

# Robotics Lab: Hands-on class

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/ex0` in your home folder using just one command
6. Move the text file created at step 3 in the `/r1_lab/ex0` folder created at the step 5. List the content of the directory
7. Rename the `ex0` directory into `ex1`
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](http://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. Create a local repository with an `hello_world` source file
5. Create a new public remote repository on github
6. 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 ROS1 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