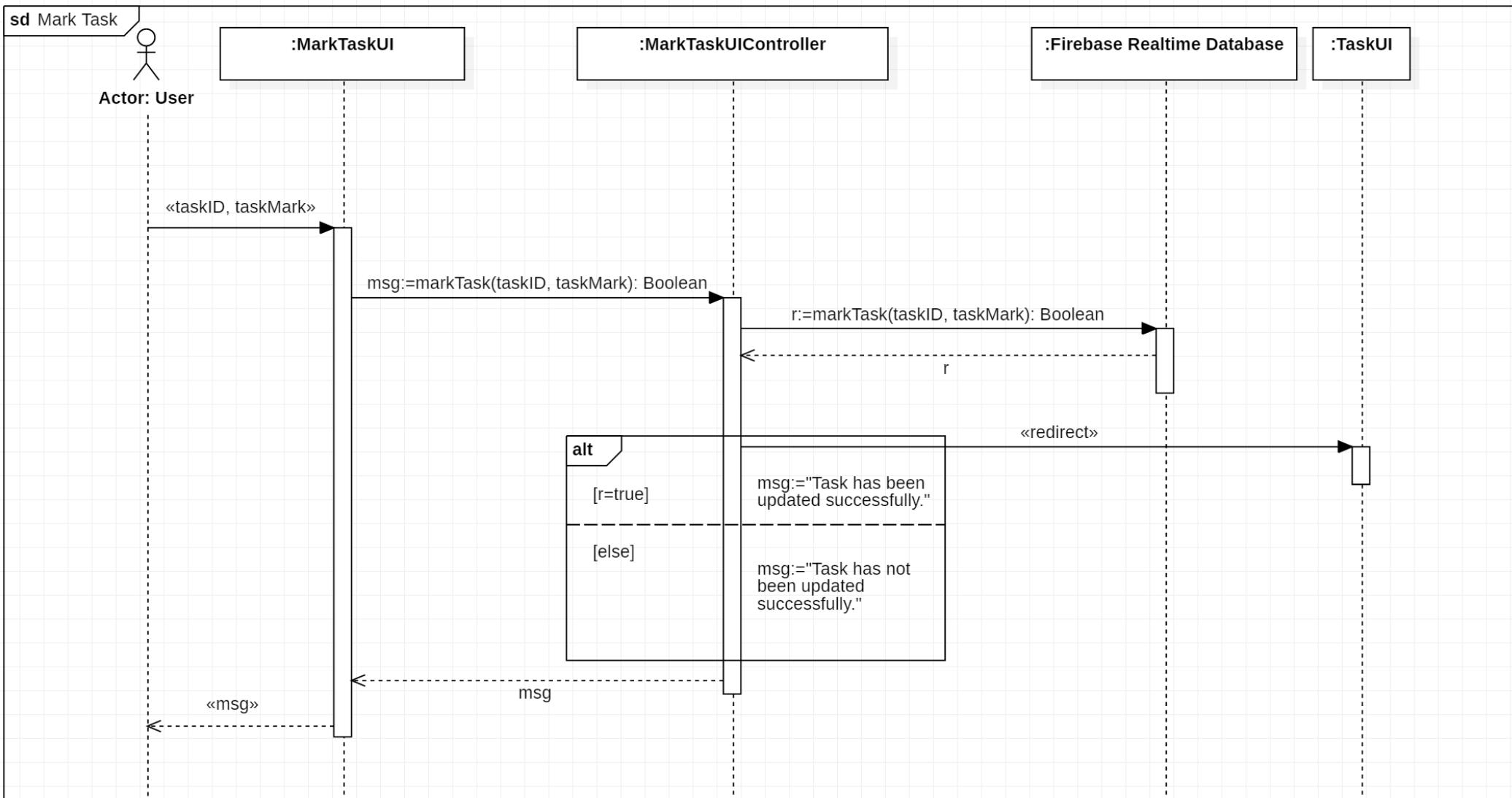


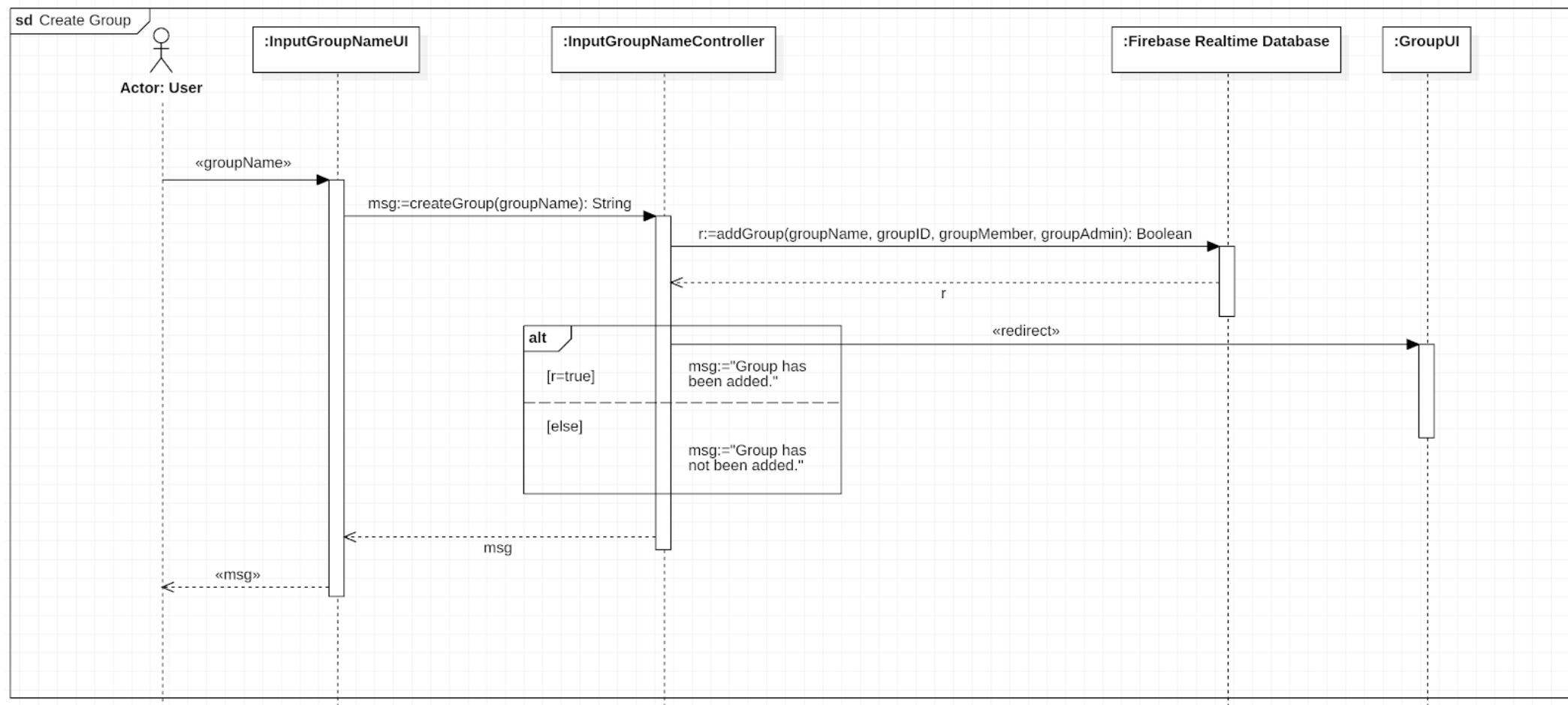




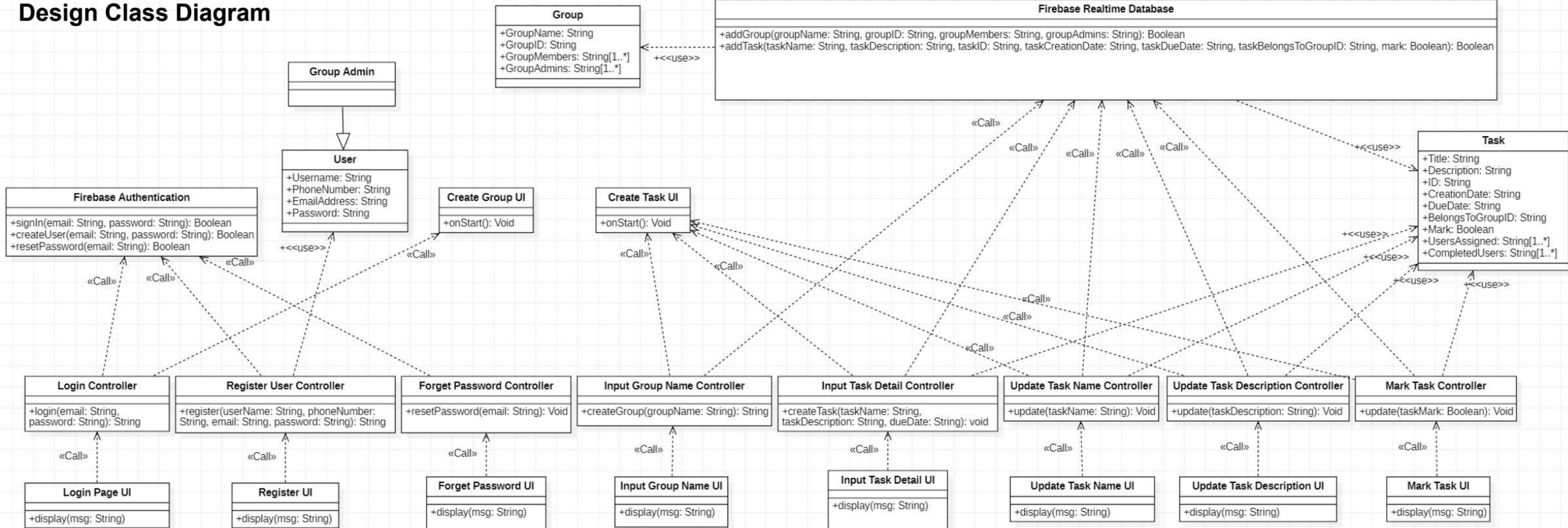








Design Class Diagram



Task List

Assigned to...	Iteration 2	Iteration 3	Use Case
Mohammed & Anum	Add tasks.		2.1
		Remove tasks.	2.2
Yanzhi & Yu	Register.		1.1
	Login.		1.2
Mohammed & Anum	Manage task.		2
	Edit tasks.		2.3
Hannan	Mark task as completed.		4
	Create groups.		5
	Search by keywords.		6
		Generate summary.	7
Yanzhi & Yu	Log Off.		1.3
		Reset password.	1.4
Mohammed & Anum	Assign tasks.		2.4
	Manage group.		3
	Add users.		3.1
	Remove users.		3.2
		Add admins.	3.3
		Delete groups.	3.4
		Edit groups.	3.5