Milestone 2

Team Name: Ariera

Proposed Level of achievement: Artemis
Current Level of achievement: Apollo 11

Source code: https://github.com/Superbestron/Orbital_2021_FriendZone

Motivation

Social interaction is critical for physical and mental health[1]. Many people do not realise how much they yearn for social interaction until they are seized from them. While helplines exist to aid individuals[2] to cope with their mental health, we believe that providing a platform for people to socialise will better solve the problem at hand. Moreover, there is a tendency for depressed individuals to be introverted[3], making it harder for them to reach out for social interaction.

Hence, we propose the development of our application, FriendZone, which allows for individuals to join or initiate events, big and small. The application would easily facilitate social interaction between people and build genuine friendships. We believe that catering to a smaller range of age groups and people of similar backgrounds will provide a better user experience. Thus, we have chosen NUS students as our target audience. In the future, this can be rolled out to other universities as well, where the backgrounds of their general population are extremely similar to that of NUS.

Aim of project

We aim to develop a mobile application to facilitate the meeting of new people. Through our interactive and user-friendly platform, we aim to alleviate the challenges in creating new social interactions between like-minded students.

User Stories

1. As a student who does not live on campus and does not have many physical classes, I want to meet new people and make friends from those in the same course as me.

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[1] https://www.nytimes.com/2017/06/12/well/live/having-friends-is-good-for-you.html
[2] https://www.channelnewsasia.com/news/singapore/covid-19-fear-toll-mental-health-hotline-anxiety-singapore-12631710
[3] https://pubmed.ncbi.nlm.nih.gov/19263467/

2. As a student who wants to self-initiate events to interact with like-minded people, I want these people to be able to join them easily.

3. As a student who is taking a module in a different faculty, I would like to make friends and discuss lecture materials, assignments and quizzes together.

4. As an introverted student, I want to have some social interaction, but find it hard to approach people face to face.

5. As a student looking for events, I want to find events near me for convenience.

6. As a student who joins events, I want to know how to get in touch with the organisers and other people who are attending the event as well.

7. As a student who wants to join events with my friends, I want to see if my friends are joining a particular event.

8. As a student who wants to be popular, I want to be able to show to others that I am sociable and have participated in many social events.

Scope of Project

The **Mobile Application** named FriendZone provides an interactive and user-friendly platform for users to find like-minded people and meet up for various events. Users can even initiate events of their own if they wish.

Tech Stack

1. Flutter -> Framework for our mobile app
2. Firebase -> Backend that hosts our data
3. Google Maps API -> Provides location services to help users find events around them

Qualifications

Our team comprises two freshmen from NUS School of Computing, Computer Science. Both have completed CS2030S and CS2040S in year 1 semester 2. One has experience in Mobile App Development in Flutter, and the other has worked on CP3108A (an independent project on Source Academy used in the module CS1101S) using Javascript. Both are committed full-time to this project and are willing to put in the hours to learn the required technologies.

Prototyping

We made use of Figma to design our app mockups. Click here to view our designs on Figma.

To view the features we had developed for our app earlier in Milestone 1, kindly scroll all the way to the appendix (page 14).

You may refer here for a more graphical version of page 3 to 9 of this document.

Key Features of FriendZone

- **Find events around you**
    - Search event by event name
    - Indicate your interest
    - Confirm your attendance
    - Join the event telegram group

- **Create a new event**
    - Create an event you love
    - Choose the timing and location
    - Set the maximum number of people

- **Let others know you better**
    - Add a profile picture
    - Display your faculty
    - Showcase events attended (To be implemented in MS3)

- **Get points (FriendZ) and level up (To be implemented in MS3)**
    - Join events to get FriendZ
    - Create events to get even more FriendZ
    - Show off your level and title in your profile page

What's New in June

Milestone 2 brought about many fundamental features and enabled the core functionality of FriendZone, i.e. to allow users to create and initiate events. There are hundreds of bug fixes and performance improvements too, but here are some of the big features in Milestone 2.

Authorisation

Users can now create an account with their full name, email address and password. Afterwards, they can log in to browse, join and create events.

Maps

Users are now able to find events near them. When clicking on the "Maps" tab, the application would request for the permissions required to access the user's location. If access is granted, the map would be rendered with the user's location, along with events near the user as indicated by markers on the map. The markers are determined by the location chosen by the event-initiators when the former are created. The user can then tap on the markers of the events for further details and actions. Events with no location specified or that have already been over would not show up on the maps as markers.

Joining/Creating/Editing Events

Users can now confirm their attendance and their name will be registered in the database. They can even see their friends that are attending the event. If the current time is more than 48 hours away from the event, revoking of their attendance is possible, to provide flexibility for users. This also gives other interested users a chance to attend instead of wasting a slot. Confirming attendance is disallowed if the event pax limit has been reached. In Milestone 3, we would be looking to give the event initiator extra privileges such as viewing the attendee list for their event.

For the creation of events, users need to perform additional steps apart from inputting the event **Name**, **Date**, **Time** and **Description**. Firstly, they need to choose the location from the list of locations given so that their event can be seen by other users on the Map Page. If the desired location cannot be found from the given list, users can choose *"Other"* as the location but consequently their event will not be shown on map. However, we are planning to add more locations to the list in the future to allow for more variety.

Users who are also event initiators can make changes to their event details (name, date, time, etc.) as long as it is more than 48 hours away from the event. This provides flexibility to event initiators as well in case of last-minute plans. Of course, the updated pax cannot be less than the current signed-up pax and we have ensured that by not showing that as a possible option in the drop-down box. In the extreme case, deletion of the event is also possible.

Notification Page

A notification system has been implemented to notify users of any important events. For example, a user is notified if there are any changes to the events that they have signed up with, regardless if it is due to a change in event details or a deletion of the event. Users will also be notified of any friend requests that they receive. A user's created events, upcoming events and past events are also shown on the page for their reference. These provide some benefits as listed below.

Firstly, in order to remind users of their impending event, a countdown timer is shown on each upcoming signed up event. Secondly, for past events that users attended, users will be able to view the list of all event attendees which will be the primary medium that users use to add each other as friends. This will be explained further in the section below. To illustrate the friend notification system briefly, let's say user A adds user B as a friend, this action will send a *friend request* notification to user B. User B has the option to accept the friend request or to ignore it. If user B accepts it, a *friend accepted* notification will be sent back to user A to notify him that both are friends. Thirdly, having a section for user's created events allows the user to quickly view the events that he can edit.

Unfortunately, all these notifications are in-app, i.e. users will not know that they receive a notification till they view the Notification Page. We may try to integrate with Android and IOS to push phone notifications additionally.

Profile Page with Add Friend Feature
Each user will have their very own profile page filled with their own details like name and biography which will give a chance for other users to know people better. They are able to edit their profile to change or add in details, and they can even add a profile picture to make themselves more identifiable among the FriendZone community. In the future, we will also allow users to view their own friends list via their profile page.

Adding friends in FriendZone is a little different however because the ways to view other users' profiles are more limited. Currently, users can only view other users who are planning to attend the same event if both of them are friends. So, the easiest way to add each other as friends is for both users to attend the same event together. Only after the event has ended when users can view all attendees of the event, then can they view attendees which are not their friends. Finally, users can then choose which of these people they want to add as friends. Currently, there is not a delete friend function implemented yet but we hope to implement that in the future.

User's Guide

In this guide, we will walk through the activities that you can do with FriendZone, as well as some of its core functionalities.

Creating an account

In order to view, join and create events, you need to have a FriendZone account. Register for an account using your email and password. By creating an account, you also get the following benefits:

- Ability to add friends
- Notifications of event changes and friend requests
- History of past events attended and a display of upcoming signed up events
- Have your own profile page to display to other users

Provide your **full name, email address** and **password** to create a new account. Your name and email address cannot be empty, and your password must be at least 6-characters long. Tap on "Register" to create your account.

Logging into your account

If you already have an account, you can simply log into your account with your email and password. Tap "Sign In" to continue.

Navigating the Event List Page

The Event List Page is the main "Home page" of FriendZone. All the upcoming events available for sign up are displayed. The user can scroll further down to see more events.

- There is a search bar at the top of the page for you to search for a particular event based on **Name, Date** and **Time**
- Each event card shows the details of the event such as **Name, Date, Time, Current** number of users attending**, Maximum** number of attendees and an **Icon** to identify the event category. Currently there are 5 supported Icon categories
- Each event card is tappable and tapping it will bring you to the Event Details page

At the bottom of the page is the Navigation Bar. There are 5 possible main pages for you to navigate to: Home, Maps, Create Event, Notifications and Profile Page. Tapping on these buttons will bring you the respective pages.

Joining (or Un-Joining) an Event

After you have tapped on an event that you are interested to attend, you will be brought to the Event Details page. Here, even more event details are shown, like the event **Initiator** and **Description.** If you have friends that have already signed up for this event, it will be displayed as a tappable card with their **Name**, **Level** and **Profile Picture.** Tapping on the card will bring you to that particular user's profile page.

There are 2 buttons shown on the page, "Join Telegram" and "Confirm Attendance". Tapping on "Join Telegram" will pop up a web link that brings you to the event telegram group chat, where you can chat with the event initiator or with other potential attendees. When you tap on "Confirm Attendance", a dialog box will pop up, asking you if you want to confirm your attendance for the event. If you tap on "Confirm", the event pax will be updated with your attendance and it will be immediately reflected on the event page. Consequently, the button will change colour to a lighter orange and the button text will change to "Revoke Attendance".

In the case where you have any last-minute plans and you cannot participate in the event that you have signed up for, simply tap on the "Revoke Attendance" button and a dialog box will pop up, asking you if you want to revoke your attendance for the event. If you tap on "Confirm", the event pax will be updated with your withdrawal and it will be immediately reflected on the event page. ***Take note*** *that withdrawals are only possible if the current time is more than 48 hours away from the event to give others sufficient time to replace your slot.*

If maximum capacity for a particular event is reached, instead of an orange button with a "Confirm Attendance" text, a grey button with an "Event Full" text will be shown, and tapping on it will give an error.

Maps
The Maps screen can be accessed via tapping on the "Maps" tab. Upon clicking the tab, the user would have to authorise tha application to use their location. If access is granted, a google-maps widget would be rendered and the user's location shown. The user would be able to see events near them as indicated by markers on the map. When the markers are clicked, a detailed view of the event is shown where the user can confirm their attendance.

Create Event
The Create Event page can be accessed via tapping on the "Create Event" tab. You have the ability to create a new event. Simply fill up the details of the event with its **Name**, **Date**, **Time**, **Description**, **Telegram Link** (optional), **Pax** limit, **Location** and event **Icon**. The default date, time, pax and icon are listed below respectively if you do not decide to change it.

- Date: 7 days away from the date now
- Time: Current time
- Pax: 2
- Location: Others (Note that this option would mean that your event will not show up on Maps)
- Icon: First Icon from the left

For the rest of the other fields, it cannot be left blank except for the telegram link. Simply leave the telegram link field blank if you do not wish to create a Telegram group for this event. Otherwise, the link must begin with "t.me/joinchat/" in order for it to be valid.

Refer to [Telegram FAQ](#) if you are unsure of how to get the link from Telegram.

Once you are done entering the event details, tap on the pencil button to create an event and a snackbar will pop up from the bottom of the page, indicating success. However, if you realised that you had made a mistake in entering the event details, quickly press the "undo" button on the snackbar to delete the event immediately. The snackbar will disappear automatically after 4 seconds.

Edit Event

If you are the initiator of a particular event, you can tap on that event via the Event List page, which will bring you to the event page page. A pencil button will appear at the bottom right hand corner of the page. Tapping that button will bring you to a page where you can edit the details of the event. **Take note** *that only certain fields are changeable and you will not be allowed to edit the event if it is less than 48 hours away from the event start time.* After you have made your changes, tap on the check button to save your changes. You can even delete the event by tapping on the trash button. Changing the event details or deleting the event completely will automatically send a notification to all signed up attendees so only do so sparingly. The changes will be automatically reflected. You may double-check in the Event List page whether the event details have been changed or whether the event has been deleted by tapping on the "Home" tab.

Notifications

The Notifications page can be accessed via tapping on the "Notifications" tab. You can see your notifications on the top of the page (if you have any). There are generally 2 types of notifications: Event Changes and Friends-related requests. For event changes, you can tap on the notification to view the updated event details. For friend-related requests, tapping on it will bring you to the user's profile page. To delete notifications, simply swipe the notification left or right off the page. As of now, yellow notifications mean a change in event details, red notifications mean an event deletion while green notifications mean friend-related notifications.

Your created events are shown to make it easier for you to view your editable events.

Upcoming events are also shown with a countdown timer to remind you of your impending signed up events. Tapping on the event card will bring you to the Event Details page.

Past events that you have attended are shown below as well. You will be able to see the list of all attendees if you tap on the event card. Here you can choose to add them as friends.

Personal Profile

The Profile page can be accessed via tapping on the "Profile" tab. You can see your own profile details here. You may edit your profile details by tapping on the pencil icon near your profile picture, which will bring you to the "Edit Profile" page. Here, you can upload a new **Profile picture**, change your **Name**, **Biography** and **Faculty**. Tapping on the "Remove Profile Image" button will remove your current saved profile picture if you want to use the default profile picture (a greyed body). After you are done editing your profile details, tap on the "Save" button to save your changes.

Friends' Profiles

This has a similar layout to your personal profile but depending on whether you are friends with the user, there will be different buttons shown below the user's name.

If you are not friends with that user yet, you have the option to add him as a friend by tapping the "Add Friend" button. A friend request notification will be sent to him.

If you have received a friend request from that user, you have the option to accept his friend request by tapping the "Accept Friend Request" button. After tapping the button, both of you will become friends and you will be able to see each other's profiles appear in the "Friends Attending" section of the Event Details page if both of you have signed up for the same event.

Logout

If you want to log out of your account, tap the "Logout" button on the top right corner located at every main page (Home, Maps, Create Event, Notifications, Profile). You will be brought back to the login page.

Features to be completed by Milestone 3:

User Interface and Bug Fixes
We plan to improve and finalise our UI for the app by putting in animations such as an animated splash screen for our app, giving our app an official app logo and standardizing widget colours and sizes in general.

Also, following feedback from our User Testing in Milestone 2, we plan to fix all these bugs and change our UI accordingly to make it more intuitive for our users.

We plan to enhance the search function via searching by categories.

Better Integration with Android and iOS
We hope to integrate with Android and iOS to push phone notifications for a better user experience. These can range from reminding users of their upcoming events to notifying users of incoming friend requests.

Stronger Authorisation
In order to verify that the user creating an account on our app is a legitimate NUS student, we can use verification emails where the users will be required to verify their email address before they are allowed to use the app. We hope that this extra security check will provide users a safer experience when they meet up physically.

Friends
Our friends function for our app is still in its infancy and lacking common core capabilities. The goal is to build on this feature and give users more control in managing their friends. We plan to give users the ability to delete a particular friend from their own friend list. Apart from that, we also plan to allow users to view a list of their friends by tapping on the "Friends" text on their profile page. This will open up a page populated with a list of their friends. Tapping on each friend will redirect them to their friends' profile pages.

Garbage-Collection System
In order to free up space on the user's end and database's end, we plan to implement an auto-garbage collection system to delete events/notifications that are more than 30 days old. Currently old notifications and events will continue to stay in the database without being removed. With reference to the "Notifications" page, a user's past attended events will continue to fill up the page if a user continuously attends events, without any function to remove them. Accumulation of such events might be undesirable for them in the long-run as it will fill up a huge portion of the phone screen.

Gamification System (Levelling-up system with points)
We plan to introduce a levelling-up system with points (FriendZ) in FriendZone in order to encourage users to participate in events more frequently, promote genuine interaction with people and ensure users actually turn up when they have signed up for a particular event.

We hope this feature will make our app standout from usual friend-finding or dating apps. Similar to Reddit's karma, FriendZ are "fake internet points" which have no real tangible benefits to a user. In the case of FriendZone, one's FriendZ are a reflection of how social one is. The more FriendZ one has, the higher one's level will be. One can earn FriendZ in a few different ways:

- Participating in Events
- Creating Events
- Adding Friends

Core Features:
- Event participation points for users that turn up for events
    - Event-initiators are able to view the full attendee list for the event unlike normal users who can only see their friends attending before the event starts
    - Another section will be added in "Notifications" page called "My Events Attended"
    - With the new section, event-initiators can find events that they have created easily and tap on each of them individually, bringing them to a page to verify attendee participation
    - On this page, event-initiators can either tap the check or cross icon to verify a particular user's attendance depending on whether that user has attended the event
    - Once a user has been verified as having attended the event, he/she will receive a notification, saying that they have participation points
    - If the event-initiator has not verified the attendance within 30 days, by default all signed up attendees will be regarded as having attended the event and be rewarded the corresponding participation points
- Penalty system to discourage users who do not turn up for events
    - Conversely, those who do not turn up will be punished
    - For the first offence, they will be given a warning, but subsequent "no-shows' will have their points deducted
- Bigger rewards for event-initiators
    - We acknowledge the effort of the event-initiator to connect with more people so he/she will be rewarded with significantly more points than merely participating in an event, and these points will scale with event pax number
- Show off FriendZ and level to other users
    - FriendZ and level will be displayed on the user's profile
    - Tapping on the "Points" text will bring up a simple user guide detailing the ways one can earn FriendZ
    - Similarly, Tapping on the "Level" text will detail more information about the user's current level, i.e. how many more FriendZ to level up, history of FriendZ additions (and deductions)

Version Control

We used git as version control on github. Git is pretty much the standard for most projects which use version control. There are other git providers like gitlab and bitbucket which can be integrated with other services like JIRA for development following the Agile framework. However, github seemed to be the goto solution due to its popularity and its extensive documentation.

We followed a DevOps approach, bringing ci into github with github actions. We used feature branching extensively and ci provides automated testing on our code before we merge them into the master branch. This ensures that our code base remains robust and does not break down due to any single commit from a developer which contains faulty code.

Testing

Testing was added in this milestone. Widget testing was done for all of the front pages. Tests for routing and mounting of widgets was carried out with flutter_test package. Continuous integration was added in this milestone as well using github actions. This workflow analyzes, tests and builds the code for all PRs and commits into master.

However, as Milestone 2 is a prototyping phase, unit tests have not yet been integrated in our code base. However, we have performed manual system tests with regards to the several features we have implemented.

Entity–relationship model

https://drive.google.com/file/d/1jSyrMAtfUY923sUKEjCK3Zq5pvMvvluD/view?usp=sharing
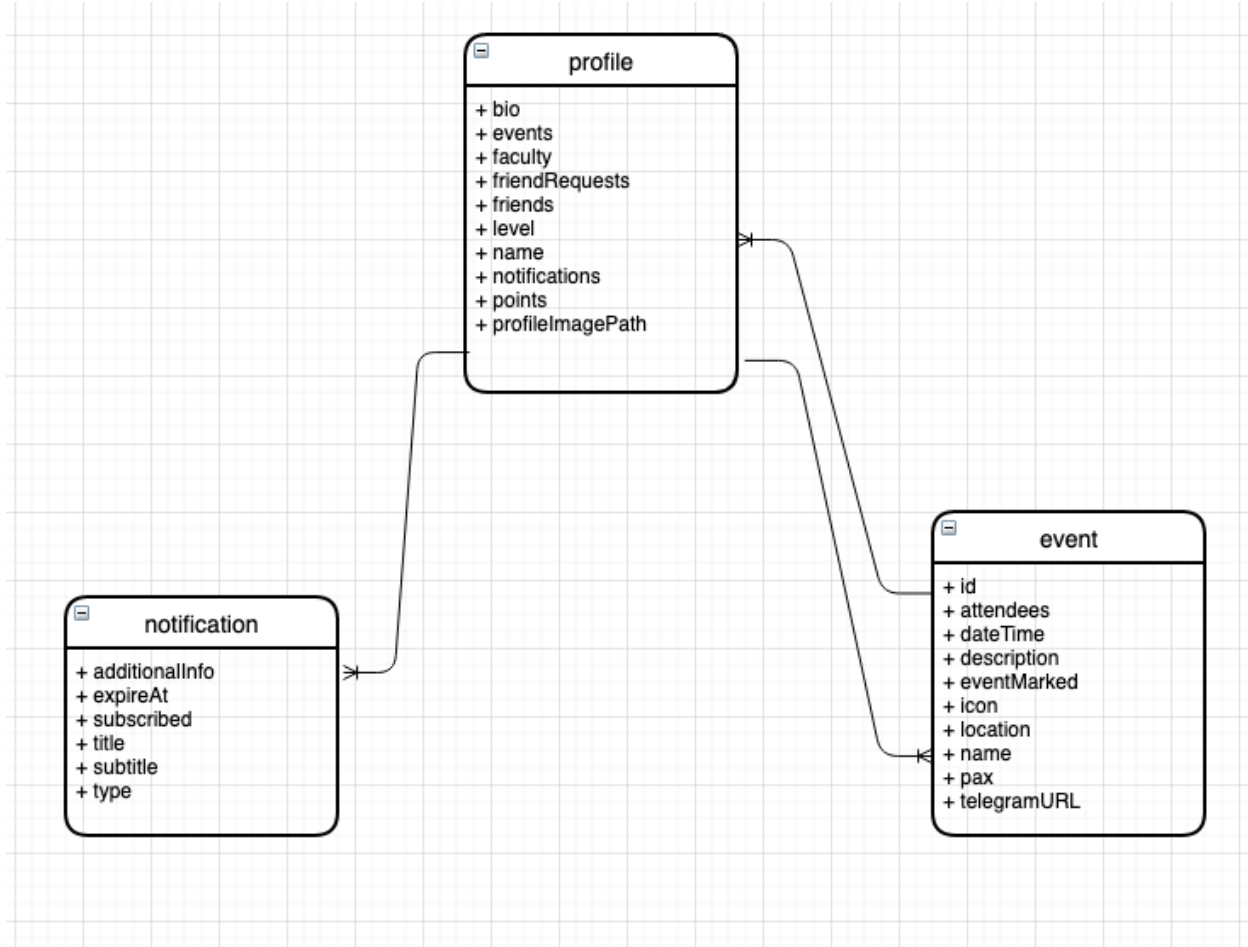
We chose to use firebase for our database as it is easy to integrate with flutter. Moreover, firebase is a noSQL database which makes it easier to learn. The agile data models offered by noSQL databases allows us to make adjustments and changes easily which speeds up our development process.

Activity diagram

https://drive.google.com/file/d/1ufCSx2l6a8zRDu5inh23cCve2FNzmtLq/view?usp=sharing
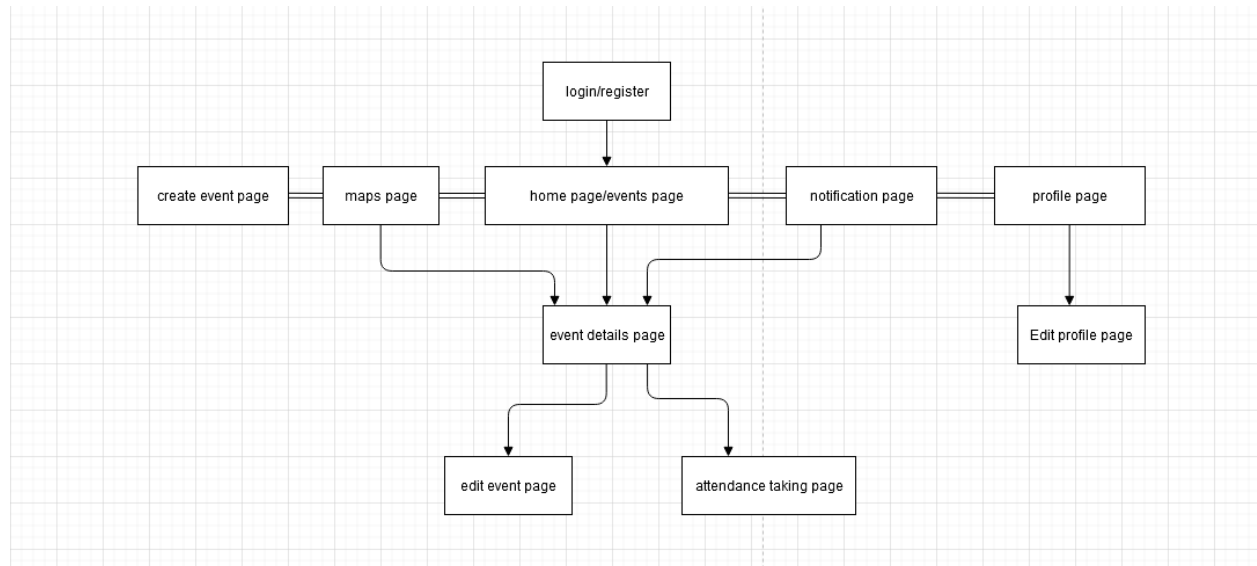
After registration, the user is sent to the homepage where a list of events are shown. The user is able to navigate between the homepage, maps, create event page, notification page and profile page with the use of the navigation bar. As mentioned, the homepage shows a list of events, the maps show events near the user, and the create event page allows users to create events. The notification page shows recent notifications received by the user and the profile page allows the user to modify their own profile.

Authorisation
- **Creating an account.** We created a user account with a full name, email address, and password. As expected, the user was logged in.
- **Logging in.** We logged in with correct credentials, and the login was successful and the user's notifications, events created, upcoming events signed up for, past events attended and profile were correctly retrieved. Logging in with wrong credentials will lead to an error message, as expected.
- **Logging out.** Upon logging out, the user will be brought back to the sign in page, as expected.
- **Creating an account with a password less than 6 characters** will throw an error, as expected.

Maps
- **Navigating with multitouch.** Pan and zooming gestures worked as expected on map views. Rotating the map view did not misalign the markers and user's location.
- **Tapping on event markers** will bring users to the "Event Details" page detailing the event's details. However, we are aware of the issue that multiple events centred on the same location will only allow users to be able to view the top-most event. This issue has not been fixed.

Browsing Events

- **Search bar.** We tried searching for an event named "Hello", with date 2 Jul 21, time 20:26, pax 1/2 and a description of "Join me!". We were able to find the event when we typed substrings of "Hello" (both upper and lowercase), 2, substrings of "Jul", 21, 20 and substrings of "Join me!", as expected. However, we are looking to facilitate the searching process by adding in filters by event categories, time and capacity (whether the event is full or not) as we recognised that the search function might not be that intuitive.
- **List of events.** All upcoming events available are shown on the screen with the correct details shown. The associated event icon renders correctly.
- **Event details.** Clicking on the event card on the home page brings us correctly to the "Event Details" page with the correct details displayed. Friends attending the event rendered correctly. For our attended events that have already been over (view them via the "Notifications" page, we were able to see the list of all attendees, regardless whether they are our friends, as expected.
- **Navigate to friend's profile page.** Tapping on the profiles of one of our friends who were attending an event correctly brings us to his profile page.
- **Past events are hidden.** We were unable to find any event that has already been over, as expected.

Joining (Un-Joining) Events
- **Confirming Attendance.** Confirming our attendance was reflected on the screen by an increase of 1 for the current pax number. Likewise, revoking our attendance decreased the count by 1.
- **Event full.** The attendance button will be greyed out and untappable, as expected.
- **No Telegram link provided** by event-initiator. The Telegram link will be greyed out and untappable, as expected.
- **Event initiator cannot revoke attendance.** Tapping the attendance button will show an alert dialog, as expected.
- **Cannot revoke attendance within 2 days of the event.** Tapping the attendance button will show an alert dialog, as expected.

Creating Events
- **Tapping on the + button** successfully creates an event**.** This is assuming that we have filled up the essential event details. We are navigated back to the "Home" screen and a snackbar will appear at the bottom of our screen, as expected.
- **Clicking on undo button on snackbar** successfully deletes the event. As expected, our newly created event disappears from the event list.
- **Required fields,** such as left event name, event or event description must be filled before we are allowed to create an event, as expected.

Editing Events
- **Tapping on the pencil button** correctly brings us to the "Edit Event" page. Similar restrictions are placed on the event details (like creating events) with a few little

changes. We were unable to select a date that was 2 days from the current date and a pax lesser than the current pax, as expected.

- **Notification about event detail changes.** We used another account to attend the event created by our main account. After we edited the event on our main account, the other account received a notification about a change of the event details, as expected.

Notifications

- **Viewing notifications.** Tapping on the yellow notifications brings us to the "Event Details" page with the updated event details. Tapping on the red notifications should not lead us anywhere. Tapping on the green notifications should redirect us to that user's profile page. All these performed as expected.
- **Timer of upcoming events.** The countdown timer to the start of the events was correctly calculated by visual inspection.
- **Segregation of events.** Events were grouped according to whether they are created by a user, upcoming events signed up and past events attended. They were rendered correctly.

Profile Page

- **Profile Details.** Events were grouped according to whether they are created by a user, upcoming events signed up and past events attended. They were rendered correctly.
- **Edit Profile.** Tapping on our profile image correctly brings us to the "Edit Profile" page.
- **Change Profile Image.** On the "Edit Profile" page, tapping on our profile image correctly redirects us to our phone gallery, where we are able to choose a photo and crop it as our new profile image. After we have selected, our profile image is replaced with our new image.
- **"Remove Profile Image" button** works as expected. Tapping it will cause our current profile image to be removed and replaced with the default profile image.
- **Required fields,** such as full name need to be filled before we are allowed to save the profile changes that we have made.

Friends

- **Adding friends.** Tapping on another user's profile (through viewing the list of all attendees for a past event) correctly brings up the user's profile page with a button to add friends. Tapping on that button sends a "Friend Request" notification to that user, and causes the button to grey out. We were able to verify the sending of the notification via logging into that user's account.
- **Accepting friend requests.** While still logged into that user's account, we tapped on the "Friend Request" notification which brought us to our main account's profile page. There was a "Accept Friend Request" button shown, as expected. Tapping on it sends a "Friend Request Accepted" notification back to our main account, and causes

the button to grey out. We were able to verify the sending of the notification via logging back into our main account.

● **Being friends.** We were able to verify if this account and our main account were friends by checking that both of our friend counts increased by 1 after we have clicked on the "Accept Friend Request" button. Furthermore, we were able to see each other on the "Friends Attending" section on the event details when we both signed up for the same event.

UI components

● **Tapping on a button multiple times.** Some buttons run asynchronous tasks. We are aware of the issue that if a user taps on these buttons repeatedly, the same request will be made multiple times to our database. This can be fixed by transferring the user to a loading screen or disabling the button until the process is completed.

User testing and comments (Known Issues and Bug Fixes)

These are the feedback given to us by some of our friends when they tested out FriendZone. Some of these issues have been fixed just in time before Milestone 2. We provided some comments for some of the feedback.

1. *"if i wanna add/delete profile photo pressing the brown button doesnt work you gotta press the photo itself (seems a bit strange)"*
   ○ *This is due to a limitation of Flutter but we were more inclined to believe that it is our inexperience with Flutter that made us think that way. We will try to solve it in MS3.*
2. *"when i want to edit profile if i add profile photo and remove it then i cant save the changes i make"*
   ○ *This problem cannot be reproduced on our end so we believe that this was due to poor internet connectivity on the user's end*
3. *"after i created the event then went back to the + all the stuff i keyed in was still there so i could create a duplicate event exactly the same"*
   ○ *This has been fixed by clearing all the fields upon tapping the "Create Event" button*
4. *"i like the ui tho"*
5. *"Why cannot put sungei gedong [as location]"*
6. *"When multiple events are at the same location, I can only click on the event that shows up at the top"*
   ○ *Instead of assigning map coordinates to a particular location based on predefined locations, we let users pick any point they want on the map. The location coordinate will be saved as an event detail. This reduces the probability of 2 events having the same exact coordinate.*
7. *"I want to be able to search for a particular location on maps, like NUS"*
8. *"Better if users can filter by categories, in other words have a filter button"*

9. *"I want to be able to see my created events in notifications so it's easier for me to see the events that I can edit"*
    - *This has been added*
10. *"Confirmation button before deleting and editing event to prevent accidental clicks"*
    - *This has been added*
11. *"What if a user inputs rubbish in the telegram link"*
    - *This has been fixed by verifying if the link is valid*
12. *"More detailed information about event changes like Date, Time, etc. changed"*

Appendix

Features completed in Milestone 1

Authorisation

Users need to log in before browsing and create events. They can do so with a registered account by typing in its corresponding email address and password.

Viewing Event List

The Event List page is the main "Home page" of FriendZone. All the upcoming events available for browsing are displayed. The user can swipe further down to see more events.

- There is a search bar at the top of the page for users to search for a particular event based on **Name, Date** and **Time.**
- Each event card shows the details of the event such as **Name, Date, Time, Maximum** number of attendees and an **Icon** to identify the event category. Currently there is only 1 supported Icon category. We plan to include more categories in the future.
- Each event card is tappable and tapping it will bring users to the Event Details page.

At the bottom of the page is the Navigation Bar. There are 5 possible main pages for users to navigate to: Home, Maps, Create Event, Notifications and Profile Page. Tapping on these buttons will bring users to the respective pages. Currently, we have only implemented the "Home" and "Create Event" pages.

Create Events

Users can create a new event by first navigating to the "Create" tab. Next, they need to fill up the details of the event like **Name, Date, Time, Description, Pax** and select an event **Icon** (however there is only 1 type of icon now). Finally, tapping on the "Plus" button will create an event. Users can navigate back to the home page by tapping on the "Home" tab to view their newly created event.

Project Log

S/N	Task	Date	Orbitee 1 (hrs)	Orbitee 2 (hrs)	Remarks
1	Set up programming environment	14 May	10 hrs	10 hrs	
2	Meeting with advisor	15 May	2 hrs	2 hrs	Met with advisor to discuss
3	Poster	15 May	5 hrs		
4	Video	15 May		5 hrs	
5	Week 1 workshop	15 May	3 hrs	3 hrs	First saturday workshop
6	Figma	17 May	5 hrs	5 hrs	Created figma mockups for app
7	Week 2 workshop	22 May	3 hrs	3 hrs	Second saturday workshop
8	Enabled login authentication with Firebase	24 May		10 hrs	
9	Login page UI creation	25 May	5 hrs		
10	Home page UI creation	26 May	5 hrs		
11	Create event collections in database	28 May	5 hrs		Create search bar which queries that collection
12	Configure app to post new events to database	28 May	5 hrs		Unique eventID to be created automatically matching that of object ID in firebase
13	Sync Events with database	28 May		10 hrs	List of events shows up correctly by querying the database
14	Week 3 workshop	29 May	3 hrs	3 hrs	Third saturday workshop
MS1	Subtotal		51 hrs	51 hrs	
S/N	Task	Date	Orbitee 1 (hrs)	Orbitee 2 (hrs)	Remarks

15	Add attendance functionality	3 June	5 hrs	5 hrs	
16	Registration page	6 June	10 hrs		
17	Add Profile Page for User	12 June		10 hrs	
18	Initialise google maps service	10 June	10 hrs		
19	Meeting with advisor	12 June	1 hrs	1 hrs	
20	Update poster	12 June	3 hrs		Move over to canva for better templates
21	Refactor screens	12 June	2 hrs	7 hrs	And fixing completely non functioning code
22	Add function to add friends	12 June		10 hrs	
23	Delete event functionality	13 June	5 hrs		
24	Show nearby event on map	13 June	10 hrs		Tapping on markers lead to event details
25	Add demo GIF in readme	15 June	5 hrs		Have yet to showcase gamification and adding friends
26	Milestone 2 logs	16 June	2 hrs	2 hrs	
27	Add notification models	16 June	10 hrs	3 hrs	Notify change in event
28	Allow users to see friends attending a particular event	17 June		10 hrs	
29	Allow deleting of notifications	18 June		10 hrs	
30	Update video	20 June		5 hrs	Created a new video with better graphics
31	Added NUS email verification for creating an account			5 hrs	Used firebase to send verification email and string checking to ensure email ends with

					'@u.nus.edu'
32	Implemented Auto Deletion of Events and Notifications after 30 days	5 July		10 hrs	Implemented in a way such that when user views the events/notifications page, it will trigger a function to check and delete events/notifications that are more than 30 days old
33	Added Animations + Splash screen	7 July		10 hrs	Tiles can slide
34					
Sum			114 hrs	114 hrs	