

Robotik - exercise 1

Team GIR : Evangelia Koumartzi , Julia Schuch

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Assignment 1-1: ROS Installation

Install the **ROS Noetic** distribution (recommended: together with *Ubuntu 20.04 LTS*, *better not in a virtual machine but native*). Therefore, the tutorial can be found at: <http://wiki.ros.org/noetic/Installation>

```
schuch@znote-t420s-02:~$ sudo apt install ros-noetic-desktop-full
Reading package lists... Done
Building dependency tree
Reading state information... Done
ros-noetic-desktop-full is already the newest version (1.5.0-1focal.20211007.220535).
0 upgraded, 0 newly installed, 0 to remove and 0 not upgraded.
schuch@znote-t420s-02:~$
```

To get a basic understanding of the basic concepts in ROS, read the subsection 1-5 of the tutorial: <http://wiki.ros.org/ROS/Tutorials>

```
schuch@znote-t420s-02:~$ rostopic list
/my_turtle
/rosout
schuch@znote-t420s-02:~$ rostopic ping my_turtle
rostopic: node is [/my_turtle]
pinging /my_turtle with a timeout of 3.0s
xmlrpc reply from http://znote-t420s-02:34803/ time=0.896692ms
xmlrpc reply from http://znote-t420s-02:34803/ time=1.802921ms
xmlrpc reply from http://znote-t420s-02:34803/ time=0.733614ms
xmlrpc reply from http://znote-t420s-02:34803/ time=1.455545ms
```

Setup your environment variables. Read the section 2 of the tutorial: <http://wiki.ros.org/ROS/Tutorials/InstallingandConfiguringROSEnvironment>

```

schuch@znote-t420s-02:~$ source /opt/ros/noetic/setup.bash
schuch@znote-t420s-02:~$ printenv | grep ROS
ROS_VERSION=1
ROS_PYTHON_VERSION=3
ROS_PACKAGE_PATH=/opt/ros/noetic/share
ROSLISP_PACKAGE_DIRECTORIES=
ROS_ETC_DIR=/opt/ros/noetic/etc/ros
ROS_MASTER_URI=http://localhost:11311
ROS_ROOT=/opt/ros/noetic/share/ros
ROS_DISTRO=noetic
schuch@znote-t420s-02:~$

```

Open a terminal window and run the command `roscore`.

```

roscore http://bluePearl:11311/
Setting up python2.7 (2.7.18-1-20.04.1) ...
Setting up libpython2.7-stdlib:amd64 (2.7.17-2ubuntu4) ...
Setting up subversion (1.13.0-3) ...
Setting up python3-wstool (0.1.18-2) ...
Setting up python3-brz (2.0.2-4ubuntu2) ...
Setting up python2 (2.7.17-2ubuntu4) ...
Setting up brz (3.0.2-4ubuntu2) ...
update-alternatives: using /usr/bin/brz to provide /usr/bin/brz (brz) in auto mo
de
Setting up python3-github (1.43.7-1) ...
Setting up brz (2.7.0+brz602+brz) ...
Setting up git (1:2.25.1-1ubuntu3.2) ...
Setting up python3-roscpp (0.7.0-4) ...
Setting up mercurial-common (5.3.1-1ubuntu1) ...
Setting up mercurial (5.3.1-1ubuntu1) ...
Creating config file /etc/mercurial/hgrc.d/hgext.rc with new version
Processing triggers for libc-bin (2.31-0ubuntu9.2) ...
Processing triggers for man-db (2.9.1-3) ...
Processing triggers for desktop-file-utils (0.24-1ubuntu3) ...
Processing triggers for mime-support (3.0.4ubuntu1) ...
Processing triggers for gnome-menus (3.36.0-1ubuntu1) ...
nva@bluePearl:~$ sudo apt install python3-roscpp
Reading package lists... Done
Building dependency tree
Reading state information... Done
python3-roscpp is already the newest version (0.21.0-1).
0 upgraded, 0 newly installed, 0 to remove and 92 not upgraded.
nva@bluePearl:~$ roscore
... Logging to /home/evaj/.ros/log/65e0d7ac-34f4-11ec-a9e8-69451a85a253/roslaunch-bluePearl-32510.log
Checking log directory for disk usage. This may take a while.
Press Ctrl-C to interrupt
Done checking log file disk usage. Usage is <1GB.
started roslaunch server http://bluePearl:45123/
ros_comm version 1.15.13

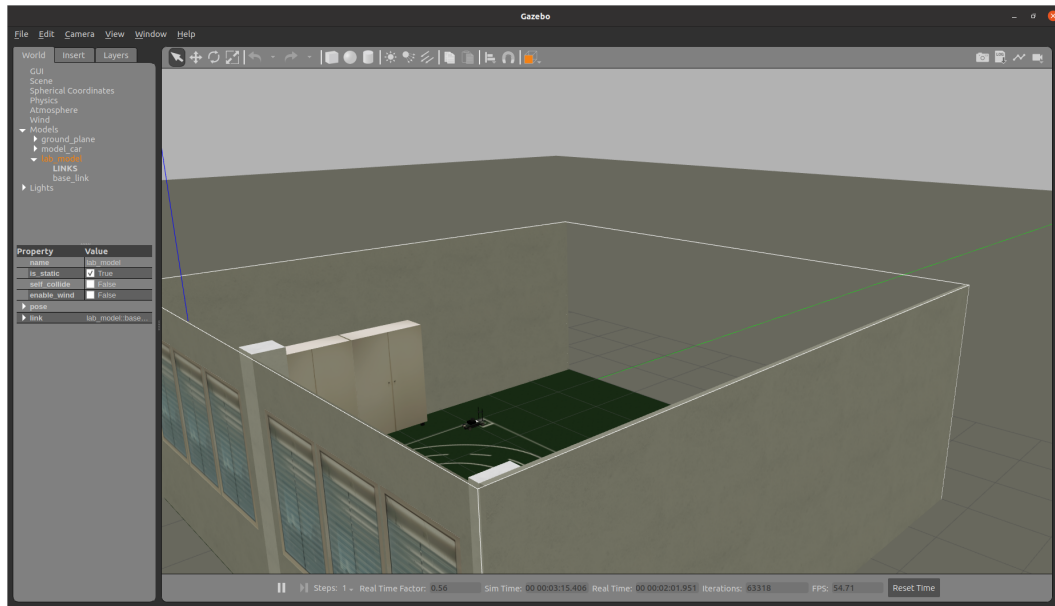
SUMMARY
=====
PARAMETERS
 * /roslaunch: noetic
 * /rosversion: 1.15.13
NODES
auto-starting new master
process[master]: started with pid [32520]
ROS_MASTER_URI=http://bluePearl:11311/
setting /run_id to 65e0d7ac-34f4-11ec-a9e8-69451a85a253
process[roscout-1]: started with pid [32530]
started core service [/roscout]

```

Assignment 1-2: AutoMiny Installation

Install the AutoMiny software using the tutorial at: <https://autominy.github.io/AutoMiny/docs/installation/>

Run the simulator after installation using:
`roslaunch autominy Simulated.launch`



Assignment 1-3: Create a repository

Create a ROS workspace named after your teamname like this *catkin_ws_TEAMNAME*. Create a Git repository from your workspace and make it available at a public Git hosting service like GitHub.

https://github.com/evakoumartzi/catkin_ws_GIR.