Praktikum Mess- und Regelungstechnik SoSe2022

Cheatsheet ROS

Simon Klüpfel, Lukas Zeller

Initialize and source workspace

1. terminal setup ros environment:

```
source /opt/ros/noetic/setup.bash
```

2. catkin workspace im home erstellen

```
$ mkdir -p ~/catkin_ws/src
$ cd ~/catkin_ws/
$ catkin_make
```

3. source this workspace

```
source devel/setup.bash
```

4. check

```
$ echo $ROS_PACKAGE_PATH
```

should output:

```
/home/youruser/catkin_ws/src:/opt/ros/noetic/share
```

Commands

1. rospack *allows you to get information about packages*

```
$ rospack find roscpp
```

2. roscd *is part of the* rosbash *suite. It allows you to change directory*

```
$ roscd roscpp/subdir
```

3. pwd *see current directory*
4. rosls *allows you to directly ls in a package by name rather than by absolute path*
5. Creating packages

```
$ cd yourcatkinworkspace/src
$ catkin_create_pkg packagename pkgdependency1 pkgdependency2
```

6. Building packages/rebuild workspace

```
$ cd yourcatkinworkspace/src
$ catkin make
## source workspace first! ##
package.xml file provides meta inforamtion about the package
```

7. Starting roscore (*Terminal is then occupied!*)

```
$ roscore
```

8. Display information about the ROS nodes that are currently running

```
$ rosnode list
```

should output:

```
rosout ....
```

Dictionary

1. Nodes *is an executable that uses ROS to communicate with other nodes*
2. Messages *ROS data type used when subscribing or publishing to a topic*
3. Topics *Nodes can publish messages to a topic as well as subscribe to a topic to receive messages*
4. Master *Name service for ROS (i.e. helps nodes to find each other)*
5. rosout *ROS equivalent for stdout/stderr*
6. roscore *Master + rosout + parameter server (parameter server will be introduced later)*

Good to know

1. LAN-Config: (*in Ubuntu Network Settings*)
   Address: 192.168.0.55, Netmask: 255.255.255.0
2. Append AMCL Parameters: *go to:*

   ```
   amcl_diff_cfg.yaml location: ~/catkin_ws/src/volksbot/launch/config
   ```

3. Origin in RViz: *[-42.400000, -20.000000, 0.000000]*