COMP0037 2021 / 2022 Robotic Systems

Lab Instructions

COMP0037 Teaching Team

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Introduction

- Apply for a student licence on JetBrain to download PyCharm
- Install PyCharm Professional IDE (free for student)
- Install Python 3. The exercises require a local installation of Python 3, along with a number of additional packages for numerical programming, plotting and machine learning. We suggest using the latest stable release of Python 3.9 (currently 3.9.7) as Python 3.10 has recently been released but many students have had issues with PyPI dependencies not yet being up to date, so install this version with caution. Although we recommend a more recent Python, the code has also been tested on Python 3.6.8, which is the version currently installed on some of the CS lab machines. It is possible, albeit suboptimal, to set up and run the exercises on one of those machines via SSH.
- Download the material from the Moodle page of the module: COMP0037 Robotic Systems and put the lab material in a folder named `comp0037-labs`
- Open the folder `comp0037-labs` in PyCharm
- Create and activate a virtual environment. A straightforward way to configure your virtual environment is to store it in a hidden subdirectory of your working directory (i.e., the directory containing the folder comp0037-labs).

```
$ cd comp0037-labs
$ python -m venv .venv
# On Unix/MacOS:
$ source .venv/bin/activate
# On Windows:
$ .venv\Scripts\activate.bat
```

- Install Python package requirements:

```
$ pip install -r requirements.txt
```

- Read the week's lab exercises document `COMP0037_Lab_N.pdf`
- Add your code to the scripts mentioned in the document
- Run the script either from the command line to see your code

About

This documents contains instructions for lab exercises for the COMP0037 Robotic Systems module for taught MSc students at UCL, delivered in Spring 2022. Exercises are designed to be attempted in the on-campus lab sessions on Friday afternoon, though you are free to do additional work in your own time if you wish.

Lab attendance will be monitored, but the exercises are **not graded**. You are welcome to discuss and help each other with these tasks and to ask for assistance and clarification from the TAs, but there is nothing to be gained by simply copying each others' work.

Content

In addition to the spec and script for each week, there are a few other files are available on Moodle:

- `Instructions.pdf`: this file.
- `requirements.txt`: a list of additional Python packages to install.