Software installation for experiments 6,7, and 8

VCP (virtual COM port) drivers for FT232RL

Install the following drivers to your PC:

https://ftdichip.com/drivers/vcp-drivers/

		Processor Architecture							
Operating System	Release Date	X86 (32-Bit)	X64 (64-Bit)	PPC	ARM	MIPSII	MIPSIV	SH4	Comments
Windows (Desktop)*	2021-07-15	2.12.36.4	2.12.36.4	–	2.12.36.4A****	–	–	–	WHQL Certified. Includes VCP and D2XX. Available as a setup executable Please read the Release Notes and Installation Guides.
Windows (Universal)***	2021-11-12	2.12.36.4U	2.12.36.4U	–	–	–	–	–	WHQL Certified. Includes VCP and D2XX.
Linux	–	–	–	–	–	–	–	–	All FTDI devices now supported in Ubuntu 11.10, kernel 3.0.0-19 Refer to TN-101 if you need a custom VCP VID/PID in Linux VCP drivers are integrated into the kernel.
Mac OS X 10.3 to 10.8	2012-08-10	2.2.18	2.2.18	2.2.18	–	–	–	–	Refer to TN-105 if you need a custom VCP VID/PID in MAC OS
Mac OS X 10.9 to 10.13	2019-12-24	–	2.4.2	–	–	–	–	–	This driver is signed by Apple

PyCharm installation:

Download and install the **PyCharm Community Edition** (scroll down on the page) with default settings from the following URLs:

Windows		PyCharm IDE	https://www.jetbrains.com/pycharm/download/?section=windows
Mac		PyCharm IDE	https://www.jetbrains.com/pycharm/download/?section=mac
Linux		--	No installation is needed, Python is built-in. Check the Python version using the command `which Python3`.

Setting up the project directory:

a. For Linux: make a directory /ME381/exp_2R_serial at a location of your choice

```
mkdir -p <~/path/to/your/location>/ME381/exp_2R_serial
```

b. For Windows and Mac: open the PyCharm IDE and create File → New Project with the name 'exp_2R_serial' in a directory named ME381, as shown in Fig. 1 and 2.

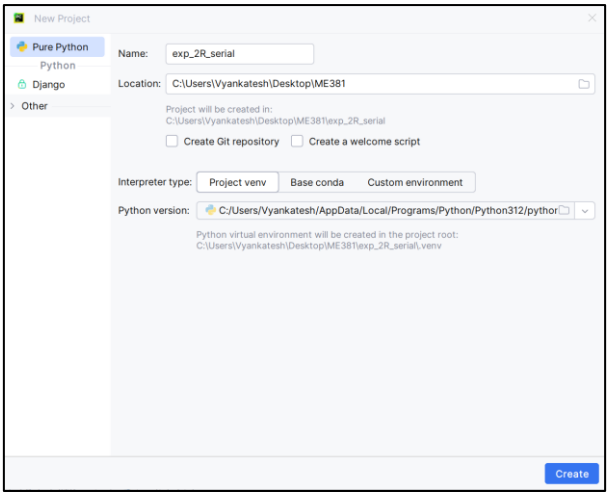

Figure 1

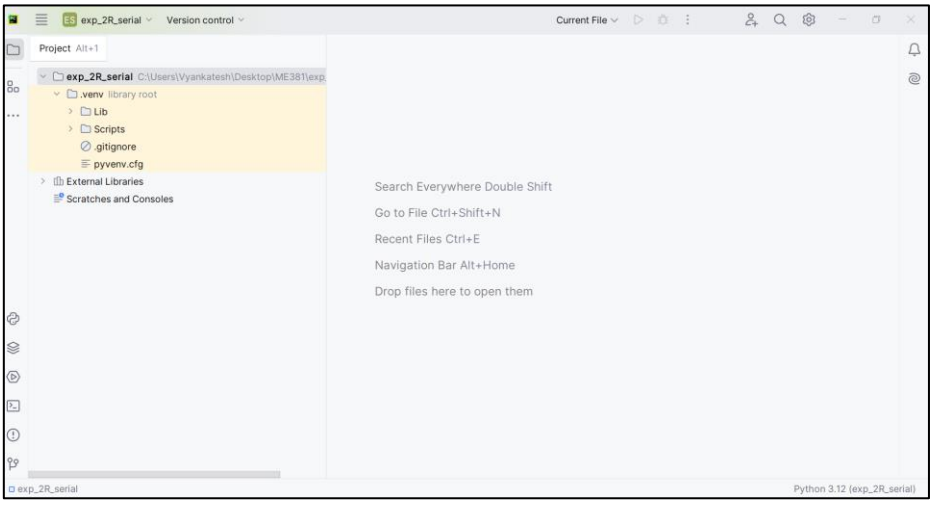

Figure 2

Installing the manipulator library:

1. Download the 'LabRobotsIITK' repository: https://github.com/v-r-a/LabRobotsIITK in the project directory.
2. Go to the <> Code button and clone/download (see Fig. 3) it in the project directory /ME381/exp_2R_serial.
3. Extract all the contents in the same directory. The zip file may be deleted. The extracted folder is seen in PyCharm (or your project directory in Linux) as shown in Fig. 4.

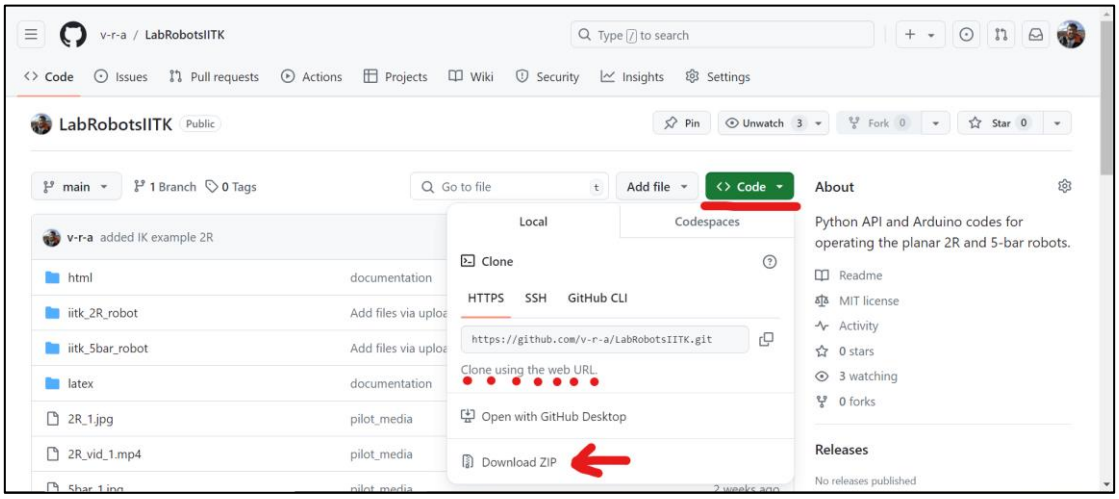

Figure 3

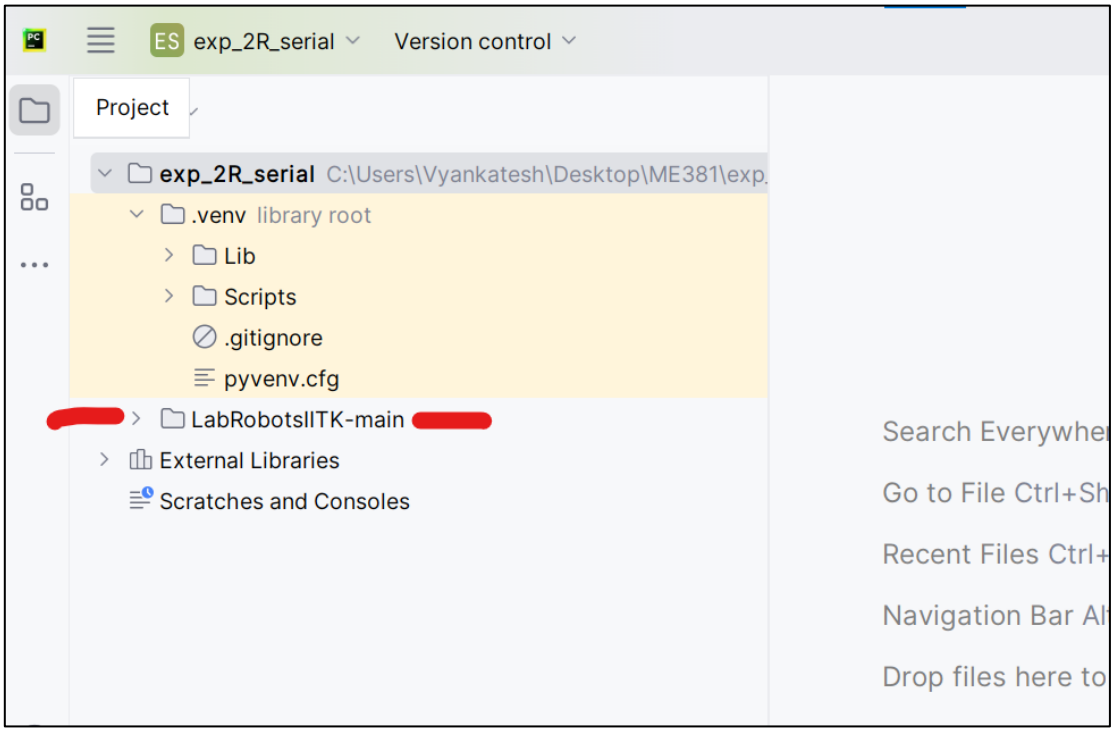

Figure 4

P.T.O.

Installing other Python libraries:

PySerialTransfer

Linux: `pip install pySerialTransfer`

Windows/Mac:

`PySerialTransfer` library is must for the program to work. One can install it using PyCharm as follows:

1. File → Settings → Project: exp_2R_serial →Python Interpreter. See Fig. 5.

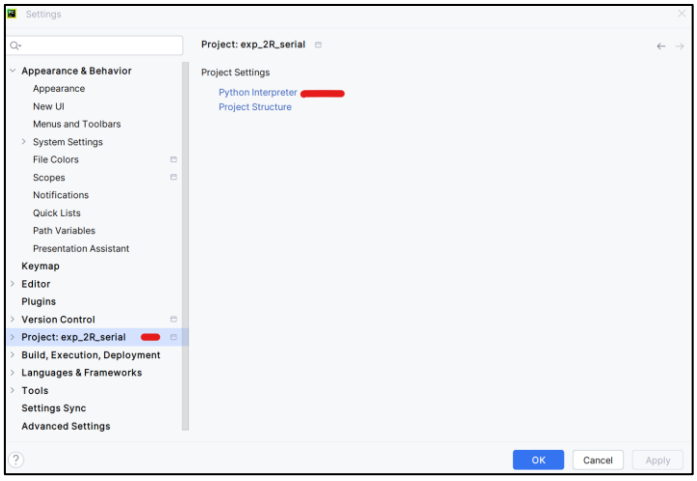

Figure 5

2. Add package 'PySerialTransfer' by searching for it as shown in Fig. 6 and Fig 7. Install the package, **wait till the package is installed successfully** (see Fig. 8) and close the window.

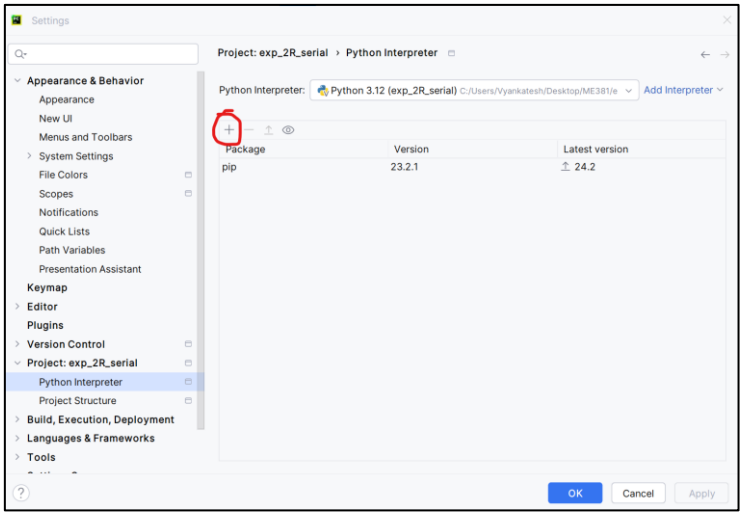

Figure 6

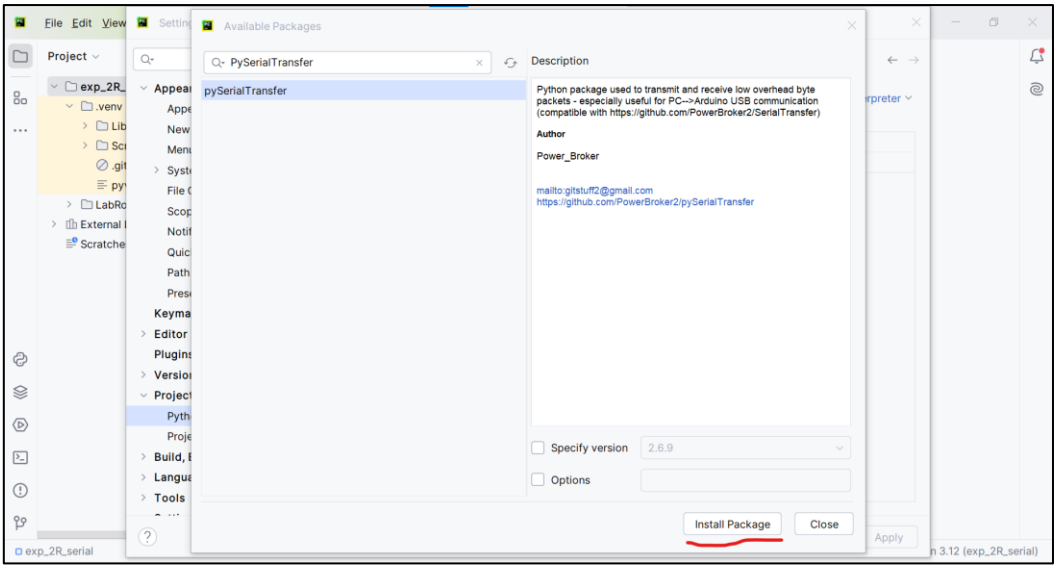

Figure 7

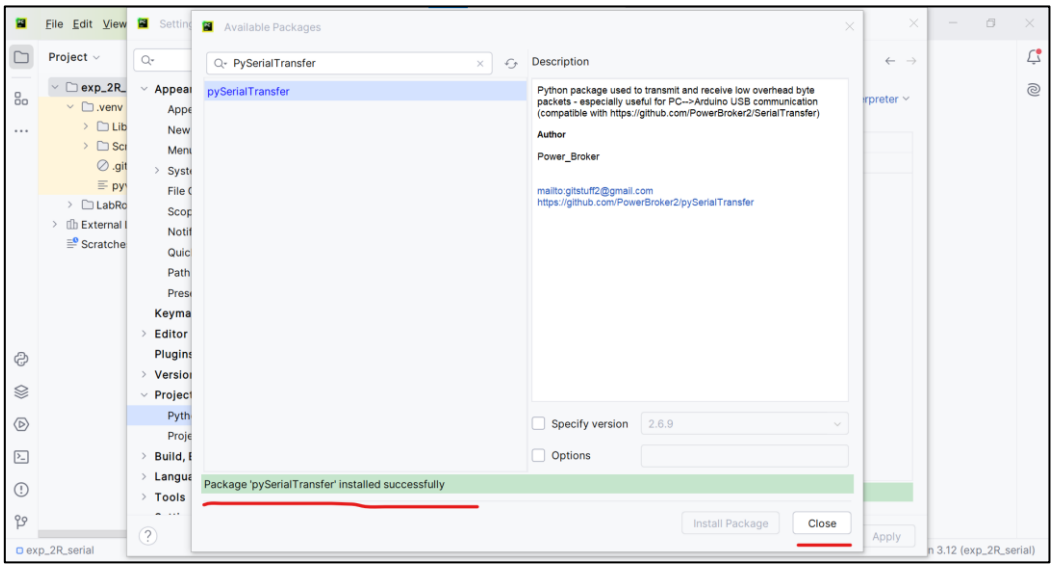

Figure 8

MuJoCo

Linux: `pip install mujoco`

Windows/Mac: PyCharm

1. File → Settings → Project: exp_2R_serial →Python Interpreter. (Same as last installation)
2. Add package ‘mujoco’ by searching for it as shown in Fig. 9. (next page)

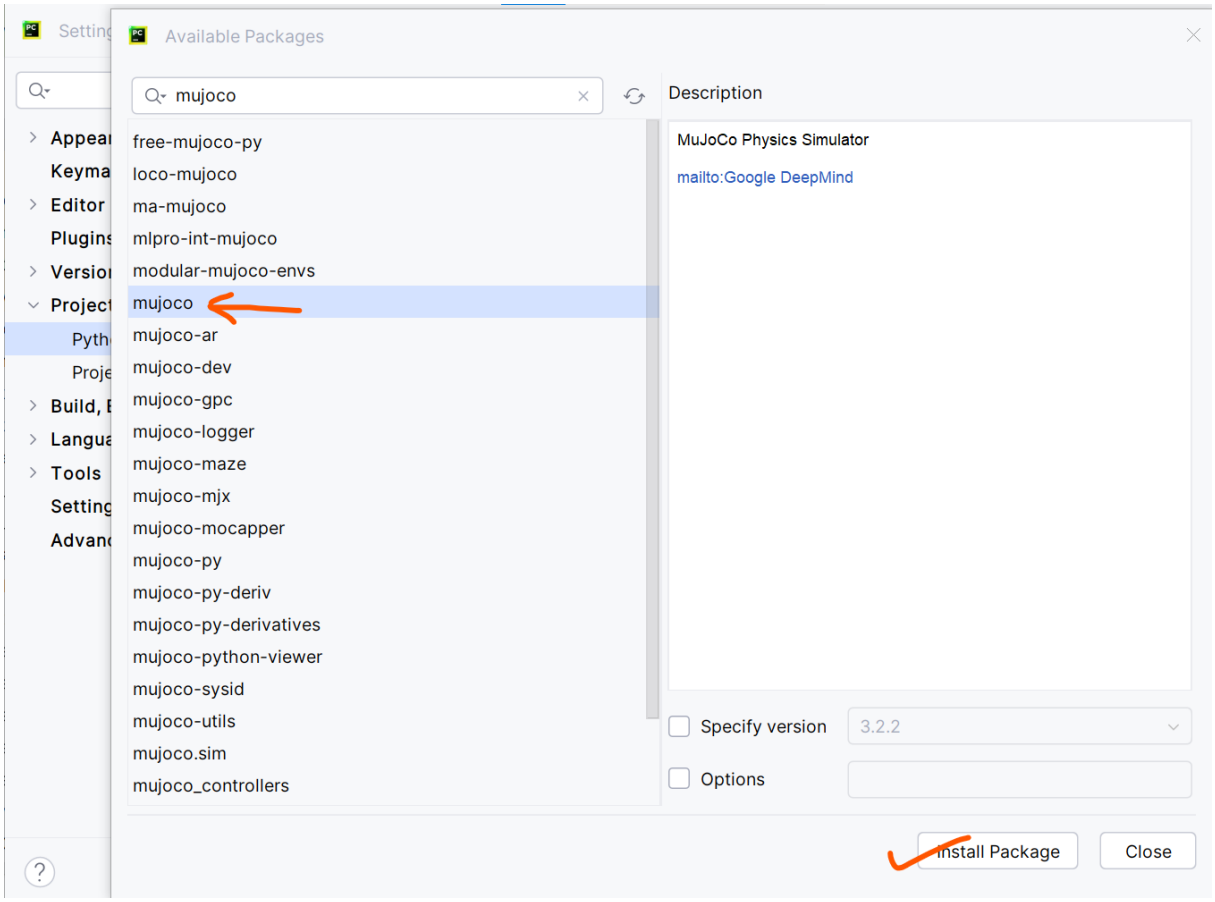

Figure 9

Keyboard

For recording keystrokes

Linux: `pip install keyboard`

Windows/Mac: PyCharm

1. File → Settings → Project: exp_2R_serial →Python Interpreter. (Same as the last installation)

Add package 'keyboard'.

NumPy

For scientific computation

Linux: `pip install numpy`

Windows/Mac: PyCharm

1. File → Settings → Project: exp_2R_serial →Python Interpreter. (Same as last installation)

Add package 'numpy'.