

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" (Fig. 1).*

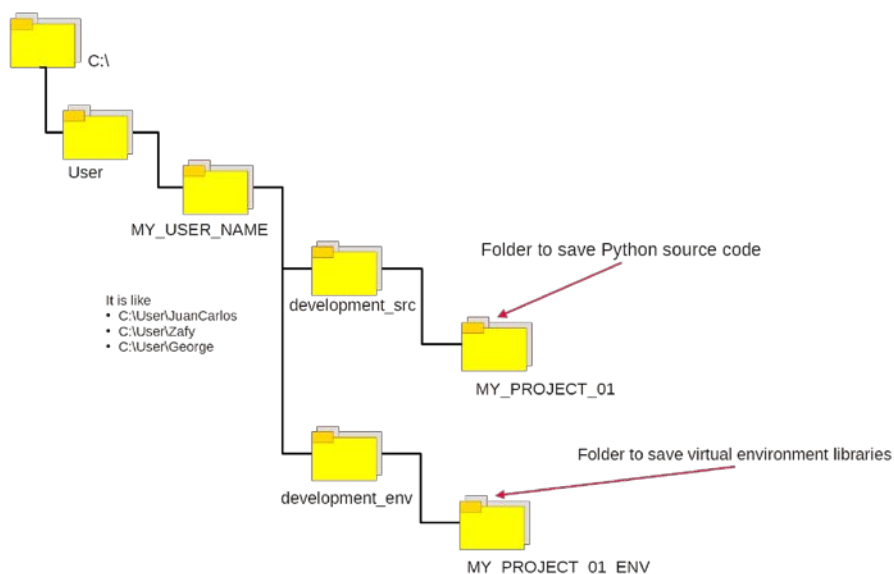


Fig. 1. Folder structure proposed.

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. 2).

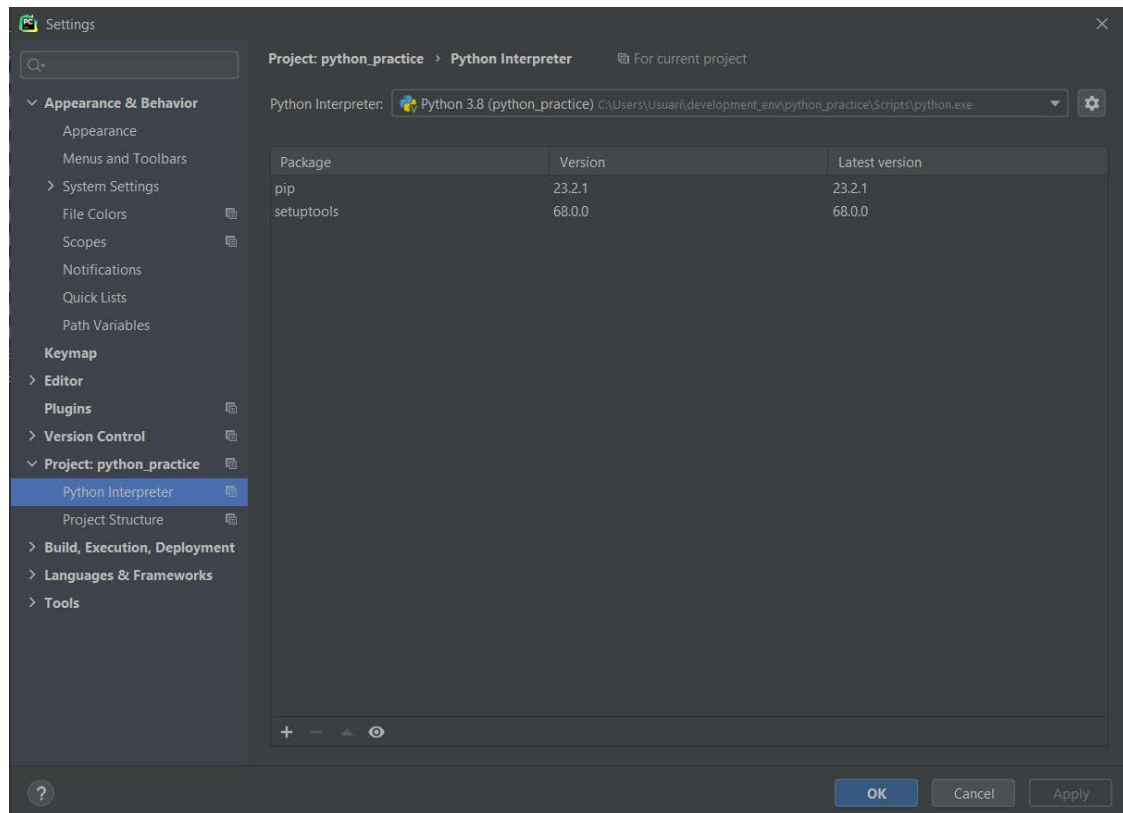


Fig. 2. PyCharm Python Interpreter screen, tools and software version used under the current project.

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. 3):

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.

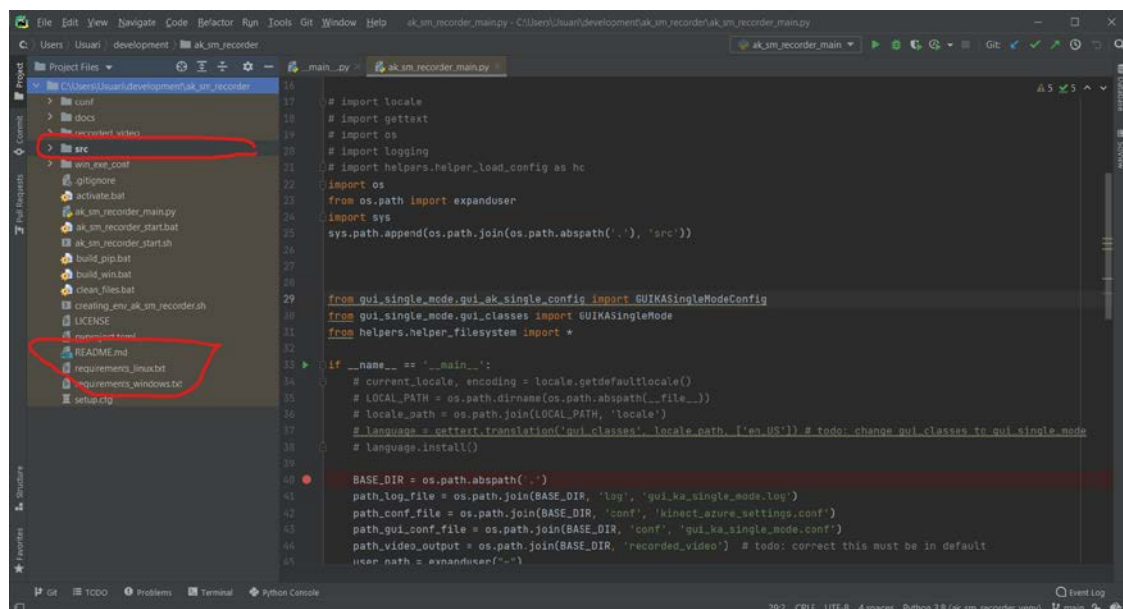


Fig. 3. PyCharm Python project structure.

1.4 Recomendend reading

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