1 Lesson 2 – practical exercises

1.1 Objectives

The goal of this group of hands-on exercises **is to introduce participants to common tasks for managing programming environments**. After these exercises, the participants are expected to be able to:

- Create new projects using Pycharm.
- Setting the programming environment for new projects.
- Manage common tasks inside the programming environment: install new libraries, check the Python version.
- Good practices used in the software industry to maintain clear source code.

1.2 Exercises

1. Using the "Explorer Tool" for Windows Systems 10/11, create two folders inside “C:\Users\MY_USER”, where “MY_USER” correspond to the current user in the machine (e.g. C:\Users\User). One folder must be called **"development_src"** and the other **"development_env".** The **"development_src"** folder should contain python projects and source codes. The second folder **"development_env"** should contain the libraries and development environments. All proposed exercises must follow this rule to keep source code and projects organized. *For example, if you have a project called **"MY_PROJECT_01",** it should be located inside "development_src". The programming environment must be set inside "development_env" as **"MY_PROJECT_ENV".***

2. Create a new project using the tool Pycharm, choose as project name **“PYTHON_PRACTICE_01”. Follow the rule explained in the exercise 1).** Configure the Python environment using the options provided by PyCharm. After the creation of the new project, check the Python version installed with **Settings – Project – Python Interpreter** (Fig. 1).

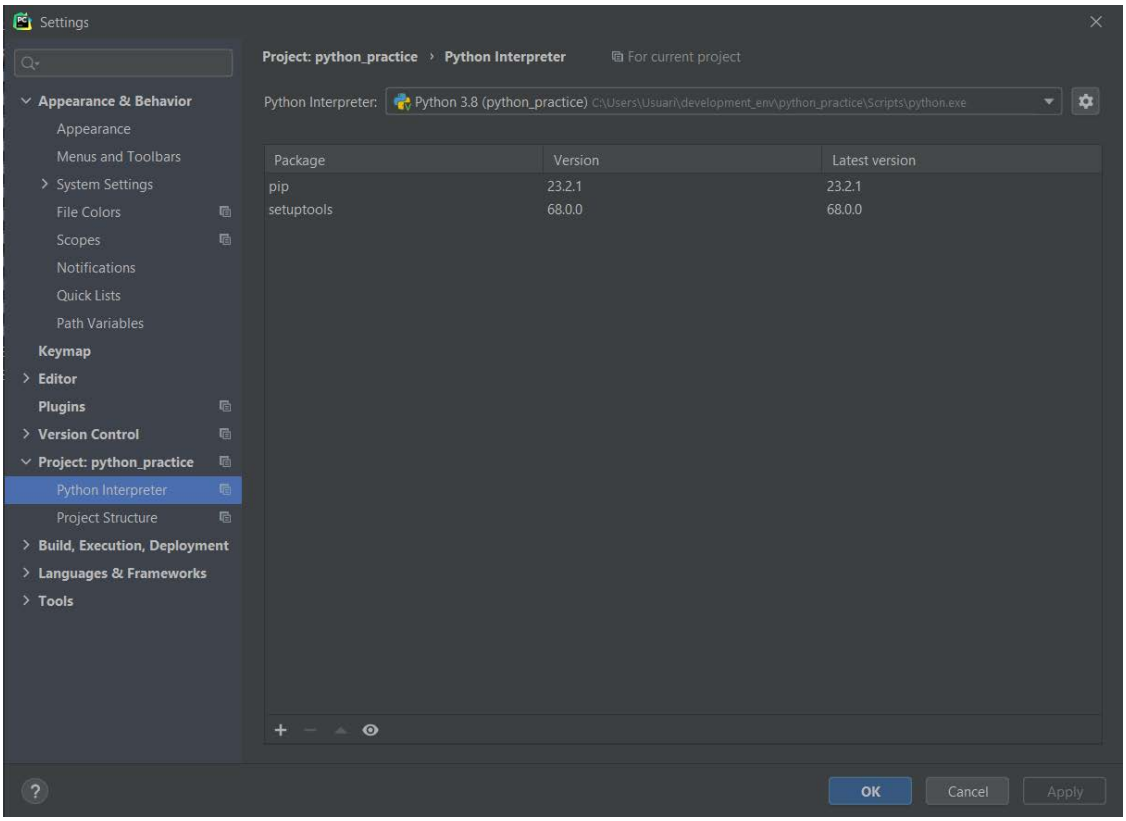

Fig. 1. PyCharm Python Interpreter screen, tools and software version used under the current project.

3. Create a new project using the tool Pycharm, choose as project name **"PYTHON_PRACTICE_02".** Configure the Python environment using the options provided by PyCharm. Inside the project folder, create a folder named **"src". Download the file "activity_01_01.py" and copy inside "src".**

4. Inside the project **"PYTHON_PRACTICE_02"**, create a new file called **"README.md",** write inside a brief description about the current project.

5. In the same project "**PYTHON_PRACTICE_02", open the "Terminal console"** window, introduce there the following command line:

```
python –version
```

```
pip --version
```

After check the current version of Python and PIP version used in the project. Update the current installer "PIP" executing the following command line:

```
pip install -- upgrade pip
```

Install the library called "Pandas", using the following command line:

```
pip install pandas
```

Save the libraries version used in the current project executing as following:

```
pip freeze > requirements.txt
```

1.3 Final words, tips

In order to maintain a clean code, it is recommendable to add in each project the following files and folders (Fig. 2):

File/ folder	Description
src/	This folder contains source code in Python.
README.md	It is a file that contains a description about the current project. It is recommended to always put to document the code.
requirements.txt	It is a file that contains the version number of each external package installed in the project.

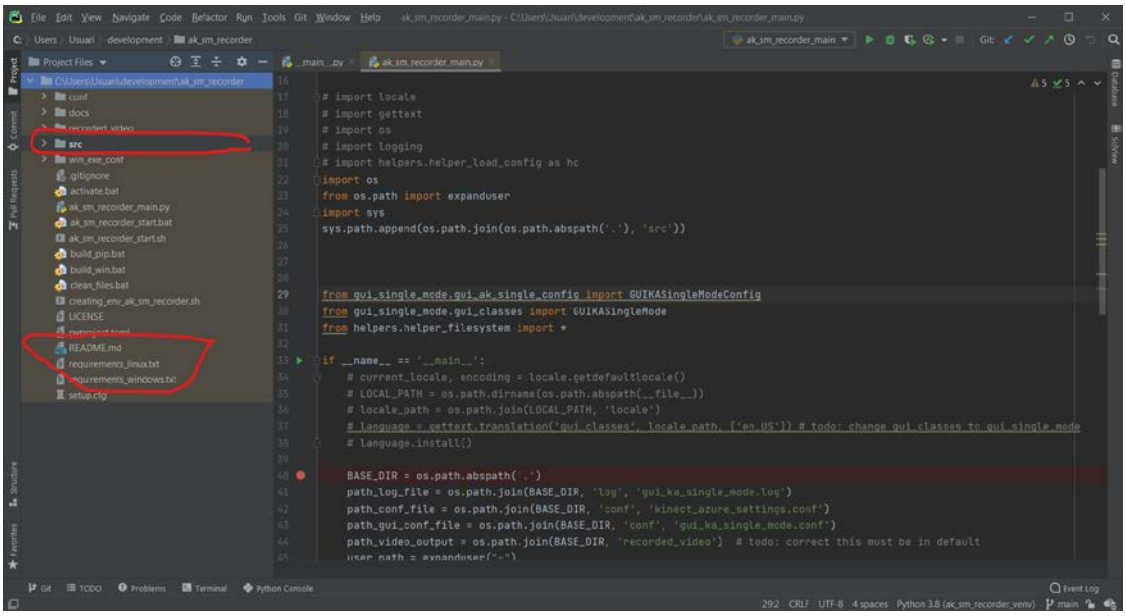

Fig. 2. PyCharm Python project structure.

1.4 Recomended reading

Installing Python 3 on Windows. https://docs.python-guide.org/starting/install3/win/