

ME 133B - TURTLEBOT BRINGUP

This guide describes how to turn on the TurtleBot, run the ROS nodes needed to interface with the various sensors, and run your own code or other packages to implement your project.

1. Open the notebook and turn it on if necessary, then log in using the password 'Sectw97]/' (note the second to last character is a square bracket)
2. Turn on the TurtleBot using the switch on its side
3. Open a terminal with *CTRL + ALT + T* in the notebook and start the TurtleBot node using the following command. This will allow the ROS network to subscribe to sensor data from the robot and also publish motion commands to it. The robot should make several beeps once it is connected.

```
$ roslaunch turtlebot_bringup minimal.launch
```

4. If you need the RGBD camera then open a new terminal and run the following command. The camera this TurtleBot is equipped with is an ASUS Xtion PRO LIVE, information for which can be found [here](#). Information on the ROS package which interfaces with the camera can be found [here](#)

```
$ roslaunch openni2_launch openni2.launch
```

5. If you need the LiDAR then open a new terminal and run the following command. The LiDAR this TurtleBot is equipped with is a Hokuyo URG-04IX-UG01, information for which can be found [here](#). Information on the ROS package which interfaces with the LiDAR can be found [here](#)

```
$ rosrun hokuyo_node hokuyo_node
```

NOTE: If the node fails to start with an error warning about permissions you may need to run the following command first, which grants all programs access to the Hokuyo USB port.

```
$ chmod a+rw /dev/ttyACM0
```

Running other packages

Many of the functions you may need for the project have likely already been written into a ROS package, some examples including [rtabmap](#) for mapping with RGBD, or [turtlebot_navigation](#) for navigating a known map.

If you wish to write your own code to interact with the ROS network then a good starting point would be to use the template from the extra credit in the last lab found [here](#), which can then be run with the command in a new terminal:

```
$ python me132b_lab3_template.py
```