***Activities notes 17/02/2022***

General tips:

* You can compile your project by using the command *catkin\_make* inside a folder containing *src.*
* Before being able to run your codes you’ll need to execute source *devel/setup.bash* each time you open a terminal. You can avoid it by adding that line to *~/.bashrc*, but keep in mind that you will to use the complete path to *setup.bash.*
* In our experience sometimes gazebo throws an error “bad variable name” that is usually solved by placing the workspace in another directory.

Activity 1: Talker and listener

**Description:** Implement the code presented in the power point, understand the functions involved and test that their work.

**Tools involved:** Basic ROS communication functions and terminal commands.

**Extra resources:** None.

Activity 2.1: Teleoperation of a mobile robot

**Description:** Use the *twist\_teleop* package to remotely control a mobile robot and examine the signals of the system using terminal tools.

**Tools involved:** Basic ROS communication functions, terminal commands and a launch file.

**Extra resources:** Download the *simulator* inside the week 1 folder in the github and read the *readme.md* file to start with the activity. Note that you can install the package ***twist\_teleop*** with ***sudo apt-get install ros-melodic-teleop-twist-keyboard*** you can run the node ***teleop\_twist\_keyboard.py*** to enable teleoperation.

Activity 2.2: Moving a mobile robot

**Description:** Use ros msgs to move a mobile robot around a 3D world.

**Tools involved:** Basic ROS communication functions, terminal commands and a launch files.

**Extra resources:** Download the *simulator* inside the week 1 folder in the github and read the ***readme.md*** file to start with the activity. You will find a blank python file in *simulator/solution/src/square.py* to program your solution. Additional information can be found in the course slides.

**Guidance and topics:**

* cmd\_vel is the topic used to send commands to the robot, the syntaxis of it’s messages can be found in the presentation.
* w\_l and w\_r are the topics that provide you with the encoder reading which can be used to estimate the traversed distance.