

# Cleaning and Mapping Robotics Project

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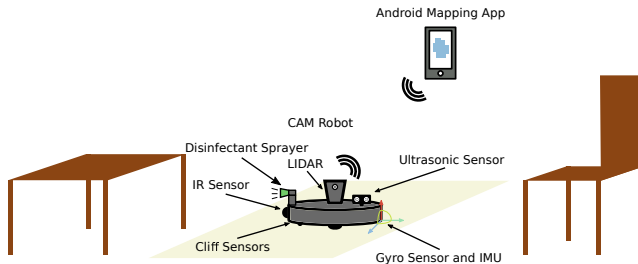
## 1 Introduction

## 2 Progress

- Jaden
- Brian

## 3 Plans

# Introduction



**Figure:** Diagram representing the working principle of the cleaning and mapping robot

# Progress

Jaden

- Successful interface of BeagleBone Black wireless and Irobot Create 2.
- Better control of Create 2 Module via Beaglebone.
- Incorporation of Python Libraries for Beaglebone.
- Obtained the Create 2 wire.

- Here are videos of the interfacing between the Irobot and Beaglebone.  
Note: I still must adequately study the libraries to do more with the Create 2 Module.

- Added a database to the app using the Android Room persistence library (abstraction layer over SQLite)
- Migrated `ListView` to `RecyclerView` for improved performance
- Improved refresh button to prevent adding the same robot multiple times to the `RecyclerView`
- Redesigned the app to include only two activities and eliminated the `TabLayout`

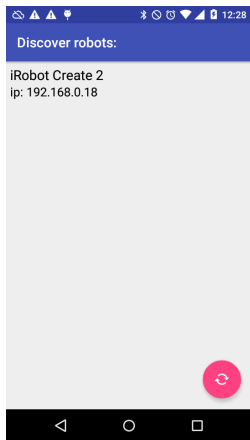


Figure: Main activity view

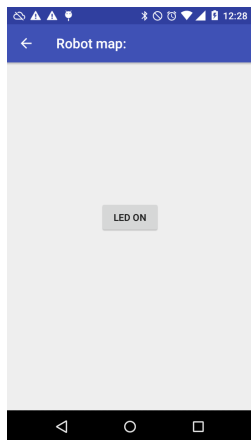


Figure: Mapping activity view





- Jaden's plans

- Interface with Beaglebone through the use of an app.
- Find a better way to supply power to the Beaglebone while it is interfaced to the Roomba.
- Explore features of the Beaglebone and consider the implementation of various sensors.

- Brian's plans

- Continue adding to the Python receiver program to send data from lidar, add separate receiving thread for clients
- Remove robot from RecyclerView when the connection is no longer available
- Upload app changes to the github repo
- Begin working on the mapping feature

# References I

-  Github python Libraries used for Create 2 module and Beaglebone:  
<https://github.com/MomsFriendlyRobotCompany/pycreate2>
-  Stack Overflow post  
<https://stackoverflow.com/questions/62704623/>

# Any Questions?