Parallel Parking with Turtlebot 3 Burger

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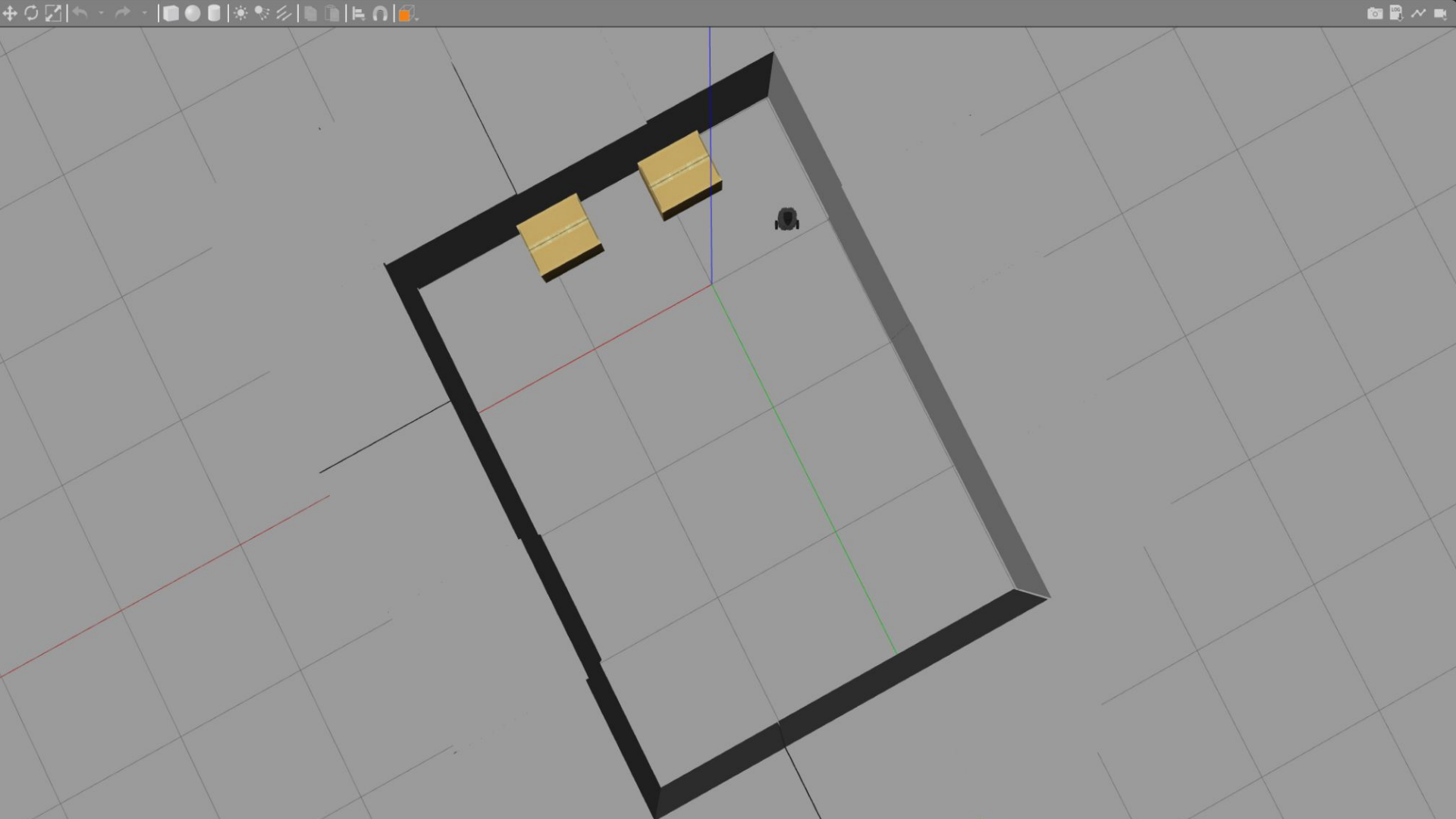
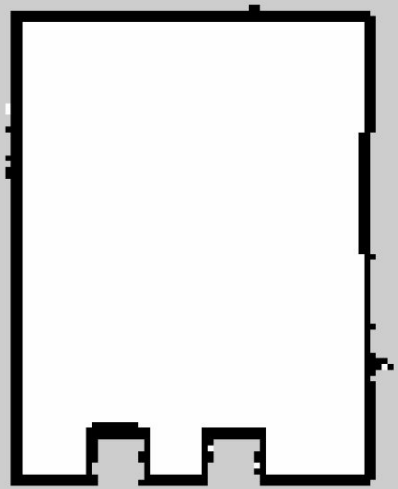
Project Description

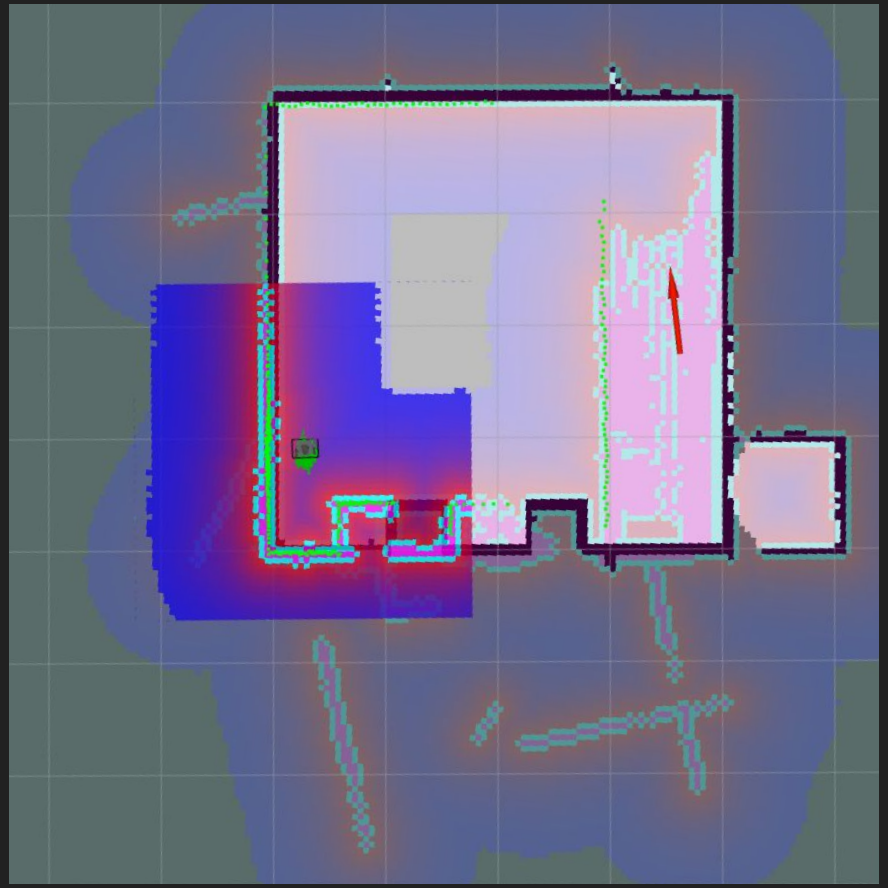
- Using a Turtlebot 3 Burger to autonomously parallel park in a viable spot
  - Utilize robot’s lidar sensors
  - RVIZ to map and use sensor data
  - ROS and Gazebo to map movement

Progress Report

- Using Gazebo we are creating a virtual world to maneuver the Burger
- We are creating a map using SLAM
- Able to move the Burger using the navigation within RVIZ







Challenges

- The installation of ROS within VirtualBox
- Linking the remote PC and the Turtlebot 3 Burger
- The ability to manipulate the robot’s movements

Next Steps

- Hard coding parallel parking method
- Identifying a viable parking spot
- Aligning the turtlebot in the correct position to perform hard coded movement

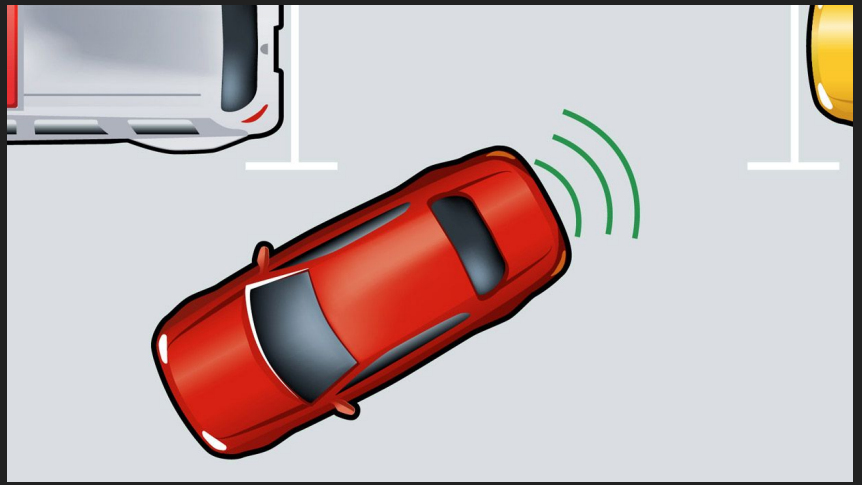
- Transfer the simulated algorithm to a turtlebot to test in a real world environment

End Goal

- Move turtlebot in a room
- Use lidar to map the room
- Based on the map find a parking spot
- Move turtlebot to parking location
- Perform a parallel park

Real World Parallels

- Driverless parking
- Charge docking for autonomous robots



Questions?