Overview
Our primary task was to develop search algorithms for two separate environments, a city block and an open field. Furthermore, we needed to create mesh networks as a solution to multiple drone deployments, in addition to communication with a base station. Finally, in order to evaluate the efficacy of different algorithms, we explored the option of using matlab.

Objectives
● Navigational algorithms: our main focus for the project was developing a program that helped drones navigate different environments for the purpose of finding a given target. Matt and John were the main contributors to this portion of the project.
● Mesh network communication: our second goal for the project was for the drones to be able to communicate with one another. This is so the drones would be able to extend their range for searching and find targets quicker as well. This portion of the project was worked on by Kevin and Yamin.
● Target Identification: this portion of the project was the implementation of detection methods for finding our target. There were multiple methods discussed and tried however we settled on IR blasters for our detection needs. This portion was worked on by James and Peter.

Approach
● During weekly meetings with our sponsor, we got continuous feedback, and guidance on the appropriate steps to take moving forward.
● Three groups were split between navigation algorithms, mesh network communication, and a hybrid of target identification and simulation.
● We wanted to start our algorithms in matlab, to make simulation and testing better. This led us to approach this problem in a language we knew (C++).
● Installed High Speed Multimedia onto each raspberry pi and have them communicate through the gateways.
● For target identification, we used an IR sensor and emitter, and developed an algorithm that continuously searched the environment for the target.
● Although not fully realized, we were able to start a foundation for future development for simulation in matlab. We took advantage of available libraries to create a drone in a 3D grid, and analyze its paths.

Outcomes
Finally, list the outcomes for this project making sure to clearly convey their implications for the sponsoring company:
● Our project laid the foundation for future refinement.
● We discovered paths of development that will facilitate faster development with the next team.