

Week 4: Exercises

[M] Exercise 1

1. Create an own Catkin workspace
2. Create a packages in your own new Catkin workspace
3. Add pub/sub and service/client scripts in the newly created packages
4. Run the scripts
5. Follow the ROS (Python) tutorials on the ROS wiki.

[M] Exercise 2

1. Run the turtlebot 3 in Gazebo. (All variations.)
2. Inspect the topics, message types, . . .
3. Invoke the teleop and inspect the messages
4. Create custom bash scripts in ~/bin to kill all Gazebo or ROS processes.
5. Make a node which will drive the Turtlebot 3 forward.
6. Add the option to drive in a circle
7. Add the option to drive in a rectangle / square
8. Add the option to drive a certain path, described in a file. (You are free to choose the file format.)
9. Record a run with rosbag and replay it.
10. Use rqt_console and rqt_logger_level to inspect the runs.

[R] Exercise 3

1. Create new node called path_generator for the Turtlebot 3. It will read a number of different paths from a file. And send a random path using a custom message.
2. Create a world with a few red cones and try to detect the cones. Let the turtlebot drive towards a detected cone.
3. Create a path between the different cones and make the turtlebot drive over this path