Deliverable 4

Chesm

Smart City

Team Member

Team Member Names	Signatures	Student ID
Project Leader: **Thanh Phat Lam**		N01335598
Hieu Dang Chu		N01371619
Dung Ly		N01327929
Dinh Hoa Tran		N01354661

Github Repo

https://github.com/nhoxrongvip/SmartCity

Participants

Name	ID	Signature	Effort
Thanh Phat Lam	n01335598	lam	Complete Air quality fragment , show data to daily graph and report daily value on screen. Add Intro activity, get runtime permission in this activity and send data through SharePreference. Publish app to Play Store Documenting Effort: 25%
Dung Ly	n01327929	dung	Completed Garbage Bin Fragment (Add animation for the Garbage Bin load), and GarbageFragment, add Navigation Drawer for main activity, add new function for Register

			App to recommend Strong password for user, did the Test case with Junit test and Robolectric Test for The Application. Effort : 25%
Hieu Chu	n01371619	Hieu	Completed Snow level fragment. Snow level, temperature and humidity now update in real time using API json. Fill bar chart with data from snow level forecast in 3 hours. Update UI with a better interface and color. Update Setting fragment with UI and lock portrait. Helping document and ReadMe Effort 25%
Dinh Hoa Tran	n01354661	Tran	Completed Light City fragment. Get data from database, get value and check distance default set 20m for each light. Set the time the light off/on from 5pm-5am (the light will auto). From (5am-5pm) the light only can off or on by manual button. Completed activity Profile user Completed activity change password Completed activity forget password Effort:25%

Account to log in

username: haki.sharifi@gmail.com

password: haki11

Sprint 4

Goal: Complete all the functions and design

Sprint 4 (Nov 14-Nov 28): Add new activity & complete remaining functions

[Welcome Activity] First-time user

👁 🕐 Nov 14 - Nov 21 ≡ ☑ 5/5

[Air Quality] Complete

👁 🕐 Nov 21 - Nov 28 ≡ ☑ 4/5

[Garbage] Complete

🕐 Nov 14 - Nov 21 ☑ 5/5 DL

[Garbage_Bin Screen] Function design

🕐 Nov 21 - Nov 28 ☑ 5/5 DL

[Complete] City Light fragment

🕐 Nov 16 - Nov 28 ☑ 5/5 TH

Created land design for city light

🕐 Nov 24 - Nov 25 ☑ 5/5 TH

Function city light

🕐 Nov 10 - Nov 30 ☑ 7/7 TH

+ Add a card

Sprint 4 (Nov 14-Nov 28): Add new activity & complete remaining functions

···

[Garbage_Bin Screen] Function design

🕐 Nov 21 - Nov 28 ☑ 5/5   D

[Complete] City Light fragment

👁 🕐 Nov 16 - Nov 28 ☑ 5/5 TH

Created land design for city light

👁 🕐 Nov 24 - Nov 25 ☑ 5/5 TH

Function city light

👁 🕐 Nov 10 - Nov 30 ☑ 7/7 TH

Created activity user profile

👁 🕐 Nov 11 - Nov 25 ☑ 4/4 TH

Created activity change password

👁 🕐 Nov 30 ☑ 2/2 TH

+ Add a card

[Welcome Activity] First-time user

in list Sprint 4 (Nov 14-Nov 28): Add new activity & complete remaining functions 👁

Members   **Labels**

👤 ➕   **DONE** ➕

Dates

☑ Nov 14 - Nov 21 at 5:00 PM complete ⌄

☰ **Description** Edit

This activity will start after the login screen for the new user.
There are 4 pages:
+ App introduction
+ Team members introduction
+ Fragment introduction
+ Get started

☑ **Components**   Hide checked items   Delete

100% ━━━━━━━━━━━━━━━━━━━━━━━

☑ ~~Provide layout for App introduction page~~

☑ ~~layout for Team member introduction page~~

☑ ~~layout for each fragment uses tutorial~~

☑ ~~Layout for "Get started" page~~

☑ ~~Animation for every page~~

　　Add an item

☰ Activity   Show details

Add to card

👤 Members

◇ Labels

☑ Checklist

🕐 Dates

📎 Attachment

🖥 Cover

🗂 Custom Fields

Add dropdowns, text fields,
dates, and more to your cards.

🎁 Start free trial

Power-Ups

➕ Add Power-Ups

Automation   ⓘ

➕ Add button

Actions

→ Move

🗐 Copy

🖥 Make template

[Air Quality] Complete

in list Sprint 4 (Nov 14-Nov 28): Add new activity & complete remaining functions 👁

Members

Dates

☑ Nov 21 - Nov 28 at 5:00 PM `complete` ⌄

Description   Edit
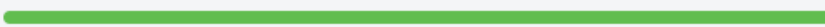
Complete remaining functions in Air Quality Fragment

☑ Remaining   Hide checked items   Delete

100% ████████████████████████████████

- ☑ ~~Complete "Quality, condition" section~~
- ☑ ~~Send notification if Quality is Moderate or Unhealthy~~
- ☑ ~~Send notification is AQI value is more than 51~~
- ☑ ~~Complete Daily graph report~~

Add an item

☰ Activity   Show details

Add to card

- 👤 Members
- ◈ Labels
- ☑ Checklist
- 🕐 Dates
- 📎 Attachment
- ▭ Cover
- ⌖ Custom Fields

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💼 Start free trial

Power-Ups

+ Add Power-Ups

Automation   ⓘ

+ Add button

[Garbage] Complete

in list Sprint 4 (Nov 14-Nov 28): Add new activity & complete remaining functions

Members   **Labels**

DL   +   DONE   +

Dates

☑ Nov 14 - Nov 21 at 5:00 PM complete ⌄

≡ **Description**

Add a more detailed description...

☑ **Functions**   Hide checked items   Delete

100% ▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬

☑ ~~Spinner displays cities on database~~

☑ ~~With selected city, display city name is city_textview~~

☑ ~~In listview, show address of bin~~

☑ ~~When listview is clicked, move to Garbage_bin fragment which display detailed of each bin~~

☑ ~~Show reference at the end (if needed)~~

Add an item

≡ **Activity**   Show details

Suggested   ⚙

👤 Join

Add to card

👤 Members

◈ Labels

☑ Checklist

🕐 Dates

📎 Attachment

🖵 Cover

🗁 Custom Fields

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📖 Start free trial

Power-Ups

+ Add Power-Ups

Automation   ⓘ

+ Add button

Actions

[Garbage_Bin Screen] Function design

in list Sprint 4 (Nov 14-Nov 28): Add new activity & complete remaining functions

Members
DL +

Labels
DONE +

Dates
☑ Nov 21 - Nov 28 at 5:00 PM complete ⌄

≡ **Description**

Add a more detailed description...

☑ **Layout components** Hide checked items Delete

100% ████████████████████████████

☑ ~~Show selected city, address of area, number of bins~~

☑ ~~Show weight of each bin, show bin condition~~

☑ ~~Bin condition: if bin is not half full, show green. If bin is more than half, show yellow. If bin is full, show red~~

☑ ~~ImageButton for each bin, when clicked, show bin condition~~

☑ ~~Button to call Garbage collector. When clicked, update data to firebase~~

Add an item

Suggested ⚙

👤 Join

Add to card

👤 Members

◎ Labels

☑ Checklist

🕐 Dates

📎 Attachment

🖥 Cover

🗂 Custom Fields

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📖 Start free trial

Power-Ups

+ Add Power-Ups

Automation ⓘ

+ Add button

Actions

[Complete] City Light fragment

in list Sprint 4 (Nov 14-Nov 28): Add new activity & complete remaining functions

×

Members   **Dates**

TH   +   ☑ Nov 16 - Nov 28 at 7:45 PM complete ⌄

☰ Description

Add a more detailed description...

☑ Functions

Hide checked items   Delete

100% ▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬▬

- ☑ ~~Spinner displays cities and treets on database~~
- ☑ ~~With selected cities and streets, display city name is city_textview~~
- ☑ ~~Simulator if the car go to street with radius lower or equal than 10m the light will auto on~~
- ☑ ~~When user want to turn off or on the light, the value can not change~~
- ☑ ~~Show the data~~

Add an item

Suggested ⚙

👤 Join

Add to card

👤 Members

◈ Labels

☑ Checklist

🕐 Dates

📎 Attachment

🖥 Cover

🗂 Custom Fields

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💼 Start free trial

Power-Ups

+ Add Power-Ups

Automation ⓘ

Created land design for city light

in list Sprint 4 (Nov 14-Nov 28): Add new activity & complete remaining functions

Members
TH +

Labels
DONE +

Dates
☑ Nov 24 - Nov 25 at 11:21 AM `complete` ⌄

Description

Add a more detailed description...

☑ Layout Components

Hide checked items Delete

100% ████████████████████████████

- ☑ ~~Have options location textview.~~
- ☑ ~~Have a image view~~
- ☑ ~~Show the light is on/off~~
- ☑ ~~Buttom on/off manual~~
- ☑ ~~Auto buttom~~

Add an item

≔ Activity

Show details

Write a comment...

Function city light

in list Sprint 4 (Nov 14-Nov 28): Add new activity & complete remaining functions

✕

Members

TH +

Labels

DONE +

Dates

☑ Nov 10 - Nov 30 at 11:30 AM complete ⌄

☰ **Description**

Add a more detailed description...

☑ **Functions**   Hide checked items   Delete

100% ████████████████████████████████

☑ ~~Get database~~

☑ ~~Auto buttom~~

☑ ~~ΞManual Buttom~~

☑ ~~Text view from database~~

☑ ~~If the current time between 5 am to 5 pm the auto buttom can't use~~

☑ ~~If the user click on manual buttom the light always on/off~~

☑ ~~Will random distance number to show up the light~~

Add an item

☰ **Activity**   Show details

Write a comment

Suggested   ⚙

⚇ Join

Add to card

⚇ Members

◎ Labels

☑ Checklist

🕐 Dates

📎 Attachment

▭ Cover

▱ Custom Fields

Add dropdowns, text fields, dates, and more to your cards.

🎫 Start free trial

Power-Ups

+ Add Power-Ups

Automation   ⓘ

+ Add button

Actions

→ Move

⧉ Copy

▱ Make template

Created activity user profile

in list Sprint 4 (Nov 14-Nov 28): Add new activity & complete remaining functions 👁

Members   **Dates**

TH   +   ☑ Nov 11 - Nov 25 at 12:08 PM `complete` ⌄

Description

Add a more detailed description...

☑ Functions

Hide checked items   Delete

100% ━━━━━━━━━━━━━━━━━━━━━━━━━

- ☑ ~~Show information of user~~
- ☑ ~~Buttom update~~
- ☑ ~~The information will save even out of app~~
- ☑ ~~Can change avatar of user~~

Add an item

≔ Activity

Show details

TH   Write a comment...

Add to card

- 👤 Members
- ◈ Labels
- ☑ Checklist
- 🕐 Dates
- 📎 Attachment
- ▭ Cover
- ▱ Custom Fields

Power-Ups

- ➕ Add Power-Ups

Automation ⓘ

- ➕ Add button

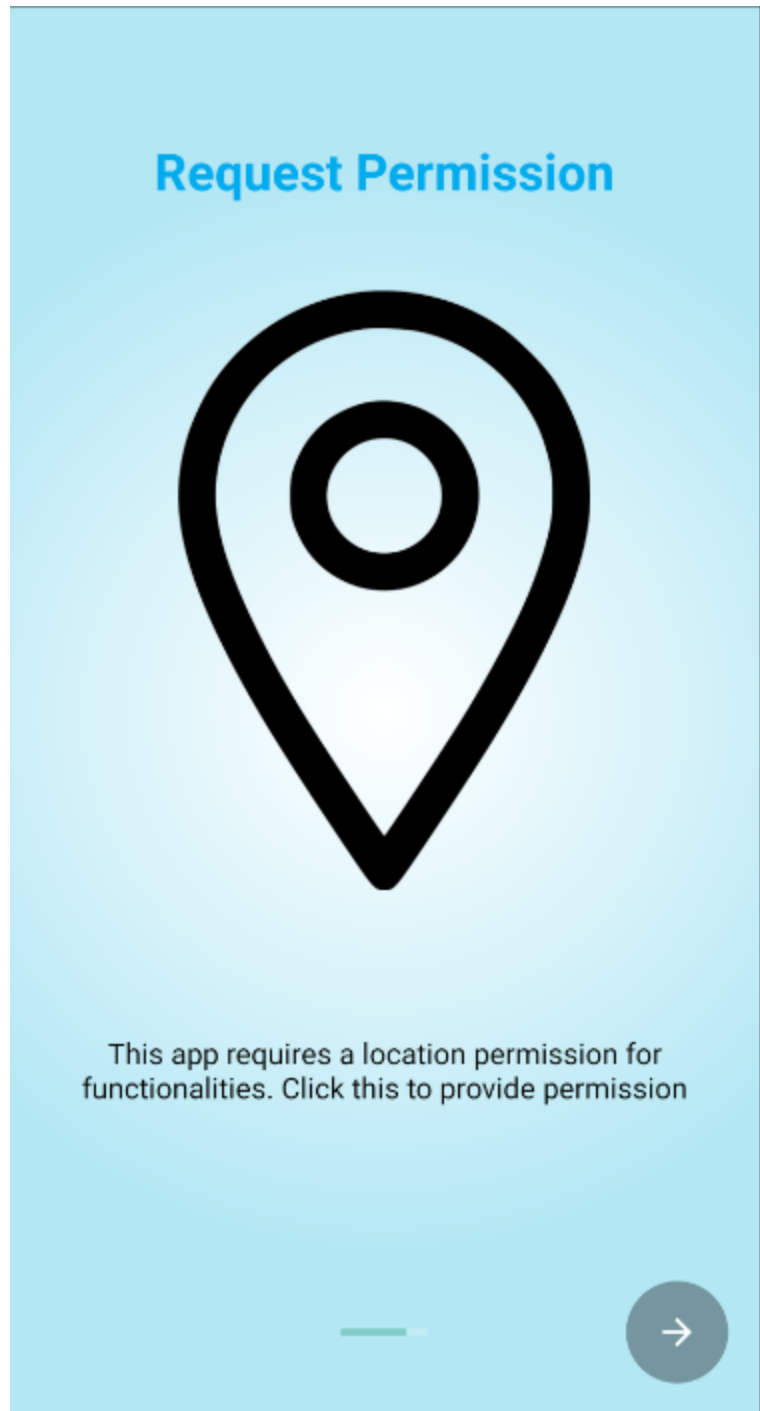### Actions

- → Move
- ⧉ Copy
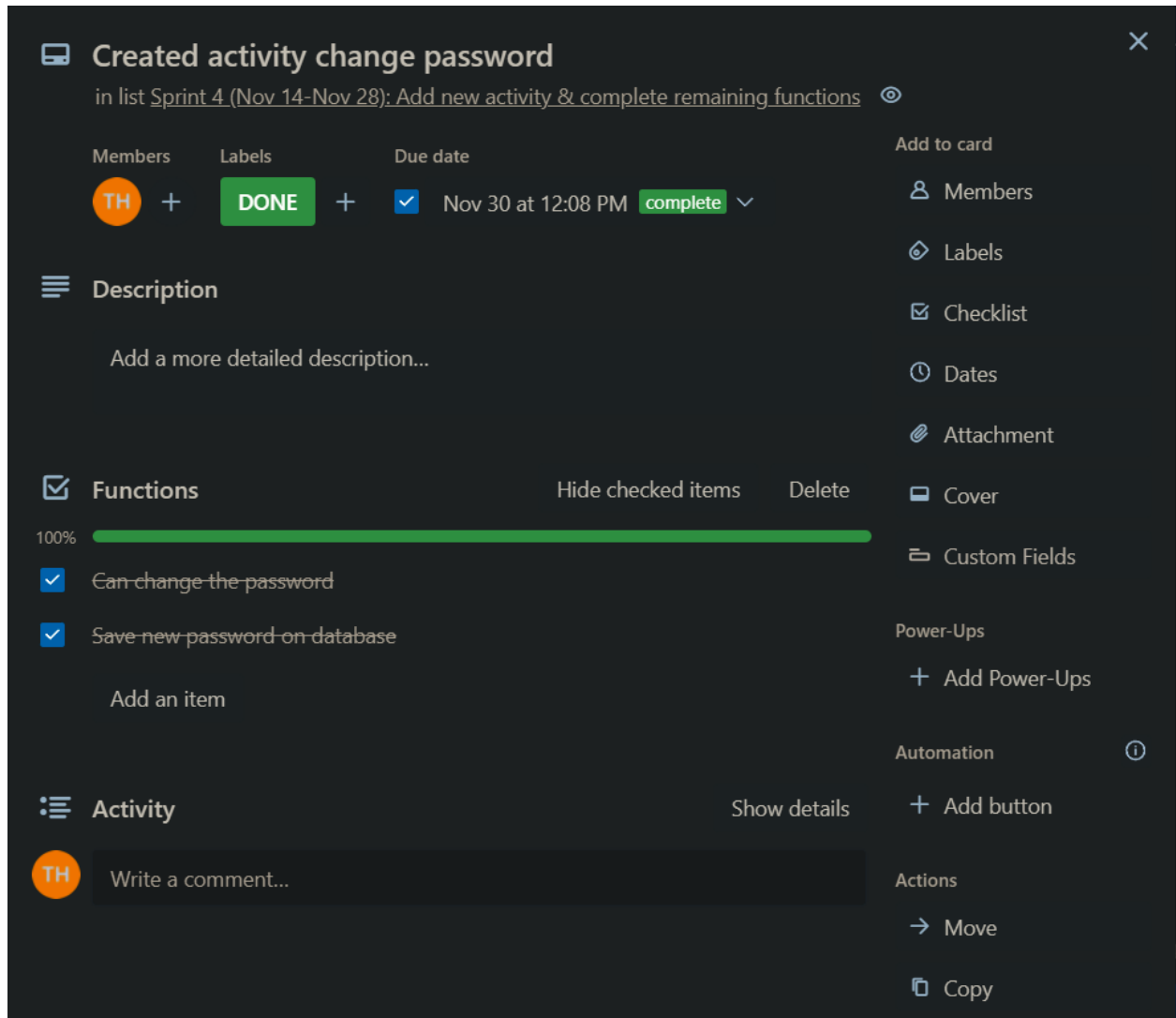
Function for offline & airplane mode:

This can't be done because everything needs internet, so when it's offline, you cannot log in.

How to validate runtime permission

In the app intro activity, we need location permission to run the fragment so it must be allowed in this activity. I recommend deleting and reinstalling the app so you can test it.
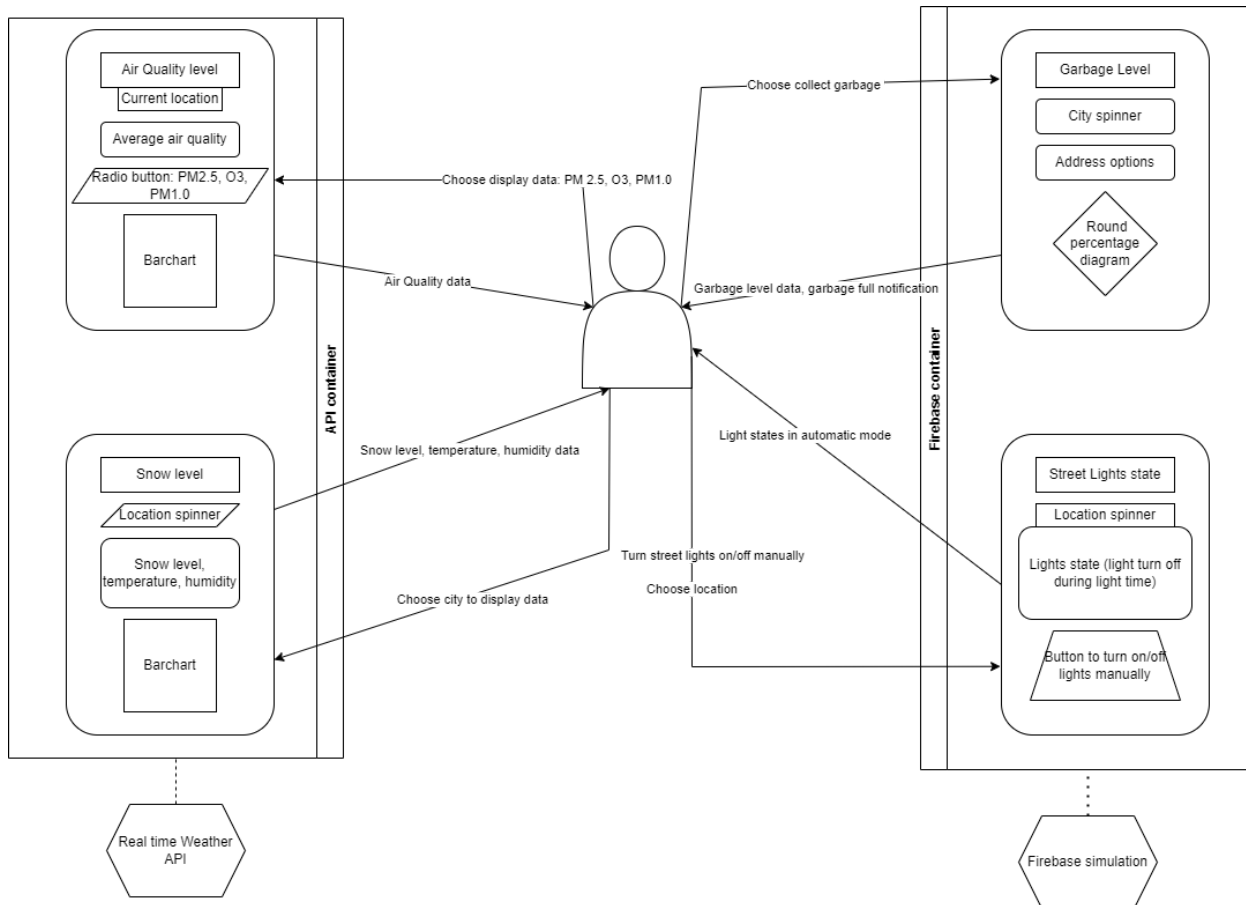
Once the permission is provided, it'll be sent to Main Activity. Because we dont have much time, we only let them allow in the Intro Activity and it'll be stored in SharedPreference (which is not a sufficient way). What happens if you deny ? Don't worry, you won't be able to access further if permission is not allowed.
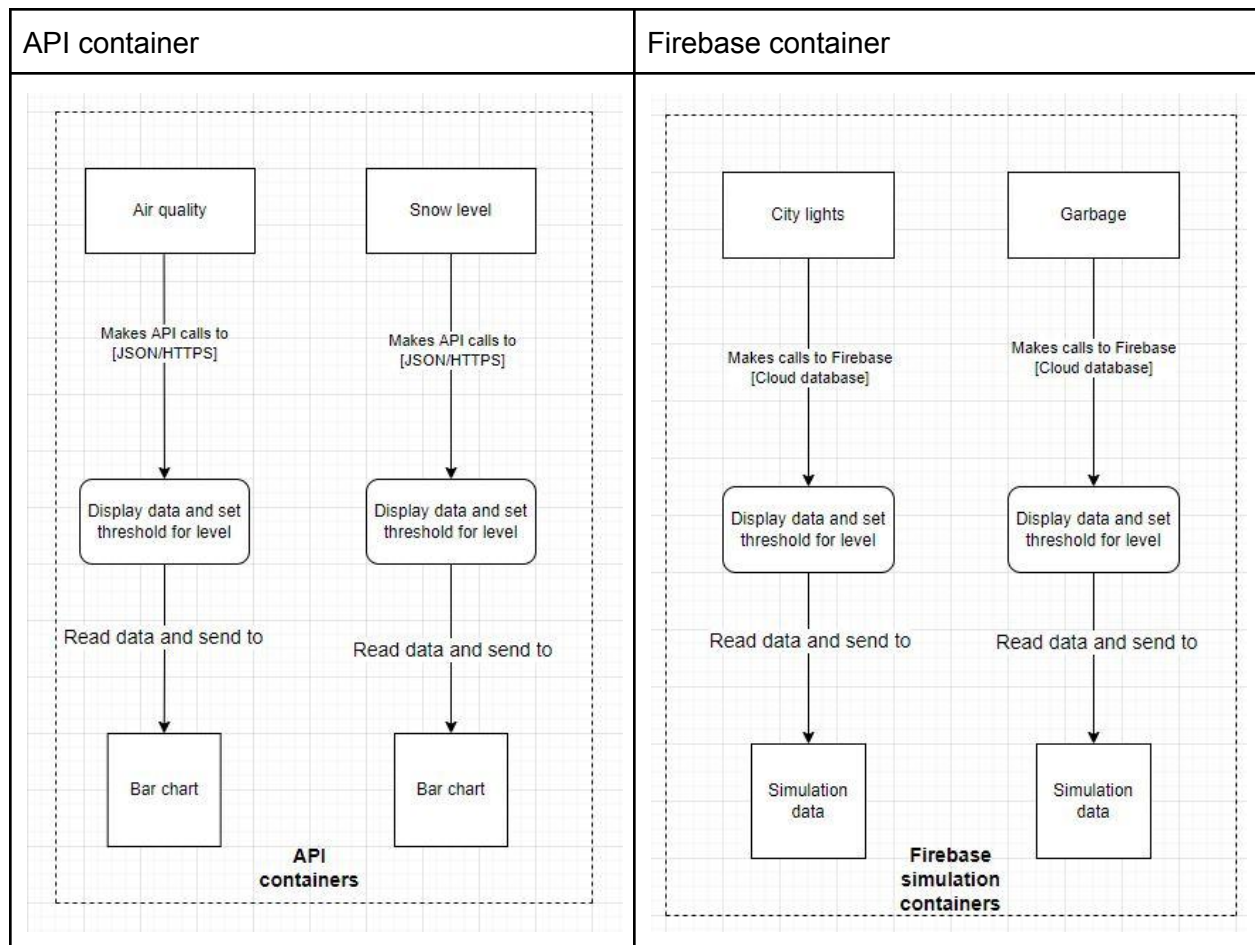
After location permission is allowed, the current long lat will be passed to Geocoder to find the city name. You'll see data of your location after logging in to the app.

C4

Container diagram

API container

Air Quality level
Current location
Average air quality
Radio button: PM2.5, O3, PM1.0
Barchart

Snow level
Location spinner
Snow level, temperature, humidity
Barchart

Real time Weather API

Choose display data: PM 2.5, O3, PM1.0
Air Quality data
Snow level, temperature, humidity data
Choose city to display data

Choose collect garbage
Garbage level data, garbage full notification
Light states in automatic mode
Turn street lights on/off manually
Choose location

Firebase container

Garbage Level
City spinner
Address options
Round percentage diagram

Street Lights state
Location spinner
Lights state (light turn off during light time)
Button to turn on/off lights manually

Firebase simulation

Components diagram

API container	Firebase container

Project Review Meeting

This is a survey that Project Leader created for team member reviews about the project.

Project Review Meeting

Project Schedule Review	Project Quality Review	Time management	Lesson Learned	Improvements

Project Schedule Review

_ Most of team members satisfy with schedule
_ Project timeline is a little hurry
_ Tasks are not divided individually
_ Some tasks are not complete in time. Need a reminder from project manager

Project Quality Review

_ Half team members agree that project does not meet goals
_ Team collaboration is good
_ Final result does not satisfy

Time management

Most of the task were finished on time

Things were done last minutes

_ Documenting and fix bugs
_ GUI and functions
_ Testing

Lesson Learned

Mistakes

_ Misunderstanding and underrate app functionality
_ Missed deadline
_ Big/complex tasks that cannot be handled

New things

_ New Android Methods
_ Firebase, Asynctask, layout design
_ API interaction, testing and cloud storage

Improvements

Improvement (In term of person)

_ Team member managements
_ Time management
_ Concentration on app

Improvement (In term of person)

_ Clean code
_ Simple code design
_ Time management

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Improvement (In term of person)

_ Clean code
_ Simple code design
_ Time management

Everyone attended the weekly meeting.

About Quality assurance, the app does not work as we want because it still contains some bugs in functions & layout. If we have more time, this project will be improved.

Technical Debt

In a big project like this, technical debt is unavoidable. Therefore, we have a meeting weekly and do a code review and refactoring so we can reduce it.

Two areas that we refactoring:
Code debt: since putting everything in one place makes a big mess, we chunk code into smaller pieces so that code management will be easier.

App publish

Currently app is in review so we cannot download and do review.

Testing

Login test

Register test