

THE CHINESE UNIVERSITY OF HONG KONG
DEPARTMENT OF ELECTRONIC ENGINEERING

2021-22 Term 1

ELEG4701 Intelligent Interactive Robot Practice
Laboratory 3: Introduction to ROS

Objective:

In this lab session, you will learn:

1. Install ROS on ubuntu
2. Run rosnod and control turtle with keyboard
3. Let the turtle runs a circle, finish this task in terminal
4. Create a new package, and add new dependence in the package.xml file
5. Let the turtle runs a circle, rectangle
6. Let the turtle stop at a desired position

NAME: _____

SID: _____

DATE: _____

PART 1: Install ROS on ubuntu

Please follow the guideline in the slides.

After you finish the installation, run the turtle and control it with keyboard.

After you finish this task, please show it to tutors.

Checked by TA:_____

PART 2: Run a circle and rectangle using commands in the terminal

Please follow these steps:

1. Run ROS core;
2. Run turtlesim;
3. Pub a topic message;
4. Modify the commands in the command line and let the turtle runs a circle;

You can use any parameters as if it runs a circle;

5. Call a service request, generate a new turtle with the name “turtle_last 3 number of you SID”, such as turtle_135, using the absolute position command, let the new turtle draw a square with length 5.

After you finish this, please show it to tutors.

Checked by TA:_____

PART 3: Create a new package, run a circle and a rectangle

Please follow these steps:

1. Please follow the guideline in the slides to create a new ROS workspace with the name catkin_ws;
2. Please follow the guideline in the slides to create a new package named eleg_T03_topic;
3. Edit the source code and finish the to do list in it;
4. Copy the source code to create a new file with name “velocity_publisher”, modify the code thus the turtle can run a rectangle.

After you finish this, please show it to tutors.

Checked by TA:_____

PART 4: Stop the turtle at a desired position

Please follow these steps:

1. Move the “move_turtle.py” to scripts folder;
2. catkin_make in work space;
3. Edit the source code and finish the tasks list in it.

After you finish this, please show it to tutors.

Checked by TA:_____