Deliverable 3

2. Team Name

Lifesaver Engineers

3. Project Name

VitalTracker: Smart Location Tracking Device

4. Names and IDs

Patrik Prenga n01428752, Michael Carinci n01480052, Jason Macdonald n01246828, Nicholas Rafuse n01440073

5. Table of Contents

6. Project Scope:

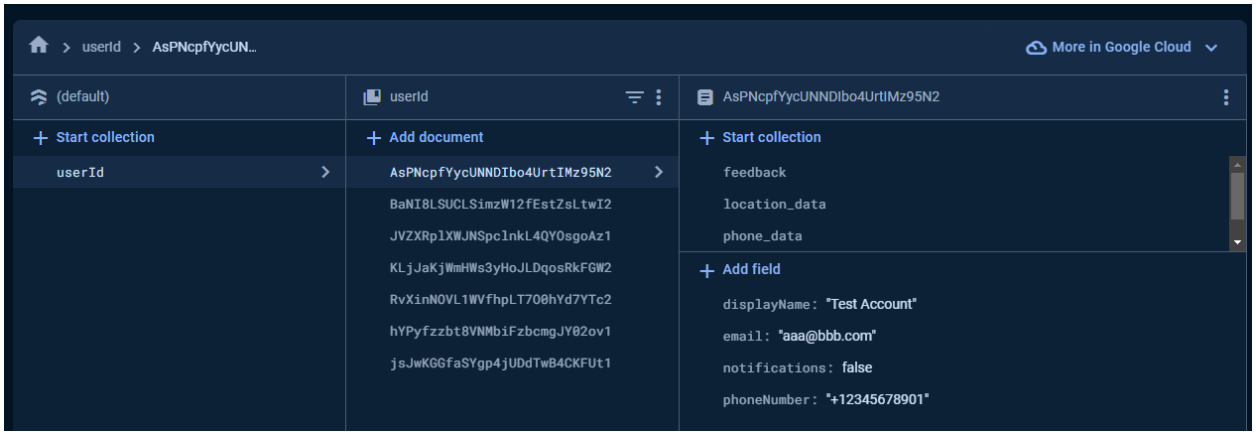
Development of the "Vital Tracker" Android application, designed primarily to aid users in monitoring vital statistics, tracking location, and detecting potential falls. The application integrates these core functionalities seamlessly to provide users with peace of mind regarding their safety and well-being.

7 & 8. Member Info and Participation

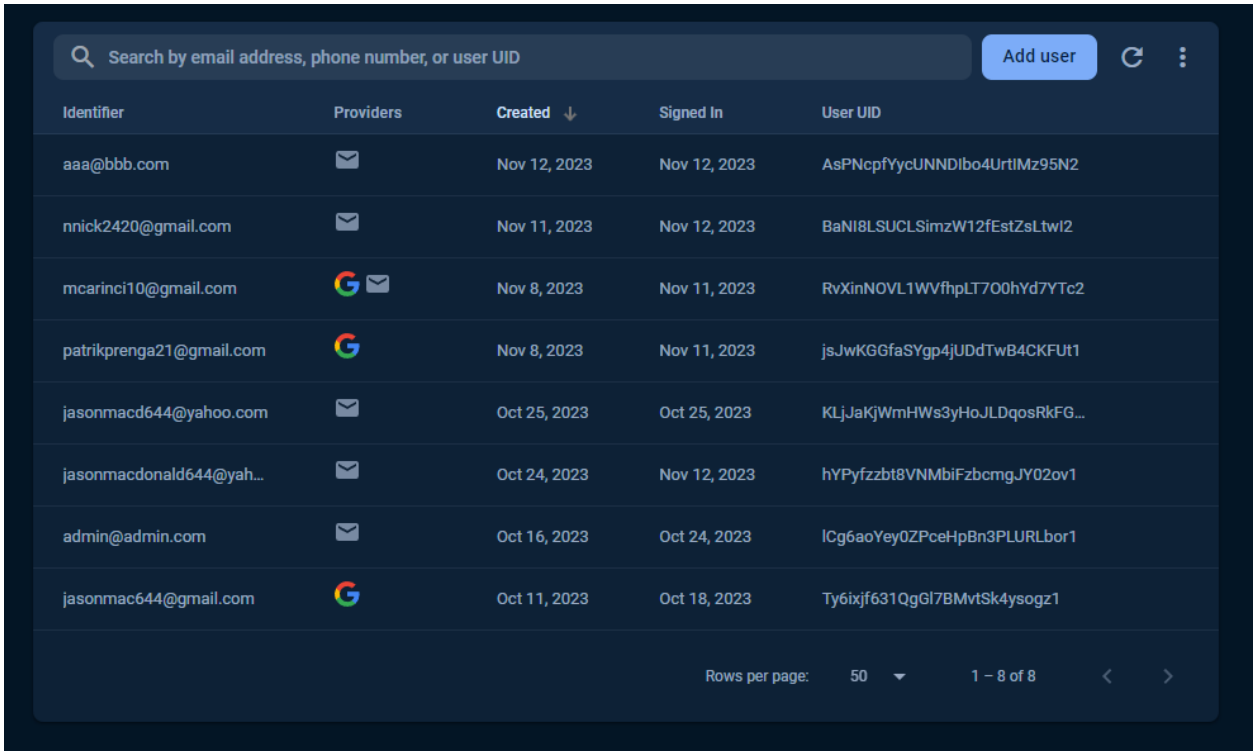
NAME	ID	SIGNATURE	EFFORT
Patrik Prenga	n01428752	Patrik Prenga	100%
Michael Carinci	n01480052	Michael Carinci	100%
Jason Macdonald	n01246828	Jason Macdonald	100%
Nicholas Rafuse	n01440073	Nicholas Rafuse	100%

9 & 10. Github Link
https://github.com/MichaelCarinci0052/LifesaverEngineersVitalTracker.git

11 & 12. Test Account



13. User Authentication



17. Sprint goals:

- Design a more simple and clean UI across all screens
- Create a Feedback screen that stores information into the database
- Redesign home screen to be more user-friendly
- Make the containers in the home screen clickable
- Add landscape layouts for screens
- Update GPS screen to record location and save it
- Update Vitals and Device screen with new data
- Redesign a new login page with email login, and create a registration page
- Implement both login and registration to store in the database, accurately creating the account
- Change the top menu and add more screens

18 - 22. Sprint Dashboard:
All details for new sprint 3 tasks:
Story 1. User Account Management: 3 new tasks added

Story 1 :User Account Management

Task	Text	Owner	Due Date	Status
Task 1	Design and implement a user account screen that displays user details.	MC	~~Oct 7~~	Done
Task 2	Implement functionality to change the username in the shared preferences.		~~Oct 8~~	Done
Task 3	Display the updated username in the HomeFragment.		~~Oct 8~~	Done
Task 4	Add validations for the password field to ensure the user enters a valid password		~~Oct 8~~	Done
Task 5	Implement option to change the password	MC	~~Oct 10~~	Done
Task 6	Create functional login and register pages ; link with database	JM	~~Nov 8~~	Done
Task 7	Display proper username and email on AccountFragment	MC	~~Nov 9~~	Done
Task 8	Add option to log out of account	JM	~~Nov 10~~	Done
+ Add task				

Story 2. Vitals Monitoring: 2 new tasks added

Story 2: Vitals Monitoring

Task	Text	Owner	Due Date	Status
Task 1	Design the UI for the Vitals Fragment with fields for Heart Rate, Oxygen Level, and Body ...	JM	~~Oct 9~~	Done
Task 2	Integrate sensors/APIs (simulated)	JM	~~Oct 9~~	Done
Task 3	Display the fetched data in the HomeFragment.	JM	~~Oct 9~~	Done
Task 4	Implement error handling for cases when the vitals data cannot be fetched.	JM	~~Oct 9~~	Done
Task 5	Add image and enhance UI.	JM	~~Oct 9~~	Done
Task 6	Update UI for Vitals Fragment	JM	~~Nov 12~~	Done
Task 7	Implement Vitals graph that can show history	JM	~~Nov 12~~	Done
+ Add task				

Story 3. Device Management: 1 new task added

Story 3: Device Management

Task	Text	Owner	Due Date	Status
Task 1	Design the UI for the DeviceFragment with a button to toggle the device state and a fiel...		~~Oct 10~~	Done
Task 2	Implement the functionality to toggle the device state (On/Off).		~~Oct 10~~	Done
Task 3	Fetch and display the current battery life of the connected device.(simulated)		~~Oct 10~~	Done
Task 4	Implement error handling for cases when the device is not connected or battery informa...		~~Oct 10~~	Done
Task 5	Provide user feedback, such as a toast message or a dialog, when the device is successf...		~~Oct 10~~	Done
Task 6	Store device into database		~~Nov 12~~	Done
+ Add task				

Story 4. Location Tracking: 2 new tasks added

Story 4: Location Tracking

Task	Text	Owner	Due Date	Status
Task 1	Design the UI for the GPS Fragment to display the current location.		~~Oct 8~~	Done
Task 2	Integrate the device's GPS functionality to fetch real-time location data.		~~Oct 8~~	Done
Task 3	Display the fetched location data in the HomeFragment.		~~Oct 9~~	Done
Task 4	Implement error handling for cases when GPS is turned off or location cannot be determ...	JM	~~Oct 9~~	Done
Task 5	Provide user feedback, such as a toast message or a dialog for permissions	JM	~~Oct 9~~	Done
Task 6	Store GPS location to database		~~Nov 12~~	Done
Task 7	Setup GPS history storing every hour		~~Nov 12~~	Done
+ Add task				

Story 5. App Settings Management: 2 new tasks added

Story 5: App Settings Management

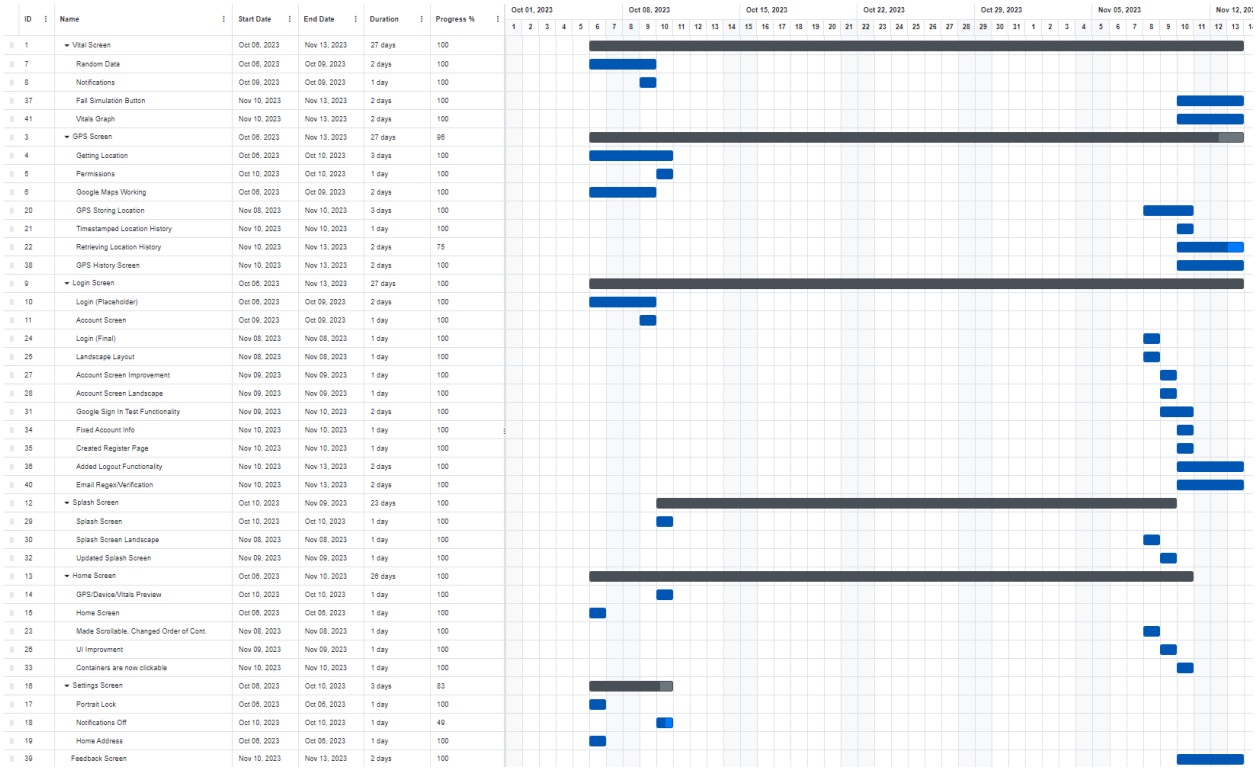
Task	Text	Owner	Due Date	Status
Task 1	Design and implement a settings screen with options like "Location", "Lock Orientation", ...	MC	~~Oct 8~~	Done
Task 2	Implement functionality to save and retrieve the user's preferred settings.	MC	~~Oct 8~~	Done
Task 3	Add a push notification toggle switch and integrate it with the device's notification setti...	JM	~~Oct 10~~	Done
Task 4	Implement a switch to lock the app's screen orientation based on user preference.	MC	~~Oct 9~~	Done
Task 5	Implement a "Restore Defaults" button that resets all settings to their default values.	MC	~~Oct 10~~	Done
Task 6	Update configuration screen to include new data for email verification status	JM	~~Nov 9~~	Done
Task 7	Update UI for Settings Fragment and ConfigurationFragment and create new top menu	MC	~~Nov 12~~	Done

Story 6. Home Screen Display: new story added

Story 6: Home Screen Display

Task	Text	Owner	Due Date	Status
Task 1	Design the UI for the HomeFragment with 3 mini containers showing the screen.		~~Nov 9~~	Done
Task 2	Add text to display the user's stored name at the top of the page.		~~Nov 9~~	Done
Task 3	Implement clickable containers that take you to their respective screens.		~~Nov 10~~	Done
Task ...	Implement the ability to scroll to increase screen size.		~~Nov 10~~	Done
Task 5	Implement a "Simulate Fall Detection" button.		~~Nov 11~~	Done
+ Add task				

24 - 28. Gantt Chart:



ID	Name	Start Date	End Date	Duration	Progress %
1	Vital Screen	Oct 06, 2023	Nov 13, 2023	27 days	100
7	Random Data	Oct 06, 2023	Oct 09, 2023	2 days	100
8	Notifications	Oct 09, 2023	Oct 09, 2023	1 day	100
37	Fall Simulation Button	Nov 10, 2023	Nov 13, 2023	2 days	100
41	Vitals Graph	Nov 10, 2023	Nov 13, 2023	2 days	100
3	GPS Screen	Oct 06, 2023	Nov 13, 2023	27 days	96
4	Getting Location	Oct 06, 2023	Oct 10, 2023	3 days	100
5	Permissions	Oct 10, 2023	Oct 10, 2023	1 day	100
6	Google Maps Working	Oct 06, 2023	Oct 09, 2023	2 days	100
20	GPS Storing Location	Nov 08, 2023	Nov 10, 2023	3 days	100
21	Timestamped Location History	Nov 10, 2023	Nov 10, 2023	1 day	100
22	Retrieving Location History	Nov 10, 2023	Nov 13, 2023	2 days	75
38	GPS History Screen	Nov 10, 2023	Nov 13, 2023	2 days	100
9	Login Screen	Oct 06, 2023	Nov 13, 2023	27 days	100
10	Login (Placeholder)	Oct 06, 2023	Oct 09, 2023	2 days	100
11	Account Screen	Oct 09, 2023	Oct 09, 2023	1 day	100
24	Login (Final)	Nov 08, 2023	Nov 08, 2023	1 day	100
25	Landscape Layout	Nov 08, 2023	Nov 08, 2023	1 day	100
27	Account Screen Improvement	Nov 09, 2023	Nov 09, 2023	1 day	100
28	Account Screen Landscape	Nov 09, 2023	Nov 09, 2023	1 day	100
31	Google Sign In Test Functionality	Nov 09, 2023	Nov 10, 2023	2 days	100
34	Fixed Account Info	Nov 10, 2023	Nov 10, 2023	1 day	100
35	Created Register Page	Nov 10, 2023	Nov 10, 2023	1 day	100
36	Added Logout Functionality	Nov 10, 2023	Nov 13, 2023	2 days	100
40	Email Regex/Verification	Nov 10, 2023	Nov 13, 2023	2 days	100
12	Splash Screen	Oct 10, 2023	Nov 09, 2023	23 days	100
29	Splash Screen	Oct 10, 2023	Oct 10, 2023	1 day	100
30	Splash Screen Landscape	Nov 08, 2023	Nov 08, 2023	1 day	100
32	Updated Splash Screen	Nov 09, 2023	Nov 09, 2023	1 day	100
13	Home Screen	Oct 06, 2023	Nov 10, 2023	26 days	100
14	GPS/Device/Vitals Preview	Oct 10, 2023	Oct 10, 2023	1 day	100
15	Home Screen	Oct 06, 2023	Oct 06, 2023	1 day	100
23	Made Scrollable, Changed Order of Cont.	Nov 08, 2023	Nov 08, 2023	1 day	100
26	UI Improvment	Nov 09, 2023	Nov 09, 2023	1 day	100
33	Containers are now clickable	Nov 10, 2023	Nov 10, 2023	1 day	100
16	Settings Screen	Oct 06, 2023	Oct 10, 2023	3 days	83
17	Portrait Lock	Oct 06, 2023	Oct 06, 2023	1 day	100
18	Notifications Off	Oct 10, 2023	Oct 10, 2023	1 day	49
19	Home Address	Oct 06, 2023	Oct 06, 2023	1 day	100
39	Feedback Screen	Nov 10, 2023	Nov 13, 2023	2 days	100

29 - 31. Daily Standups:

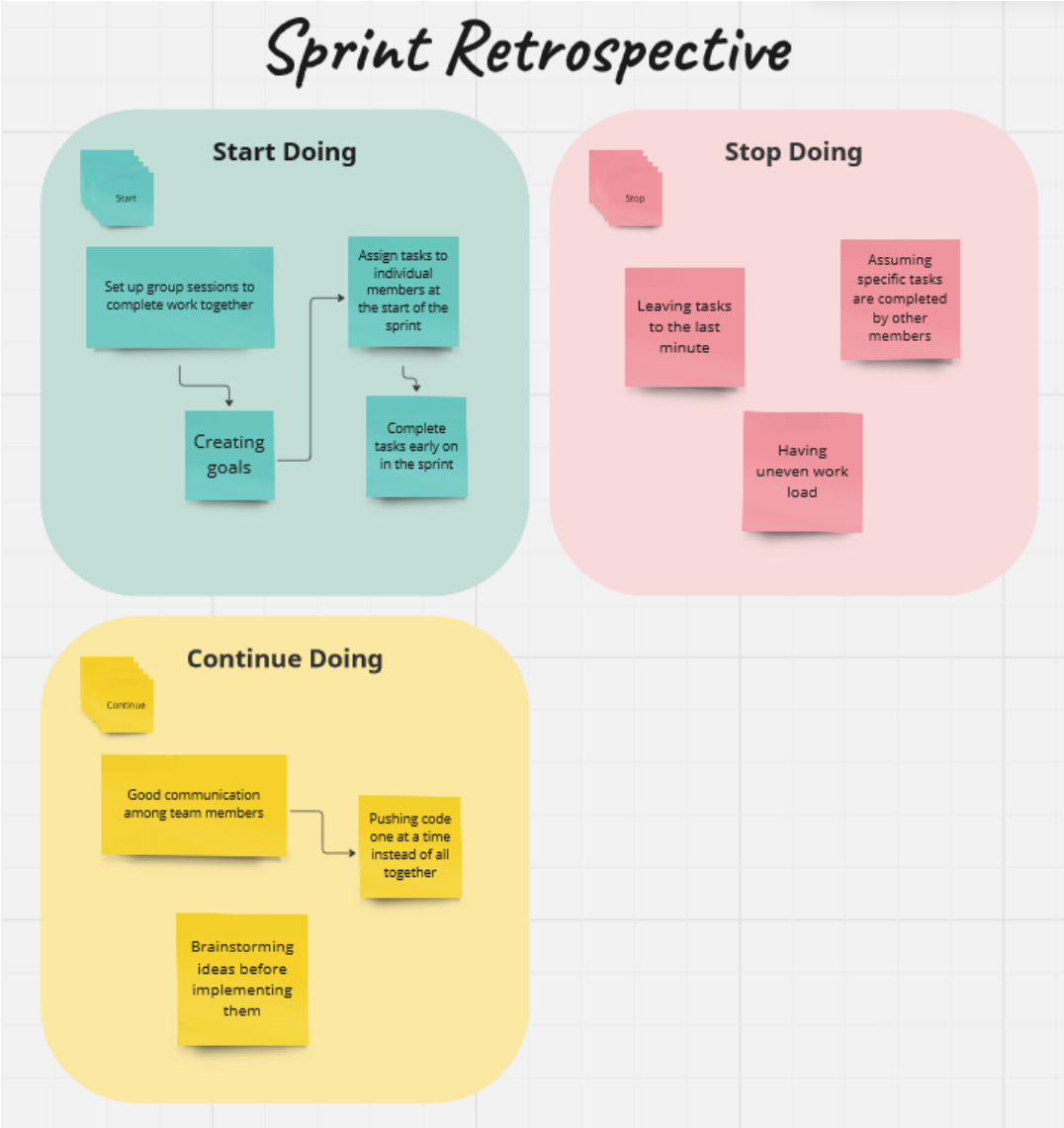
Color Codes:
Patrik, Michael, Jason, Nicholas

Daily Stand-Up	Topic	Date
	• What did you do yesterday? - Made the home fragment scrollable and updated the order of containers in the home page - I edited the landscape layouts for the splash screen and login screen - Updated new UI for login page - Added GPS database location tracking • What did you do today? - Updated the UI of the home screen - I edited the Account screen and added a landscape layout - Added test functionality for Google sign in and updated splash screen	Nov 9,2023

	- I cleaned up the GPS fragment code and set it to minute updates ● What (if anything) is blocking your progress? - There is an issue with the scroll on the home page - There is nothing blocking my progress today - No issues are blocking my progress - Verification on if location tracking is correctly being stored in DB	
	● What did you do yesterday? - Updated the UI of the home screen - I edited the Account screen and added a landscape layout - Added test functionality for Google sign in and updated splash screen - I cleaned up the GPS fragment code and set it to minute updates ● What did you do today? - Made the containers clickable so that they bring you to their respective screens - I edited the Account page to display correct login info - Updated data config, added a logout button on the account screen and created a register page - Added location history recording to the GPS fragment which updates hourly ● What (if anything) is blocking your progress? - The scroll issue is still persistent - There is nothing blocking my progress today - Issues with account creation on the database - Verification is complete, no issues blocking my progress	Nov 10,2023
	● What did you do yesterday? - Made the containers clickable so that they bring you to their respective screens	Nov 11,2023

	- I edited the Account screen and added a landscape layout - Updated data config, added a logout button on the account screen and created a register page - Added location history recording to the GPS fragment which updates hourly ● What did you do today? - Created button to simulate fall, fixed scroll issue, updated UI - I created a feedback screen and made improvements to UI, including top menu - Email regex and verification, graph on vitals, and data layer - Added a new GPS history screen under top menu and updated some translations ● What (if anything) is blocking your progress? - Fixed all blocking issues - Database linking issues on feedback page - All issues were fixed - GPS history screen may not be correctly showing data	

32. Sprint Retrospective



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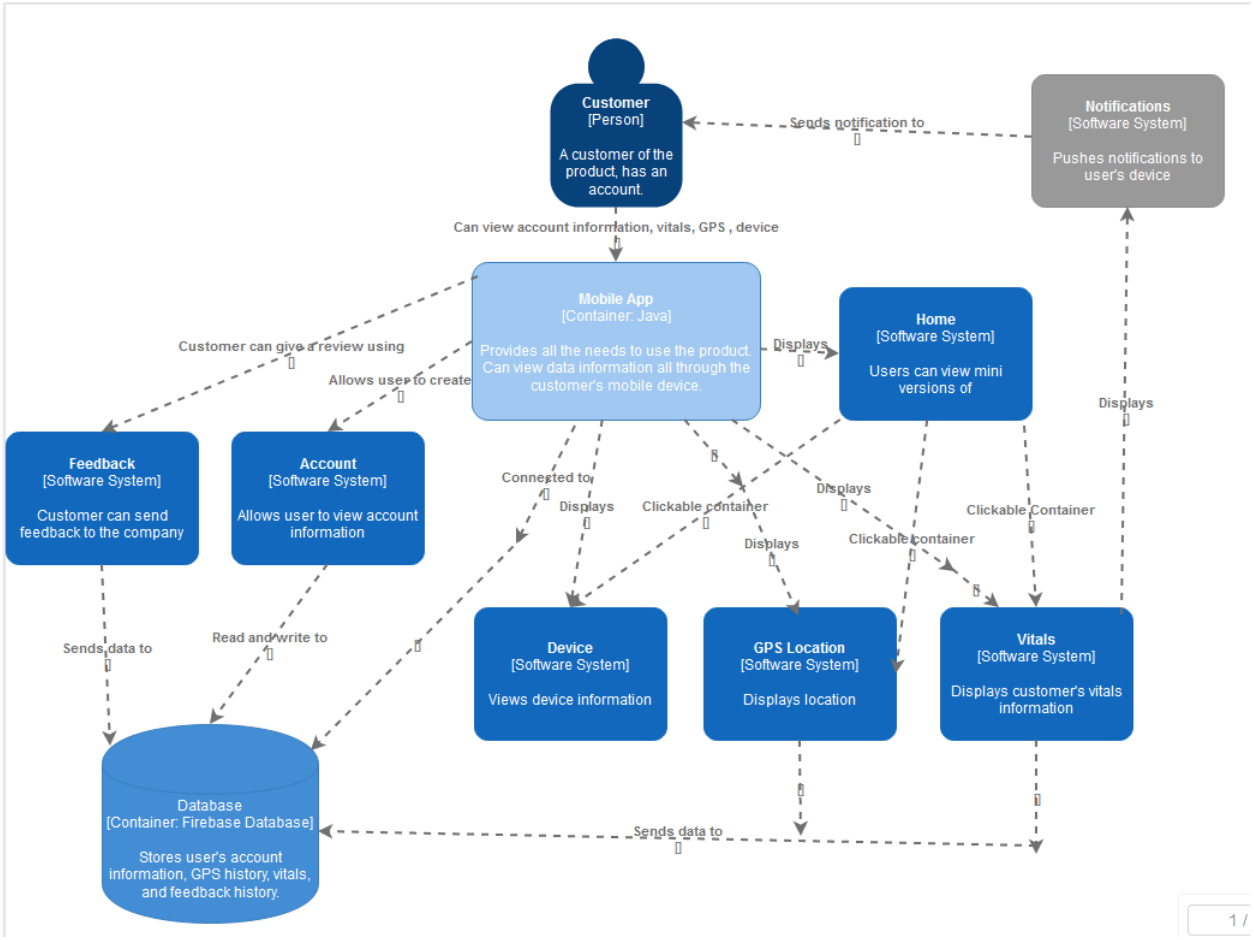


34 & 35. Design Principles and Patterns

Design principle 1: Don't Repeat Yourself (DRY) - We used this principle by creating separate functions that do specific code. Everytime we wanted to use this code, we would call the function, instead of writing the code multiple times.

Code we used it in:

```
if (first.isEmpty() || last.isEmpty() || emailreceive.isEmpty() ||
phoneNumber.isEmpty() || comment.isEmpty()) {
    showToast("Please fill in all fields");
    return;
}
```

```
showToast("Feedback submitted!");
private void showToast(String message) {
    Toast.makeText(getActivity(), message, Toast.LENGTH_LONG).show();
}
```

In this code, a function called showToast was created that displays a toast. This function was called on two separate occasions to display different messages in the toast.

Design principle 2: Single Responsibility: We implemented this principle by creating different functions that all have one responsibility that they have to do. This helps to remove any complex or complicated code.
Code we used it in:

```
private void saveInputToSharedPreferences(String input) {
    SharedPreferences.Editor editor = sharedPreferences.edit();
    editor.putString("userText", input);
    editor.apply();
    String currenthome2 = "Current Home: " + input;
    current.setText(currenthome2);
}
private void updateSwitchText(Switch whichSwitch, boolean isSwitchOn) {
    whichSwitch.setText(isSwitchOn ? "On" : "Off");
}
private void toggleNotifications() {
    NotificationManager notificationManager =
requireActivity().getSystemService(NotificationManager.class);
    if
(notificationManager.getNotificationChannel("VITALS_CHANNEL_ID").getImportance(
) != NotificationManager.IMPORTANCE_NONE) {
notificationManager.getNotificationChannel("VITALS_CHANNEL_ID").setImportance(N
otificationManager.IMPORTANCE_NONE);
    } else {
notificationManager.getNotificationChannel("VITALS_CHANNEL_ID").setImportance(N
otificationManager.IMPORTANCE_DEFAULT);
    }
}
private void saveSwitchState(boolean isChecked) {
    SharedPreferences preferences =
requireActivity().getSharedPreferences(SHARED_PREFERENCES_KEY,
Context.MODE_PRIVATE);
    SharedPreferences.Editor editor = preferences.edit();
    editor.putBoolean(SWITCH_STATE, isChecked);
    editor.apply();
}
private void restoreSwitchState() {
    SharedPreferences preferences =
requireActivity().getSharedPreferences(SHARED_PREFERENCES_KEY,
Context.MODE_PRIVATE);
    boolean switchState = preferences.getBoolean(SWITCH_STATE, true);
    notifswitch.setChecked(switchState); }
```

In this code, we created separate functions that each have a specific responsibility, such as saving the input, updating text, toggle notifications, saving switch state, and restoring switch state.

36. Additional features / functionalities that we added since deliverable 2:

- Updated UI across all screens
- Updated Login page that allows Google sign in
- Created a Registration page that allows account creation, stores to the database
- Updated Home screen to send user to other screens when mini versions are clicked, added button to simulate fall detection
- Updated Account screen to display the user's account name and email, as well as a functional logout button
- Updated GPS screen to record hourly updated location history, and stores it to the database, as well as a new GPS History Screen
- Created a Feedback screen that will take user's input and store to the database

37. Runtime Permissions

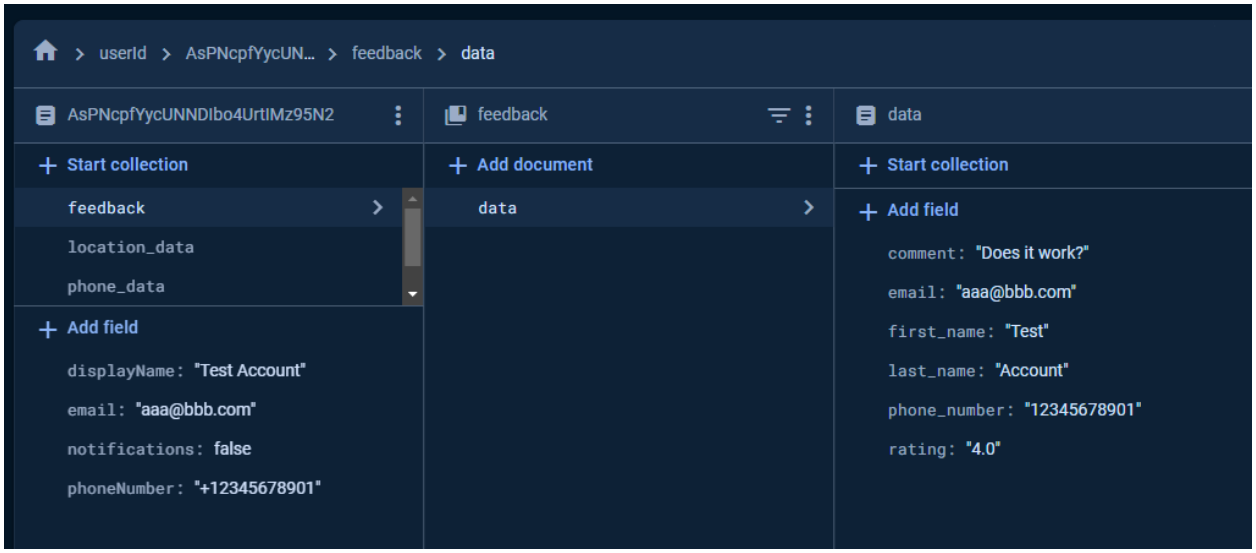
We implemented runtime permissions through the GPS screen, which upon first start, asks for permission to open maps and record location

38. Main Functionality

In this release, the two main functionalities that we implemented were:

1. A fully functional home screen, that allows the user to travel to other screens by clicking on the mini versions. It also includes a button to simulate fall detection.
2. A feedback screen that allows the user to give us feedback. The screen includes a star rating, fields for the user's first name, last name, email, and phone number, as well as a comments field. Upon submission, the data will be stored and sent to the database.

39. Showing a test that was made from the feedback screen, with the data getting stored



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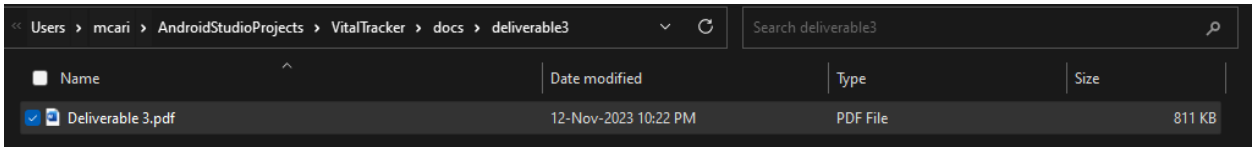
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