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 using publisher node
  - Create your own package named `Tutorial_ 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 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