COGROB HOMEWORK III: THE BAD BASH

Hands-On Practice With The Robot Operating System (ROS)

Due by 23:59 on January 26th, 2023 (Penalty-Free Submission Until March 21st, 2023)

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Guidelines

In this assignment, you will create a ROS package with a single Python node, which can communicate with the TurtleSim tool and cause the turtle to write out the letters in "TECHNION". An example of this can be seen in the figure below:

TurtleSim

To turn on the TurtleSim tool, first open two terminals in Ubuntu 20.04 and source ROS Noetic using the command `source /opt/ros/noetic/setup.bash` in each of them. Then, in one terminal run the command `roscore` (to activate the ROS master) and in the other run the following command to launch TurtleSim: `rosrun turtlesim turtlesim_node`. Note that you can't change the window size, so you'll have to make your letters fit!

Note: If you are working from a virtual machine (VM) or the Windows Subsystem for Linux (WSL), you will need to use an X Server to be able to see the graphical window of TurtleSim.

Deliverables

You must submit the following files to Moodle as a single zip file in order to get full credit for the assignment:

- A folder called `hw3_pkg` (i.e. the actual ROS package that you created), containing the contents of your implemented package; specifically, it must contain a folder called `scripts`, which contains your node as a Python file called `hw3_node.py` [80%]
  - The `hw3_node.py` file is a node file which tells the turtle to move in a manner which will draw out the letters in "TECHNION" within the boundaries of the TurtleSim graphical window
  - The node should be executable, so that the command `rosrun hw3_pkg hw3_node.py` activates it
- An image file showing the TurtleSim graphical window with the letters in "TECHNION" written out (example shown above) [15%]
- A meme of your choice, related to AI and robotics (as an image file) [5%], best one gets five extra points!

Good luck, and we hope you enjoy the assignment!