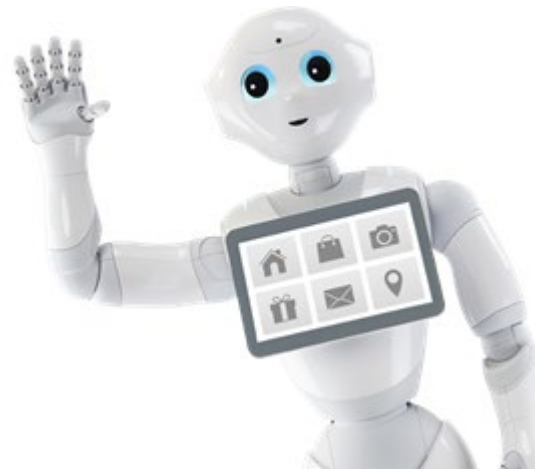
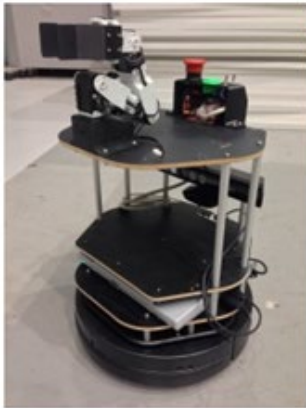




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03 Robot Software Development (2/2) : ROS Publisher & Subscriber



Previous Assignments / Prerequisites

1. Setup robot development system
 - Install **Ubuntu 16.04**
 - Install **ROS Kinetic**
 - Install TurtleBot2 packages (optional)
2. Sign up GitHub and get familiar
 - Create own repositories for class assignments
3. Do ROS tutorials
 - Beginner level

Exercise: ROS Package

Creating a Workspace for Catkin

- Reference: http://wiki.ros.org/catkin/Tutorials/create_a_workspace
- `$ mkdir -p ~/catkin_ws/src`
- `$ cd ~/catkin_ws/`
- `$ catkin_make` (build the workspace)

Creating a ROS Package

- Reference: <http://wiki.ros.org/ROS/Tutorials/CreatingPackage>
- `$ cd ~/catkin_ws/src`
- `# catkin_create_pkg <package_name> [depend1] [depend2] [depend3]`
- `$ catkin_create_pkg beginner_tutorials std_msgs rospy roscpp`
- `$ cd ~/catkin_ws`
- `$ catkin_make` (build the workspace)

Exercise: ROS Publisher

Writing a Simple ROS Publisher (Python)

- Reference:

<http://wiki.ros.org/ROS/Tutorials/WritingPublisherSubscriber%28python%29>

Exercise: ROS Subscriber

Writing a Simple ROS Subscriber (Python)

- Reference:

<http://wiki.ros.org/ROS/Tutorials/WritingPublisherSubscriber%28python%29>

Assignments

1. Write a pair of ROS Publisher and Subscriber Nodes

- In every second, the publisher node publishes user name and counter to a topic.
- The subscriber node subscribes the topic and display the topic messages on terminal.

2. Upload to GitHub

- Create own repository and upload the source code and results (terminal screenshots) to GitHub.



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