Final Project – Autonomous Navigation

This is an assignment for groups of 3-4 students. Please reuse groups from HW5. Each group will have to reserve time to work with an Arlo robot, please find the Robot sign-up/time reservation sheet link here. If there are any additional questions, please feel free to reach out to Max Panoff either through slack or email (m.panoff@ufl.edu)

SLAM:

1. Relaunch SLAM using your code from HW5
2. Use teleop_twist_keyboard to drive the robot around the room to build a complete map of the room
3. Use map_server to save the resulting map
    a. http://wiki.ros.org/map_server

Autonomous Navigation

1. Use map_server to load the saved map from the previous step
2. Add a move_base node to the host launch file
    a. http://wiki.ros.org/move_base
3. Modify the node in the launch file to use the provided YAML configuration files
4. Launch the launch file
5. Add a move_base/simple_nav_goal display to RViz
6. Use the 2D nav point option on RViz to set a navigation goal for the robot
7. Record the screen and the robot as the robot moves to that nav goal
8. Have the robot move to each corner of the room, starting with the corner to the left of the door, while facing out of the room and going to the rest in a counterclockwise motion.
9. Record the screen and the robot as the robot moves to the desired positions