

Robotics Lab: Homework 0

Week 2

Mario Selvaggio

This document contains hands-on exercises about linux commands, git and docker.

Linux commands

1. List the files contained in your home folder
2. List the files contained in your Desktop folder
3. Create a new text file, named as your surname in your home folder
4. Write your name and surname in the file created at step 3 using terminal commands
5. Create the directories `/r1_lab/hmwk0` in your home folder using just one command
6. Move the text file created at step 3 in the `/r1_lab/hmwk0` folder created at the step 5. List the content of the directory
7. Rename the `hmwk0` directory into `hmwk1`
8. Use `grep` command to search your surname into the file created at step 3
9. Change the owner and group of this file into root and root
10. Remove the `r1_lab` directory
11. Check the internet connection of your computer using the linux terminal
12. Create a bash script. The goal of the script is to automatically do the steps from 3 to 9.
13. Change the owner of all the files and directories under `r1_lab`

Git

Start using github

1. Create an account on www.github.com (use your preferred e-mail)
2. Create a personal access token
3. Add this token to a local configuration file (to use it when it's needed)
4. Alternatively to authentication through token, generate a SSH key and add it to the ssh-agent (see [here](#))
5. Create a local repository with an `hello_world` source file
6. Create a new public remote repository on github
7. Push the local repository to github

Create a new branch

1. Starting from the previous repository create a new branch called `dev`
2. Modify the `hello_world` source file
3. Upload the repository pushing to the new branch

Merge the branches

1. Merge the two branch of the previous exercise in the master one

Docker

Docker creation

1. Create a development folder where to put your source file
2. Create a container starting from a ROS image (use the script)
3. Create a file on the host development folder with some content
4. Check that this file exists in the container

Docker management

1. Create multiple containers with the same image
2. Remove all the containers

Docker connection

1. Create a new container
2. Connect to the same container with multiple terminals