Indoor mapping with Crowd-Sourced data (WA4-15)

Students’ Name: Ng Yu Hin Ernest  
Supervisor’s Name: Professor Albert Wong

ABSTRACT
This project describes a mobile android application which is part of a larger project to create an indoor map by making use of crowd-sourced data. The app is used for collecting real time signal strength value for mapping and database building. Once users open the application, the application will automatically find the no value from the smart device and show on screen. Then, the value can be sent to the administration through web. All the values are recorded as .xlsx format in order to make it easier to read and extract.

Literature Review
The problem of automatically locating a user in a physical space and provide navigation guidance is one that is often encountered in indoor navigation. This problem is considered challenging. In order to overcome this challenge, a mobile location system with automatic radio map is being studied. As making use of crowd-sourced data, the graphical and radio map can be automatically constructed and updated in the coverage area. In order to do this, the project, Android application for collecting real-time values from smart device, is created. The main idea of the project is to create a mobile location application for collecting large amount of user data to create an indoor crowd-sourced database and then use it to update and construct indoor maps with special algorithms, thus provide navigation guidance. However, this is a big project, it contains many different tasks, the area I focus on is to build an android application to collect the user’s data to create a database and for further analysis.

Objective
The whole project aims to collect values by a smart phone application. Users are encouraged to download the application and enjoy the navigation service with the smartphone.

The overall project is separated into five parts, for example the analysis of algorithms like floor map, graphical map construction etc. I am focused on the sample collecting parts. I aim to build a user-friendly complex collecting application to facilitate the whole project.