MCE550 – Robotics & Intelligent Systems
ROS – Assignment 2
Spring 2023

In this assignment, you will build on Assignment 1 by improving the TurtleBot3 movement and using ROS services.

Requirements

1. Use the same ROS package named **"simple_robot"** created in Assignment 1.
2. Instead of moving in a straight line the robot has to keep wandering any map it is spawned in, while avoiding obstacles.
3. Use the laser scanner to find the direction of the clear path and navigate the robot along this path until the next obstacle appears.
4. Until this point, the robot is navigating at a predetermined constant velocity. Create a ROS service that, when called, allows the user to change the linear and angular velocities at which the robot is wandering the map.
5. Create another ROS service to allow the user to switch from the "wander" mode to "chase" mode. In this mode the robot needs to chase a white ball placed in the Gazebo environment. To make it simple, assume that the ball will be the only white object in the environment.

Grading

Your assignment will be graded on the same bases as the ones followed in Assignment 1.

Submission

Assignments are to be submitted **individually on Blackboard**. Submit a compressed folder containing the **"simple_robot"** package directory, along with an updated README file.

Due Date: Friday, April 28, 2023.