

Assignement

Gazebo and TurtleBot3

- Read docs on Gazebo (and Rviz as well if you want to have a larger view of ROS capabilities).
- Launch Gazebo with the `turtlebot_world` environment (the `turtlebot_house` might be too heavy for your computer but you can try) and:
 - the Waffle robot
 - the Burger robot
- What are the differences for theses robots?
- Are they using the same topics on Gazebo? Is there any differences?
- Move manually the TurtleBot3 using `teleop_key`
- Show the `rqt_graph` to see the topics and nodes

Assignement

Gazebo and TurtleBot3

- Move TurtleBot3 Waffle using publisher node
 - Create your own package named `Tutorial1_TurtleBot`
(Recall: New packages must be created in the `src` folder from `catkin_ws`)
 - Create your own Python script for moving TurtleBot3
- Getting laser data of the Waffle using ROS commands and Python script
 - Create a new node to subscribe to the topic `scan` and get the information from the laser sensor.
 - Named it `get_laser_data.py`
 - We want to get the value of the scanner in front of the robot ----> `msg.range[0]`

LaserScan

<https://youtu.be/tEayzulupxE>

<https://youtu.be/kze3Z8rTkZo>

Assignement

Gazebo and TurtleBot3

- Make robot avoid obstacles in front of him
 - Make the robot to stop when an obstacle in front of the robot is closer than 0.5 m

- Hints:
 - Create a node which is a publisher and subscriber at the same time.
 - The node should subscribe to the topic scan and publish on the topic cmd_vel
 - Use the code implemented in the previous scripts and put everything together.
 - Use conditionals to make the robot behave as you want