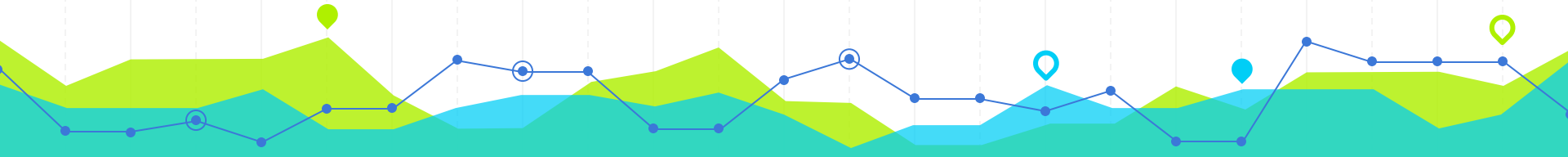# PiLoc App Brief
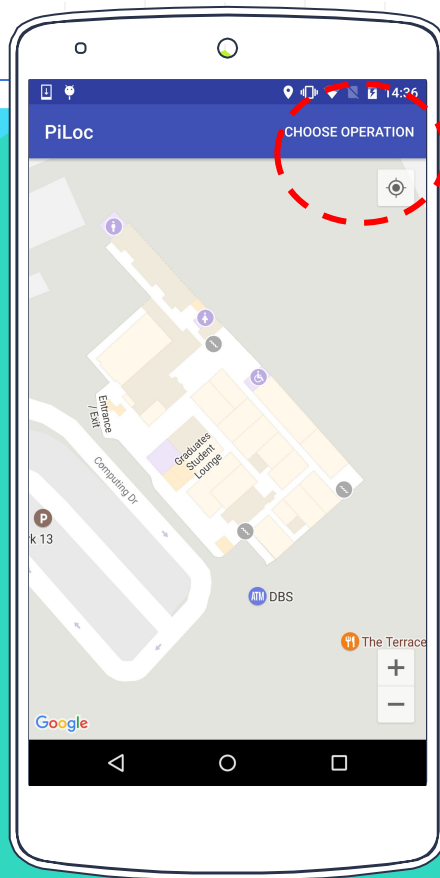
What is PiLoc

- Android APP that enable indoor localization
- Users contribute walking traces annotated with WiFi fingerprint
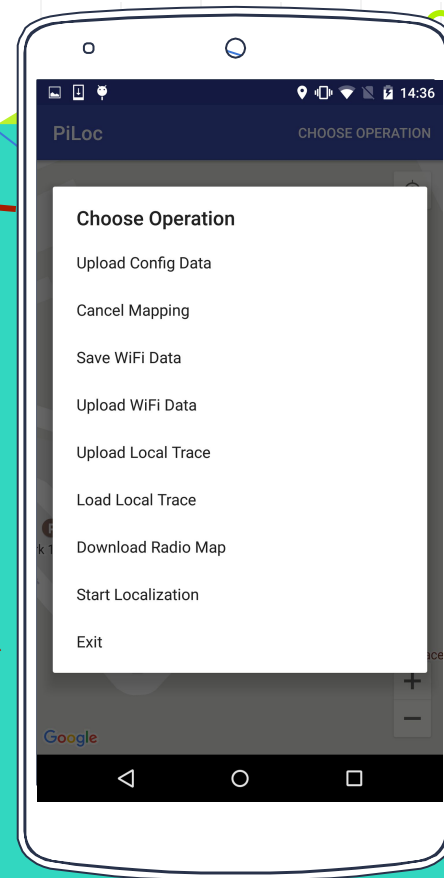- Radio map will be build and updated on the remote server
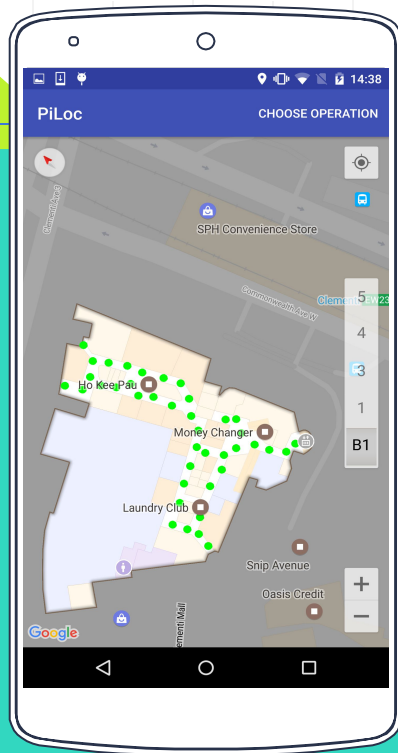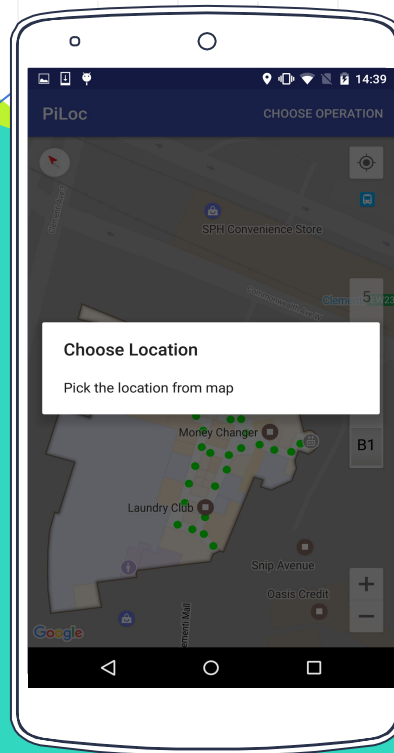
PiLoc

UI introduction

Choose Operations

Operation List
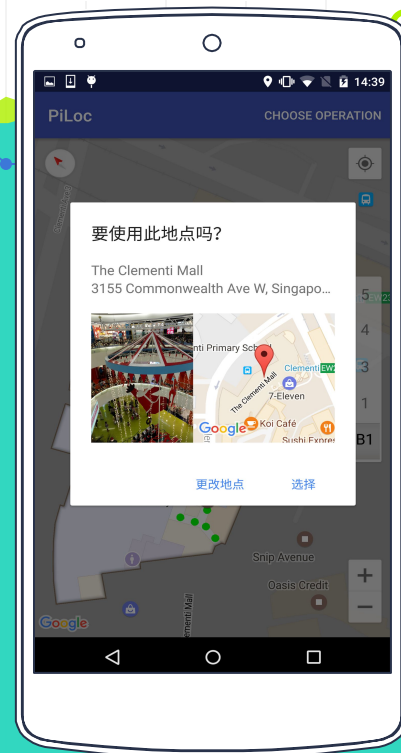
Map Configuration

Long press at each of the location that you want to cover

Configure map to cover all the walkable area

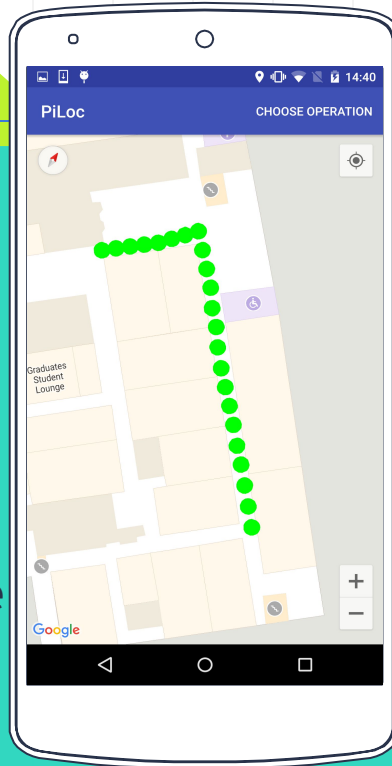Choose "Upload Config Data" to upload the configuration to remote server

Select the correct location in the map
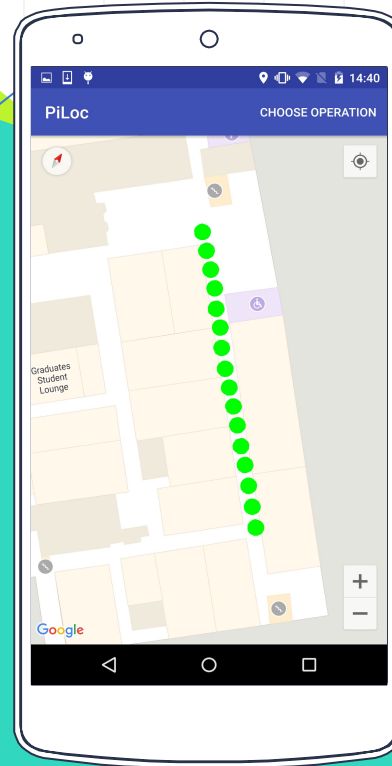
Collect Trace

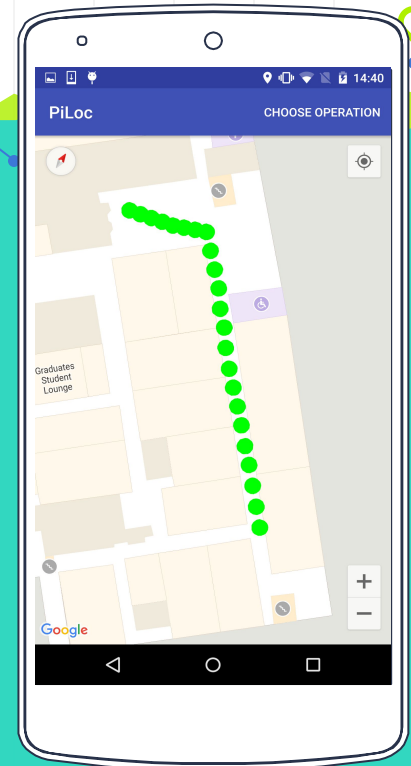Press the starting point and walk;

Pin the ending point at turning;

Collect enough trace to cover the whole area.

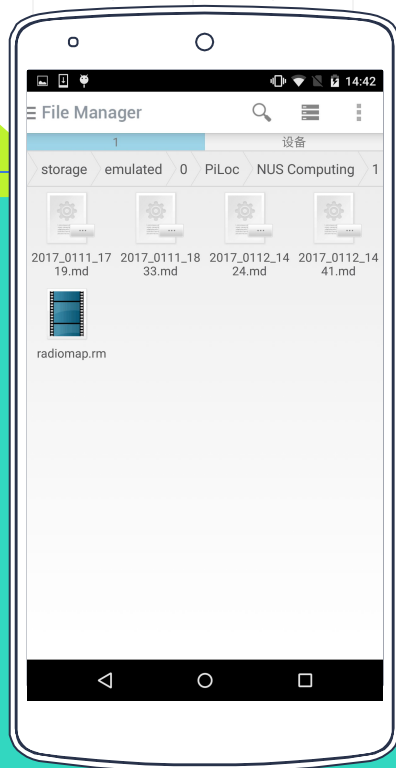Compass is not reliable. So try to confirm each trace when you do the turning.

Choose "Cancel Mapping" if you choose the wrong ending location. If you choose "Cancel Mapping" again, the latest trace will be removed.
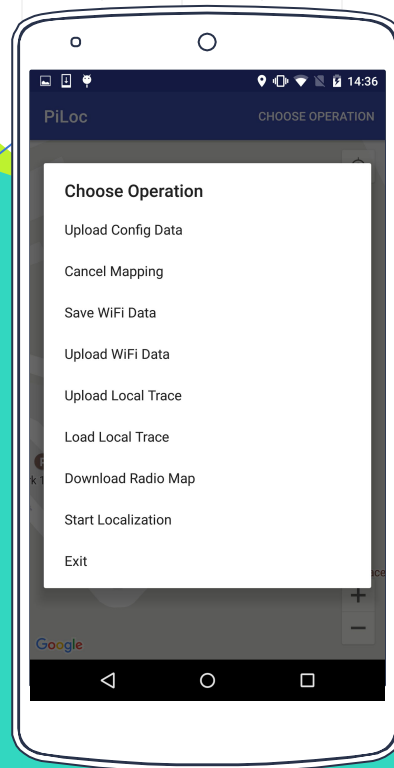

Re-pick the correct ending point.
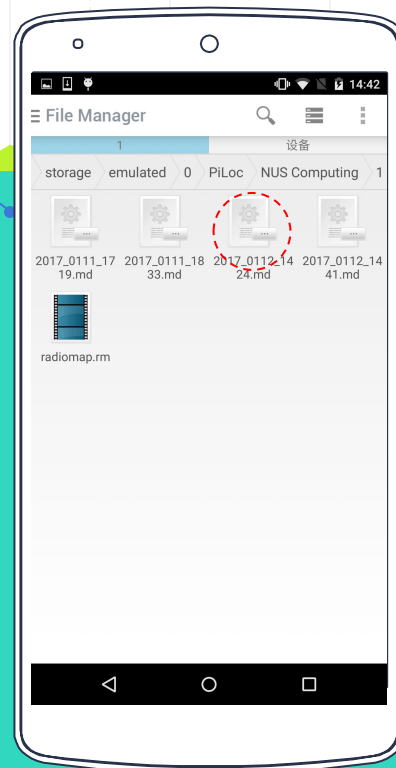
Save or Upload Collected Trace

Walking trace contributed by different users can be merged in the remote server and generate radio map for indoor localization

"Save WiFi Data" will save the trace with timestamp in specific location in the phone storage.

"Upload WiFi Data" will directly upload the your collected trace to the remote server without saving in the local storage.
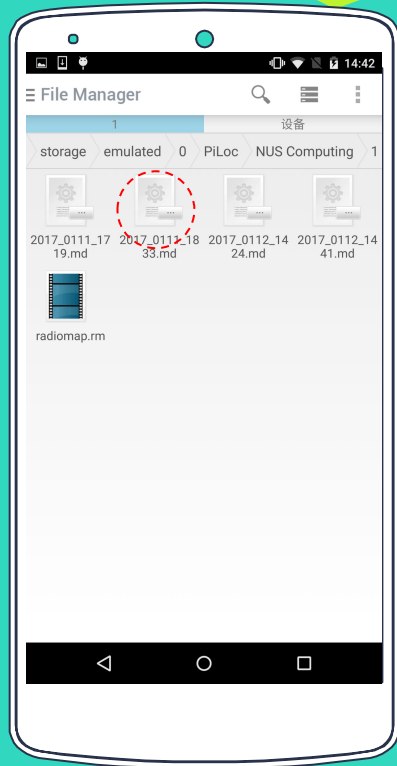
"Upload Local Trace" will allow you to upload the trace will collect before. Just pick the ".md" file you want to upload.
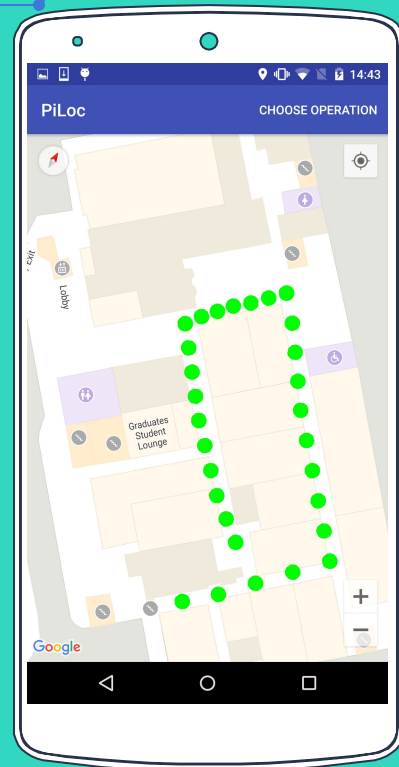
"Load Local Trace" will allow you to check the trace before you upload it. Just pick the ".md" file you want to check.

Load local trace to check before you upload the data
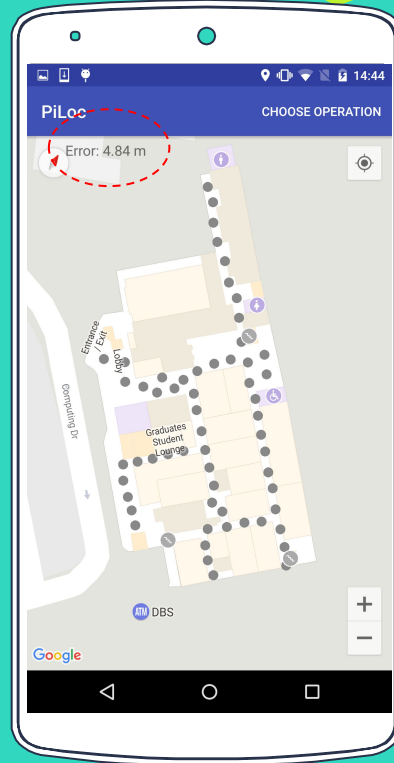
Make sure you don't upload the wrong trace to the server.

Trace collected before will be shown in the mao for you to verify. After that you can proceed to upload the data.
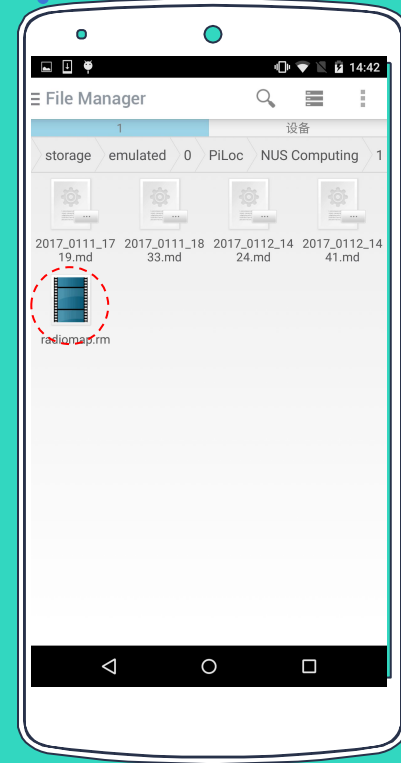
"Download Radio Map" will get you the latest radio map. You can check the coverage of the map and the estimated accuracy.
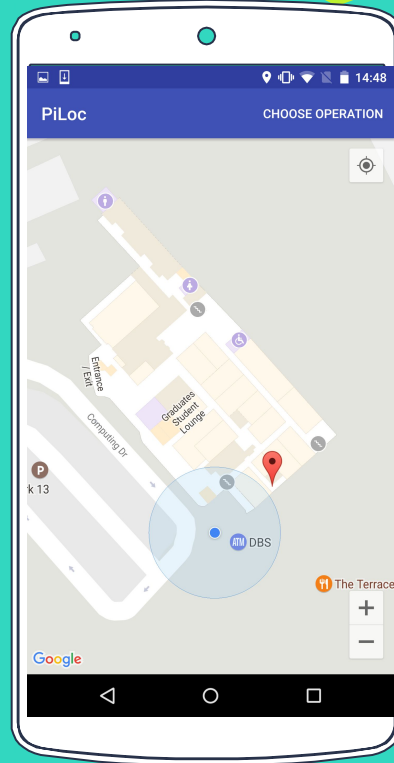
The radio map will be save locally and used to do indoor localization later.
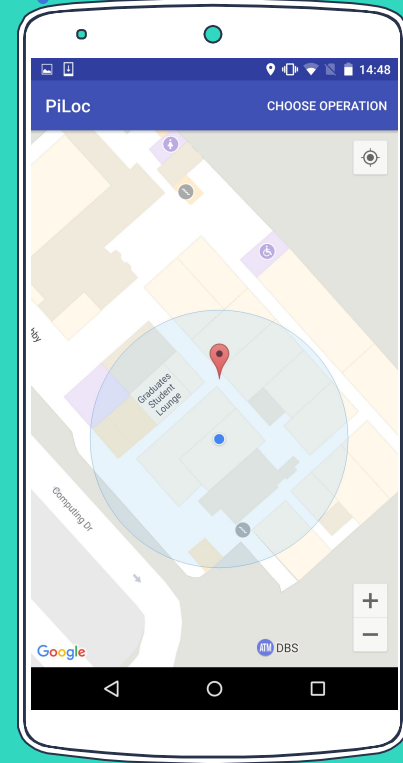
Download the latest radio map

"Start localization" will use the radio map downloaded before to calculate your real time location in this floor. The red pin give the location we calculated from the WiFi FIngerprint. The blue dot is the google map location with large error.
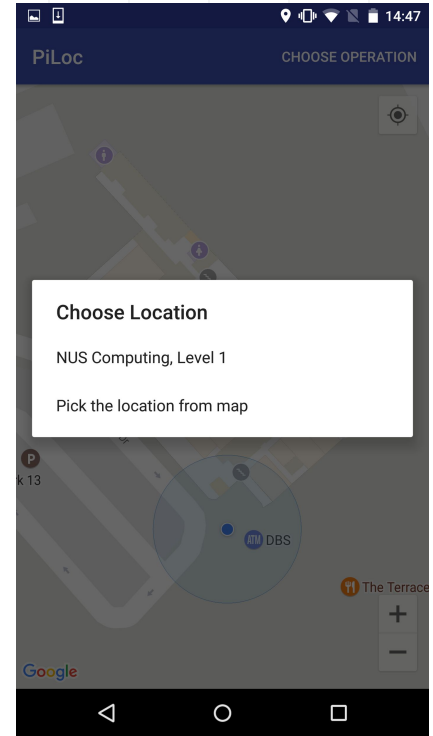
The indoor location will give the location only within the area which you have walked through before.
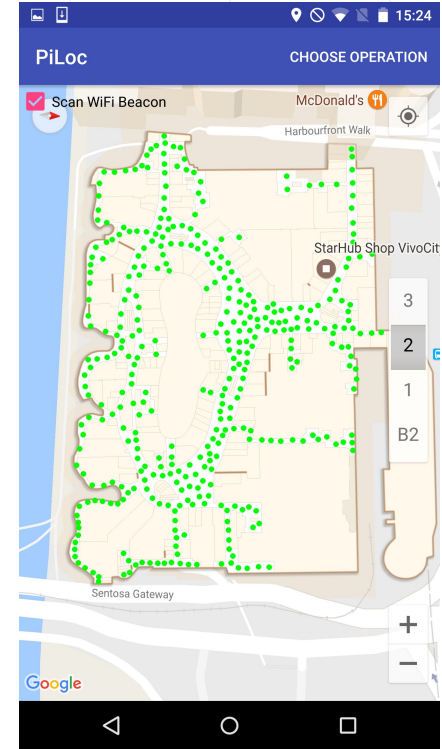
Start Localization

TIPS AND SUGGESTIONS

- The APP will prompt location suggestion based on the WiFi fingerprint;
- If your upload data doesn't not match with the existing data in server. The server may reject to merge the data to the radio map.

TIPS AND SUGGESTIONS

- ◉ Get your hand dirty from some smaller space. (com1 level 1)
- ◉ Map configuration also have an impact to the localization accuracy.

THANKS!

Any questions?

Hong Hande

You can find me at honghand@comp.nus.edu.sg