



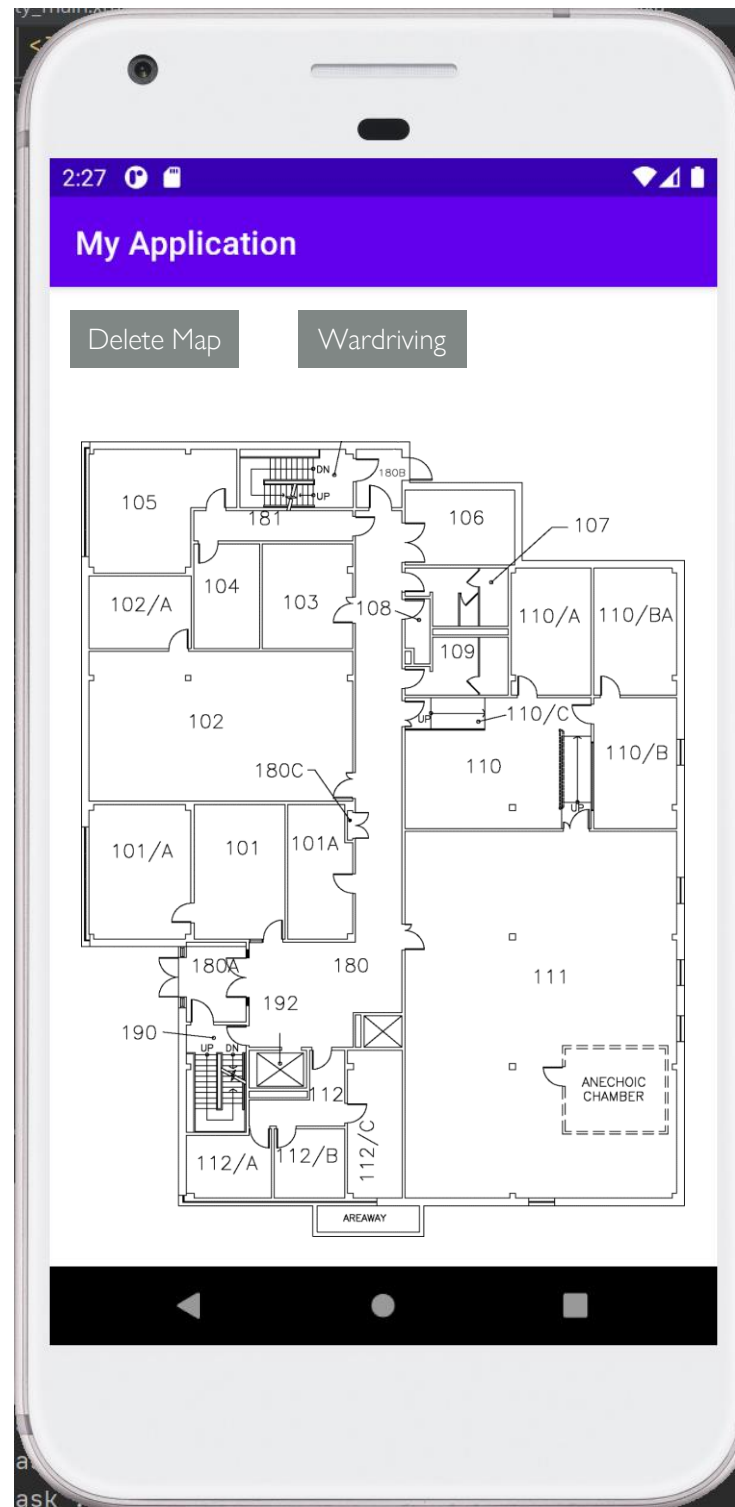
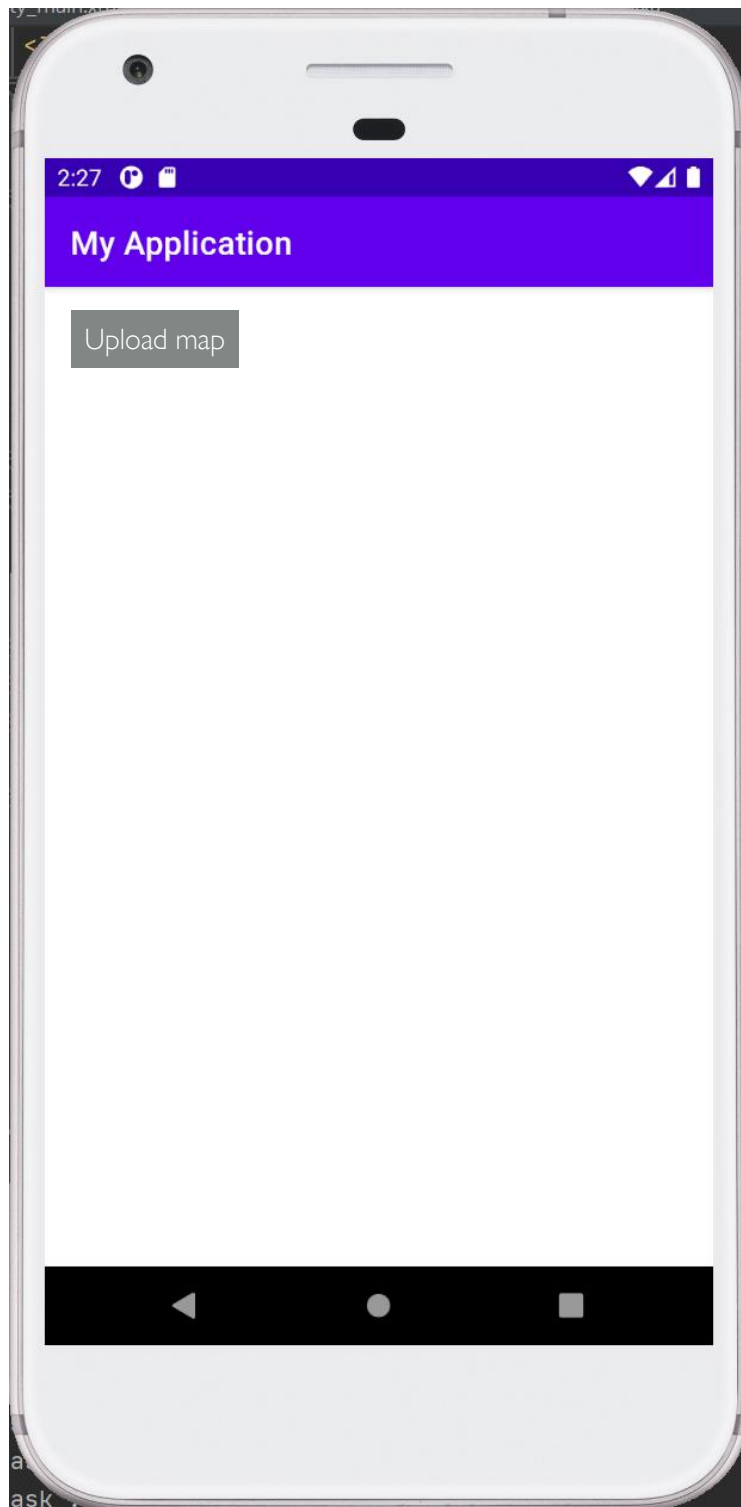
# CSE 465 Mobile Computing Assignment



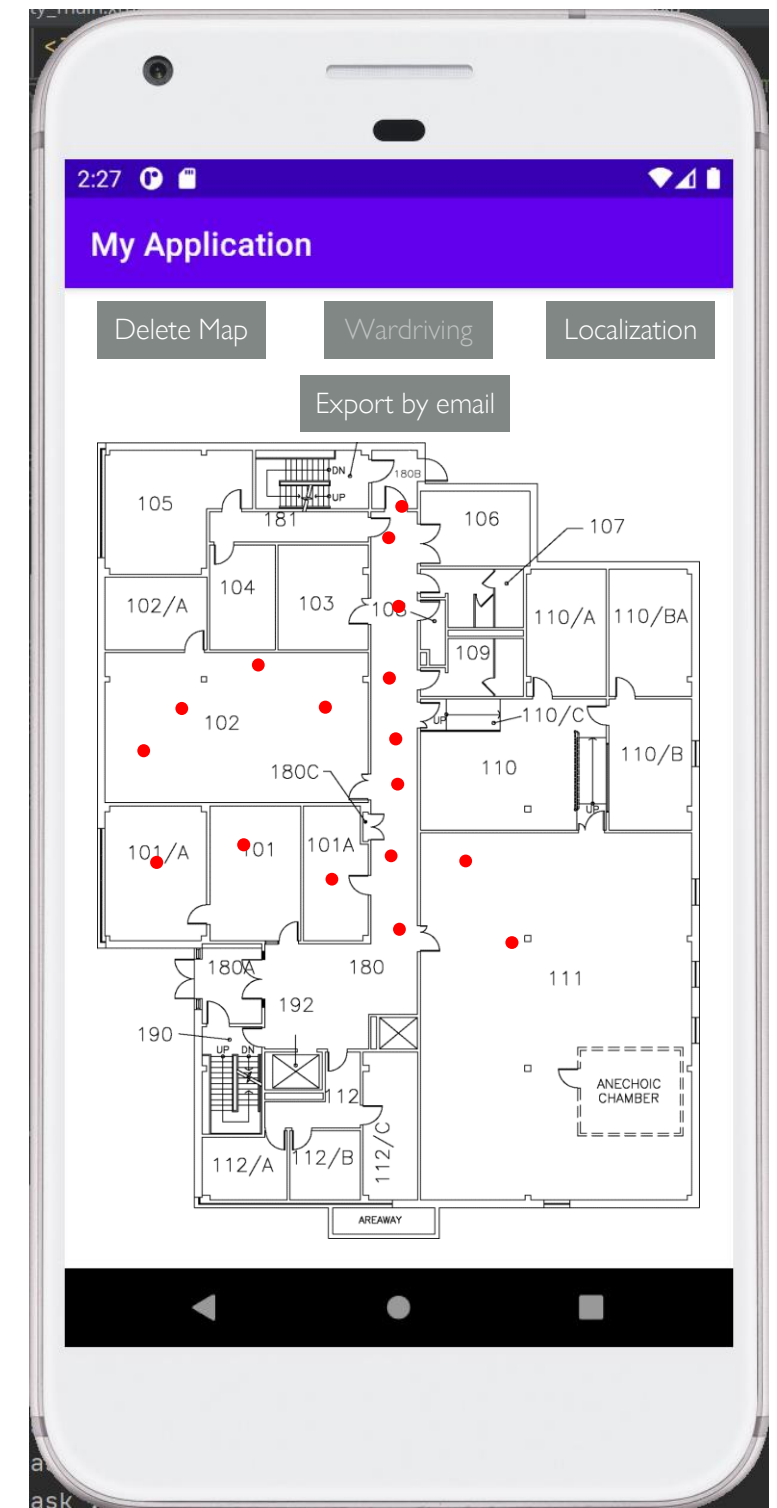
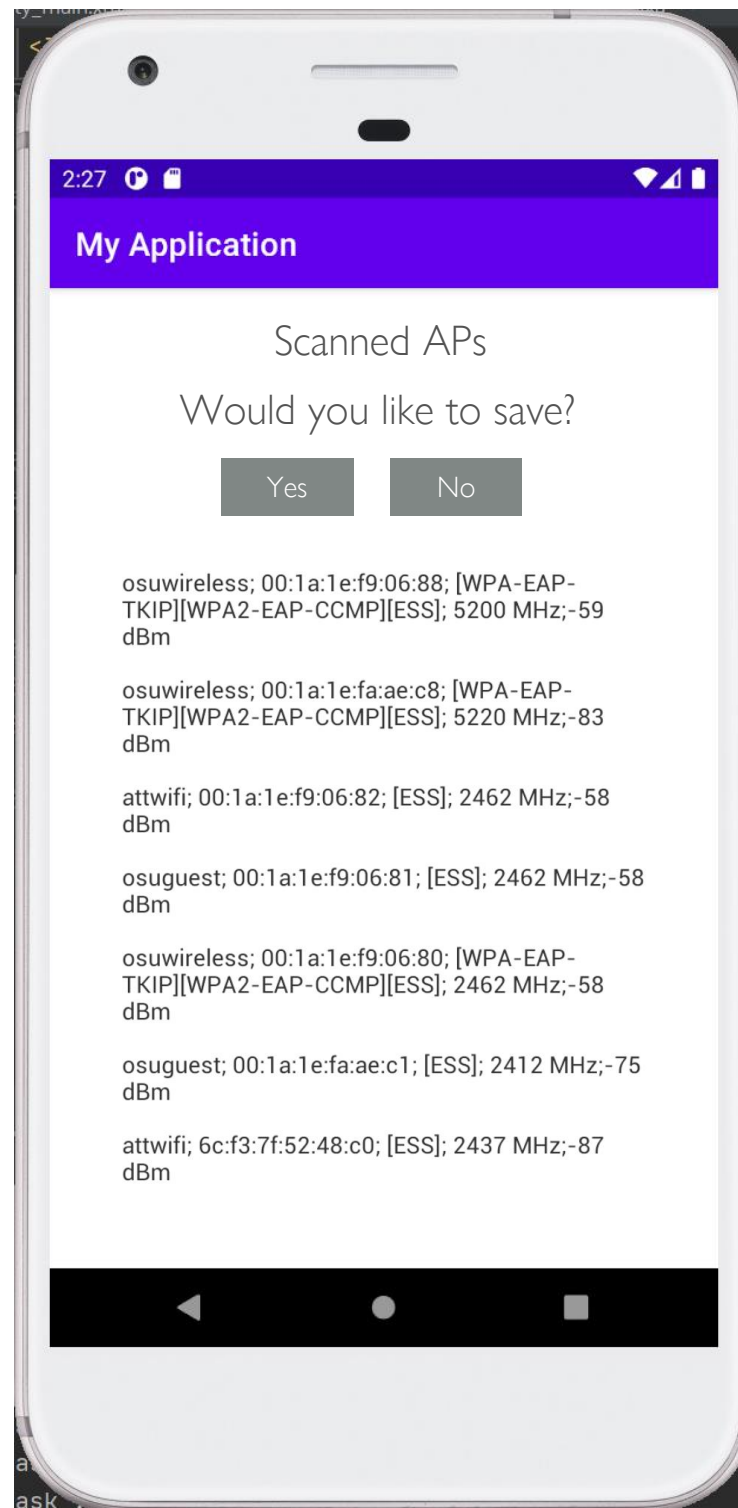
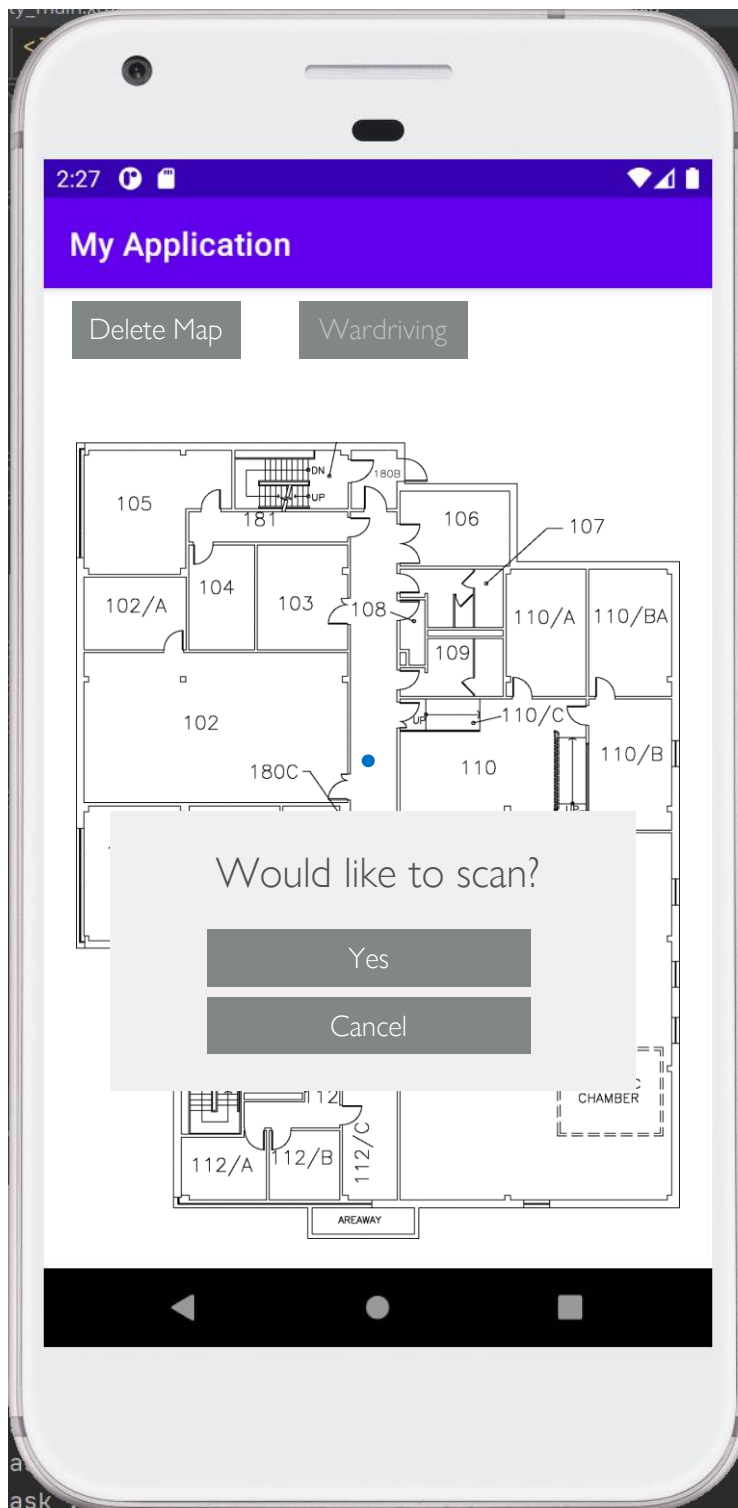
# Assignment: overview

- ◉ Implement a WiFi-based localization app
- ◉ Languages: Java/Kotlin in Android and Swift in iOS
- ◉ Functions
  - Upload/delete a floor map from photo album
  - Wardriving mode: choose a position on the map, scan APs, save the collected information
  - Real-time localization mode: scan APs and find the fittest position and show the position on the map
  - Exporting by email: send the collected data by email for analysis

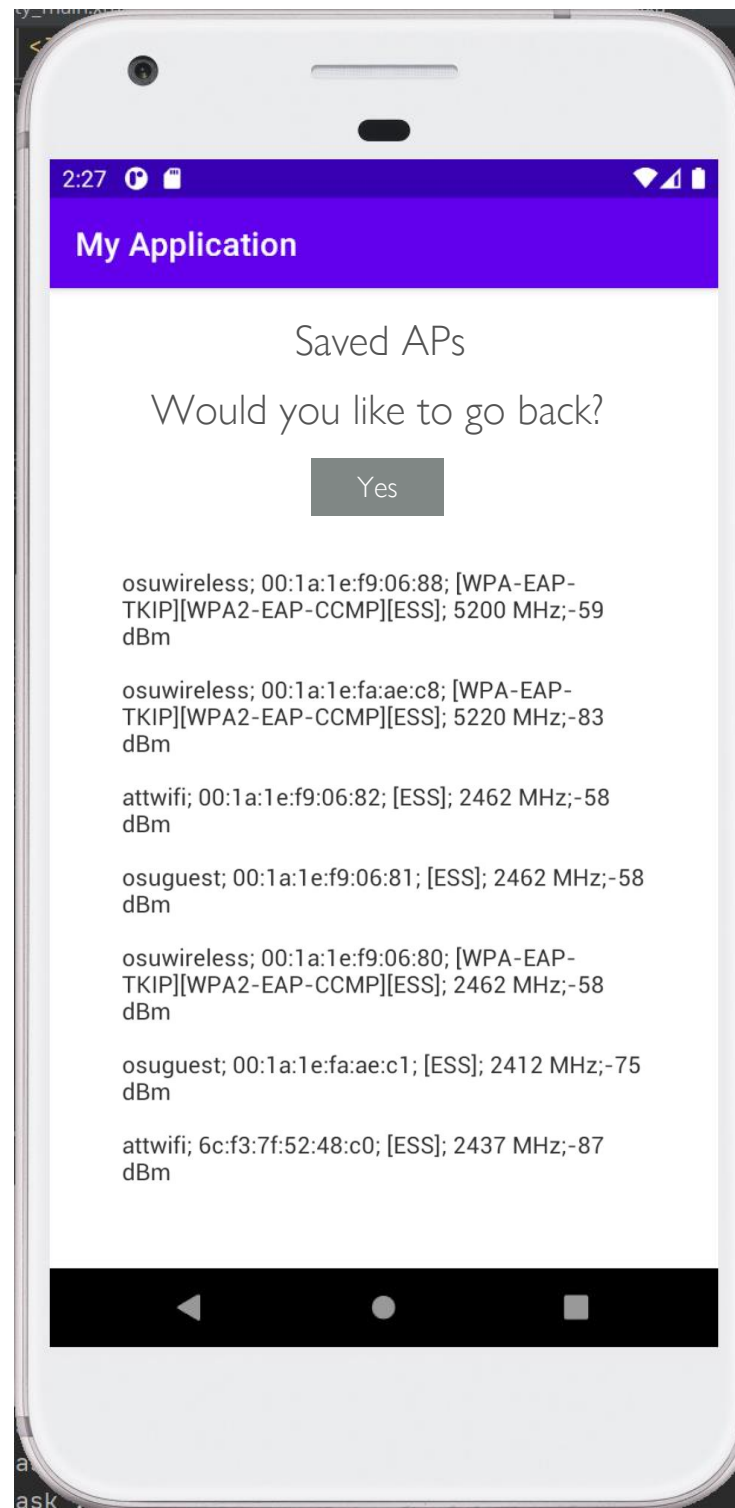
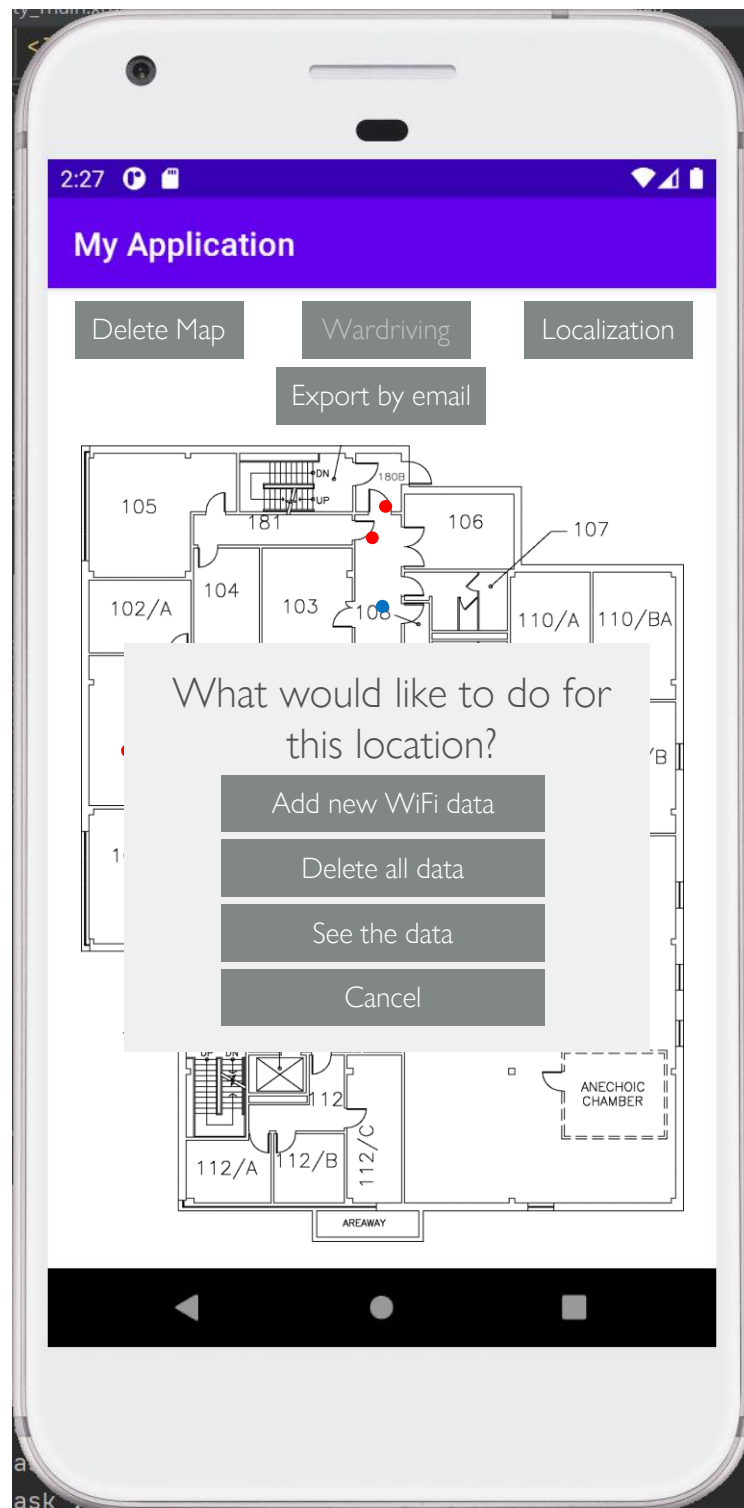
# Assignment: upload/delete a floor map



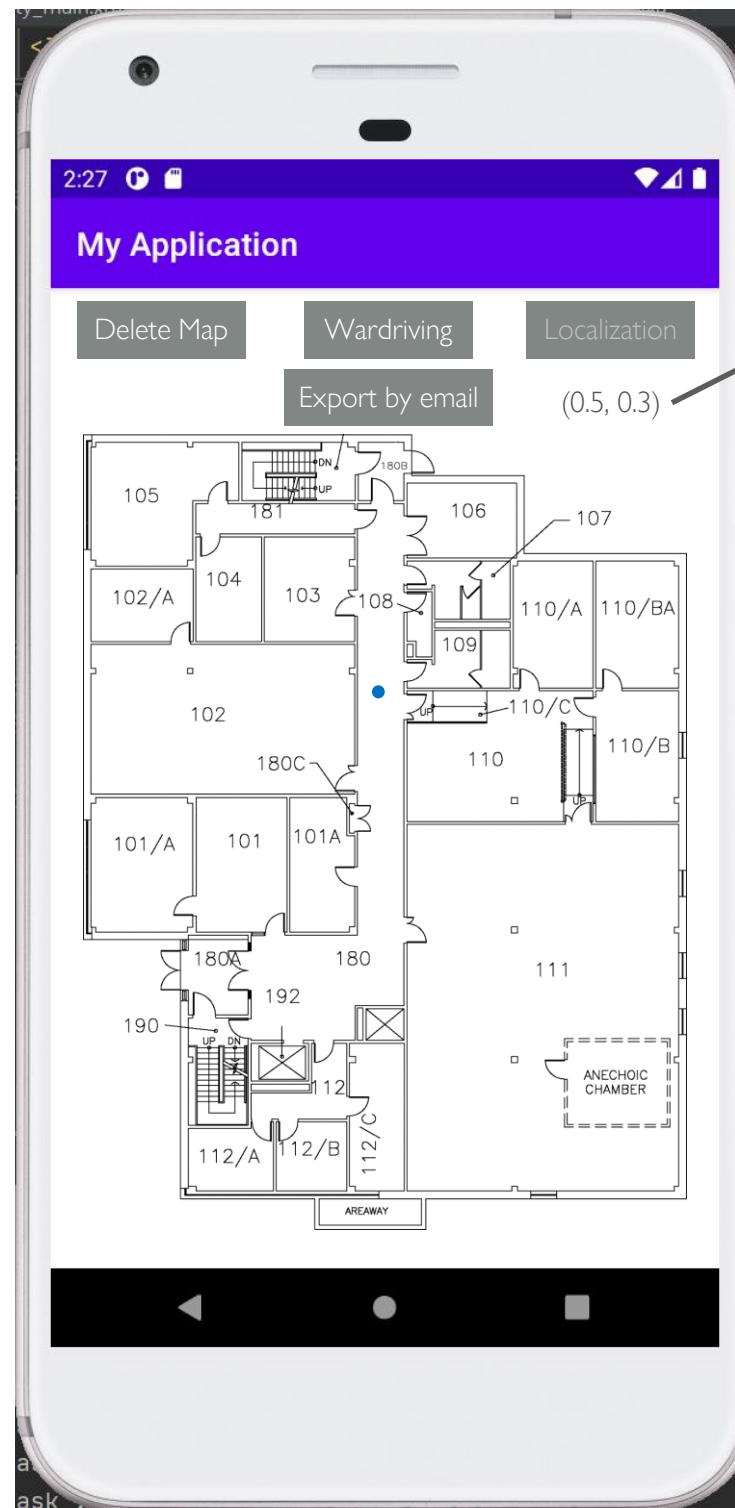
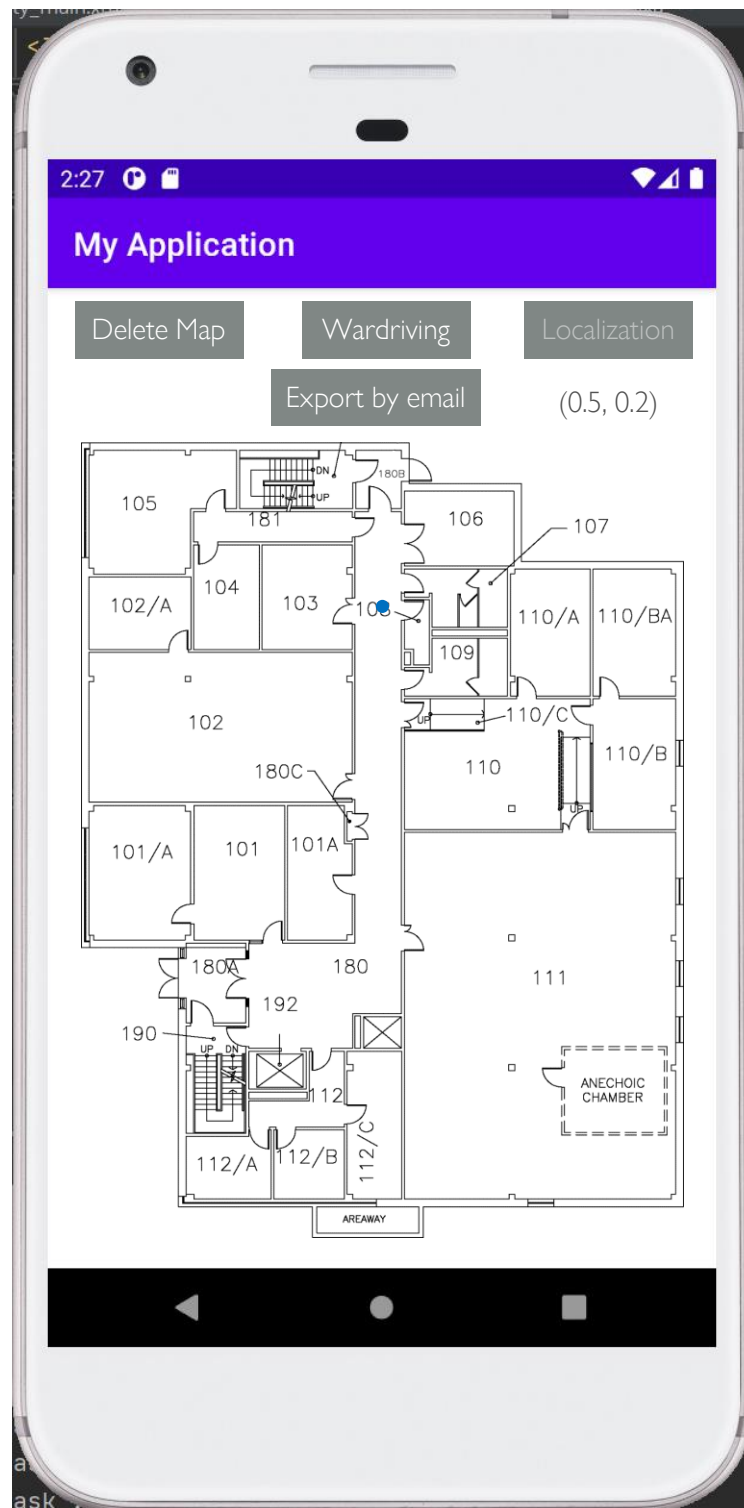
# Assignment: wardriving mode



# Assignment: wardriving mode



# Assignment: real-time localization mode



- x, y coordinates
- each value is between 0 and 1
  - left top corner is (0,0)
  - right bottom corner is (1,1)

# Assignment: submission

- Deadline: May 2<sup>nd</sup> (midnight)
- By Blackboard
- Submit a report (development environment, implementation details, data analysis, experiment result), source code, package file (APK for Android, IPA for iOS), experiment video (captured screen video, video showing your location), collected data (.csv format)
- 20% deduction per day if you submit late
- Evaluation criteria: basic functions (50%), algorithm (30%), analysis (20%)

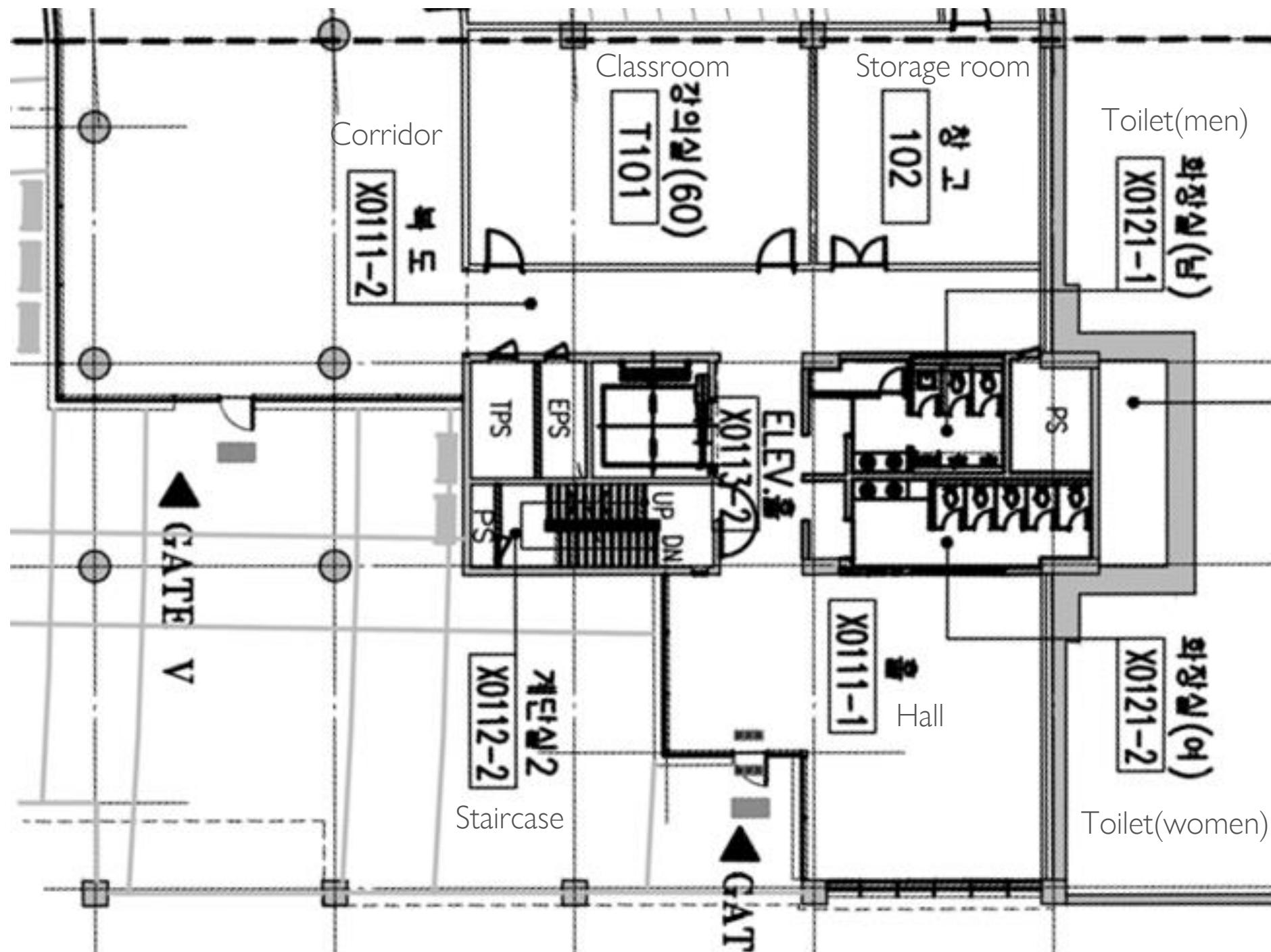
# Assignment: some details

- You can do the experiment on building 106 1<sup>st</sup> and 2<sup>nd</sup> floors
- You should use the maps that will be uploaded at Blackboard
- You can do wardriving only at the corridor areas
- You should show the performance of your app when the user is static and also moving
- We will cover how to collect sensor data (accelerometer, magnetometer, etc) in next topic, context awareness. These sensors can be used for higher localization accuracy.



# Assignment: floor map

## ◉ Building 106 1<sup>st</sup> floor



# Assignment: floor map

## ◉ Building 106 2<sup>nd</sup> floor

