Python (101) for everyone

PyLadies Stockholm

Zahra Mirzaei

About Me

linkedin.com/in/zahra-mirzaei-dev/

twitter.com/nafisemirzaei

github.com/Nafisedev

Table of Content

Introduction

Python:

- Introduced in 1991 as Python 0.9.0
- A **high-level**, **interpreted**, **general-purpose** programming language
- **Dynamically-typed**
- Dynamic memory management (aka. **garbage-collected)**.
- Builds around two focus point: *code readability* and *simplicity*

Installation of Python 3

- macOS
- Windows
- Linux

Installing Python 3 on macOS

```
$ python --version
$ python3 --version
$ brew --version
```

1. Install Homebrew (Homebrew is a package manager)

   https://brew.sh/

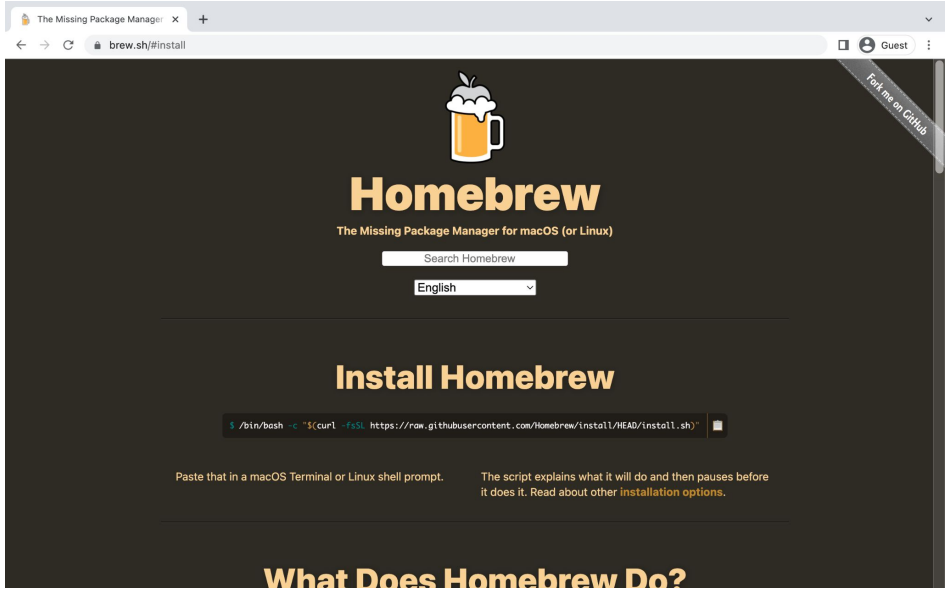
   ```
   $ /bin/bash -c "$(curl -fsSLhttps://raw.githubusercontent.com/Homebrew/install/HEAD/install.sh)"
   ```

2. Using Homebrew to install Python

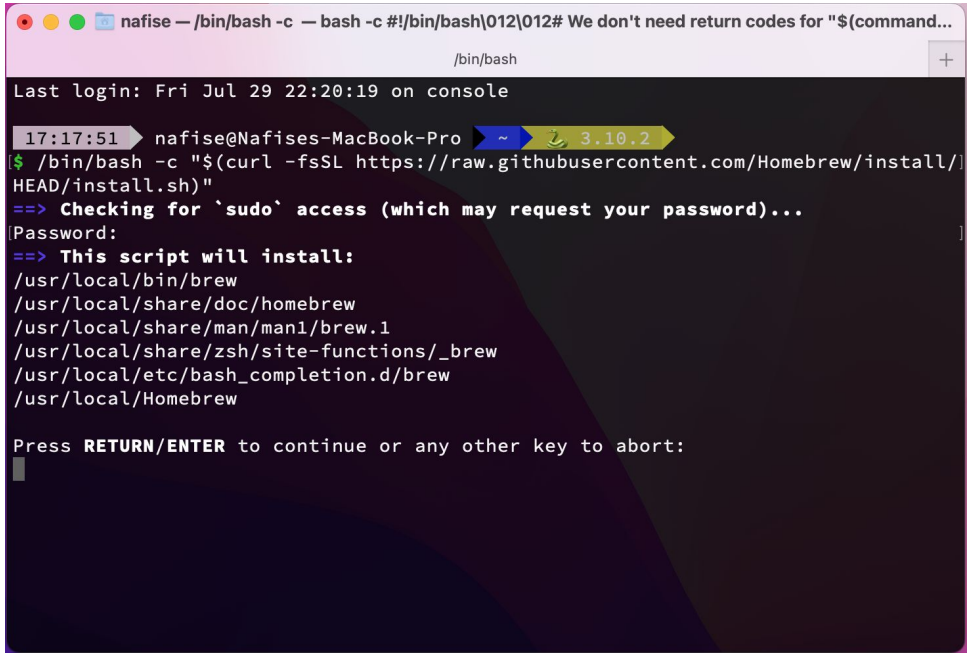
   ```
   $ brew install python@3.10
   ```

Installing Homebrew on macOS

https://brew.sh/#install

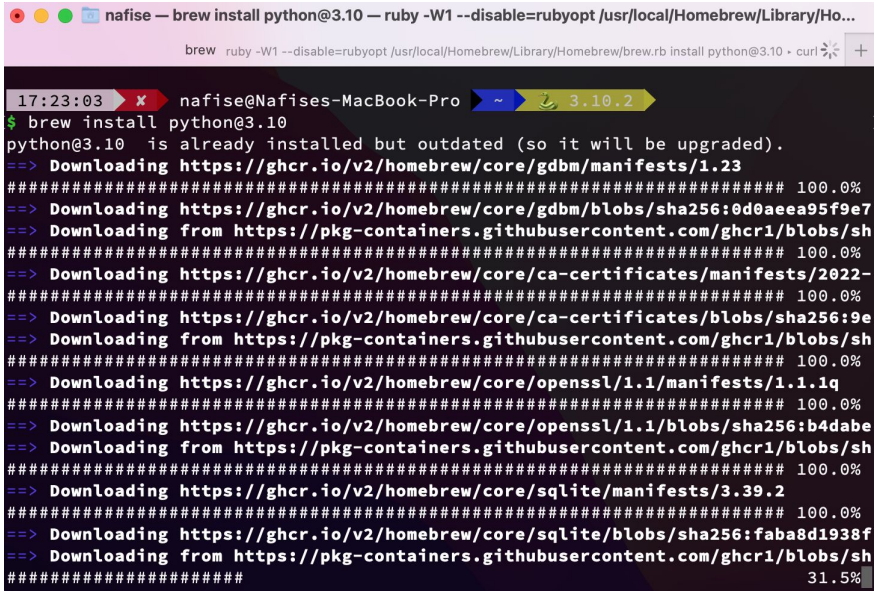


Installing Homebrew on macOS



Installing Python 3 on macOS

The latest stable version of Python right now is 3.10



Installing Python 3 on Windows

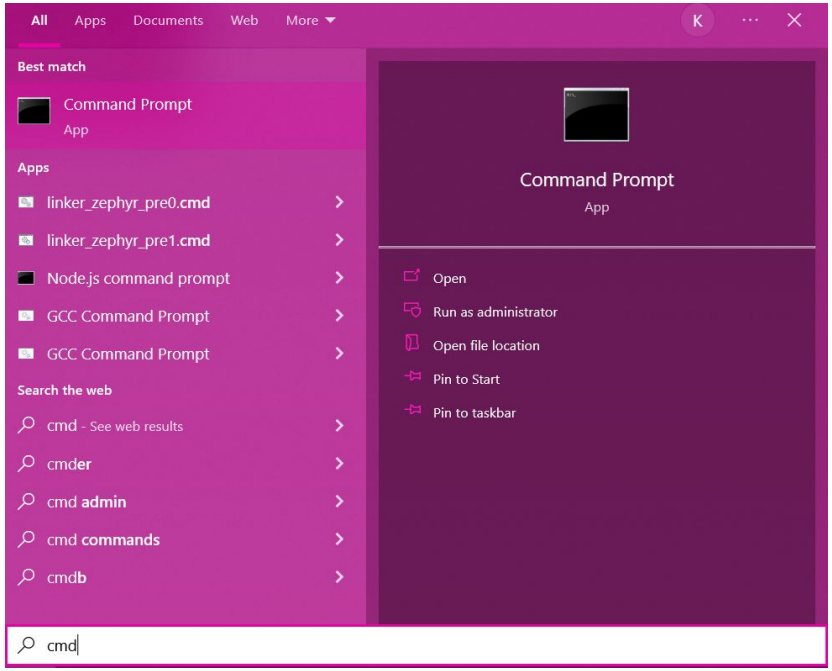
1. Open “cmd” and type

   $ python --version
   $ python3 --version

2. Download the latest stable version of Python from Python website

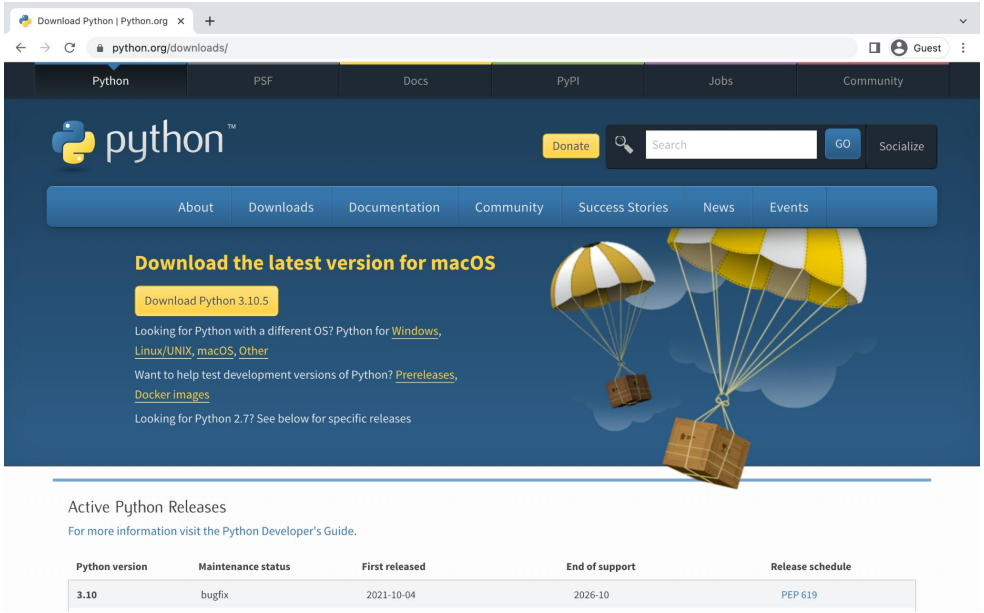
   https://www.python.org/

3. Install Python with the help of windows installer



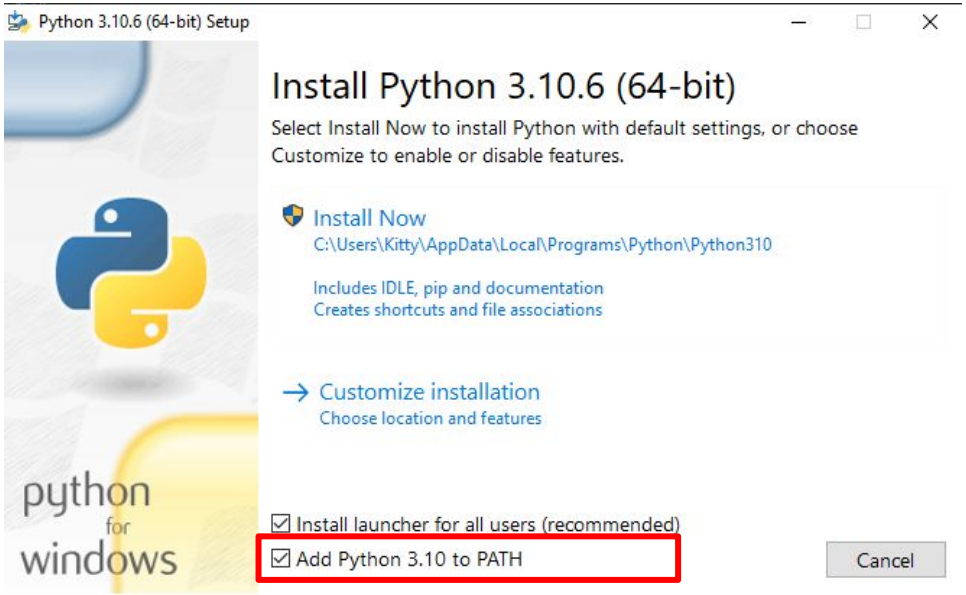
Installing Python 3 on Windows

https://www.python.org/downloads/

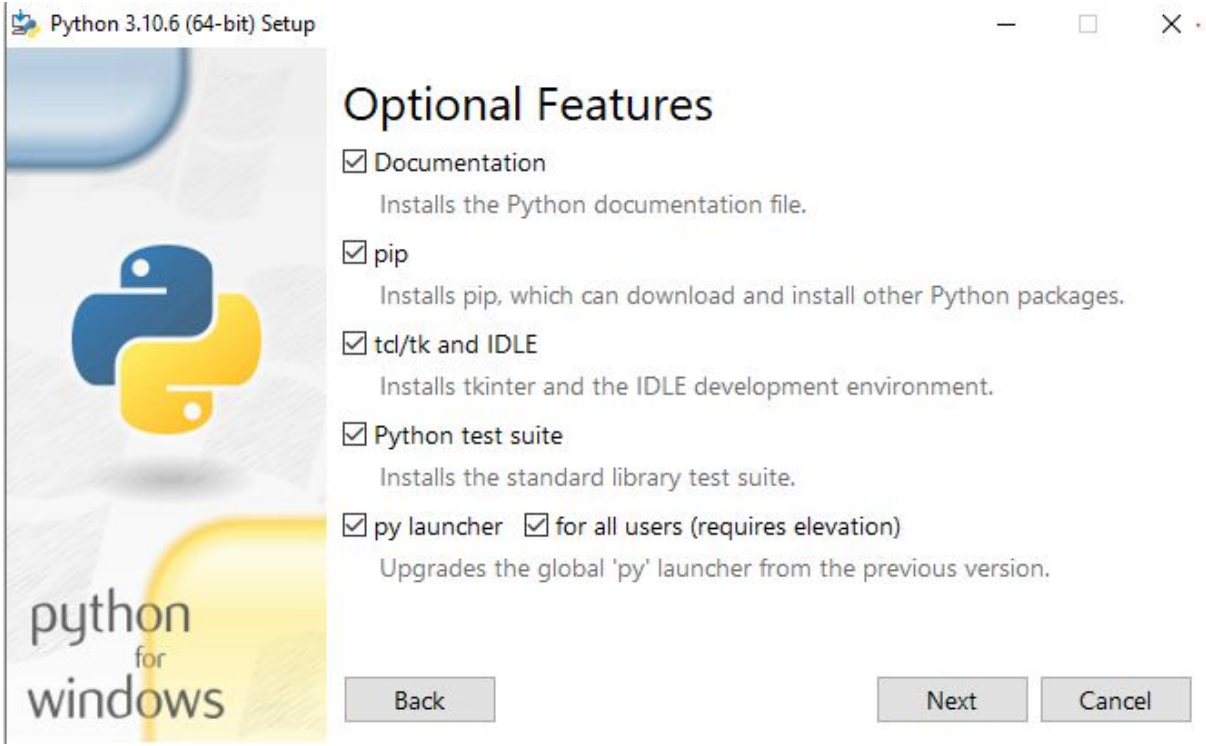


Installing Python 3 on Windows

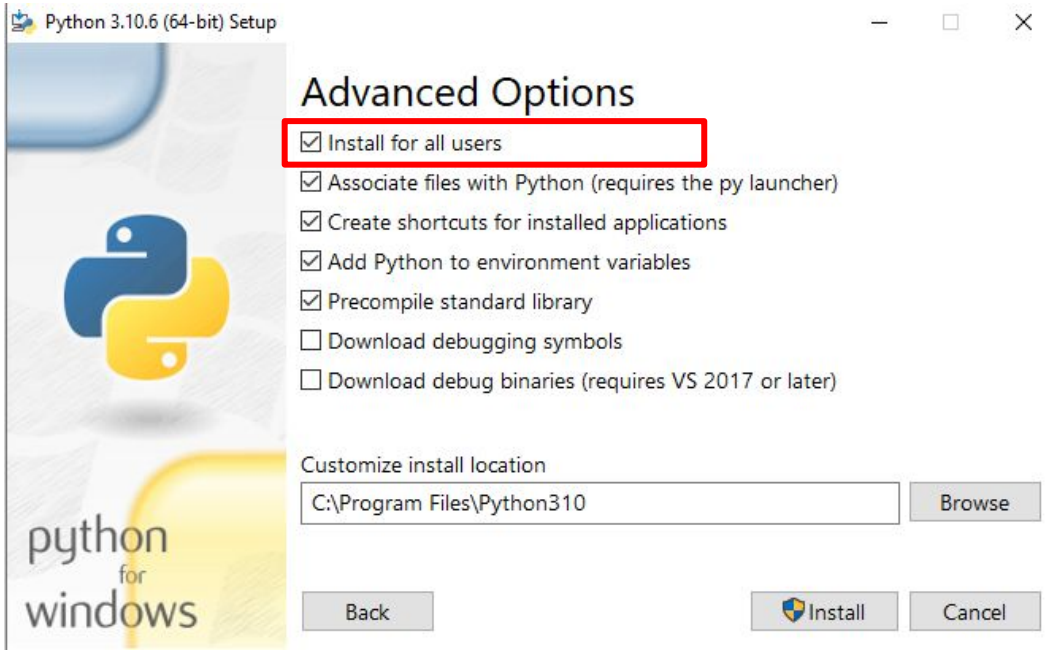
- Make sure to select “Add Python to PATH”
- Continue with “Customize installation” option



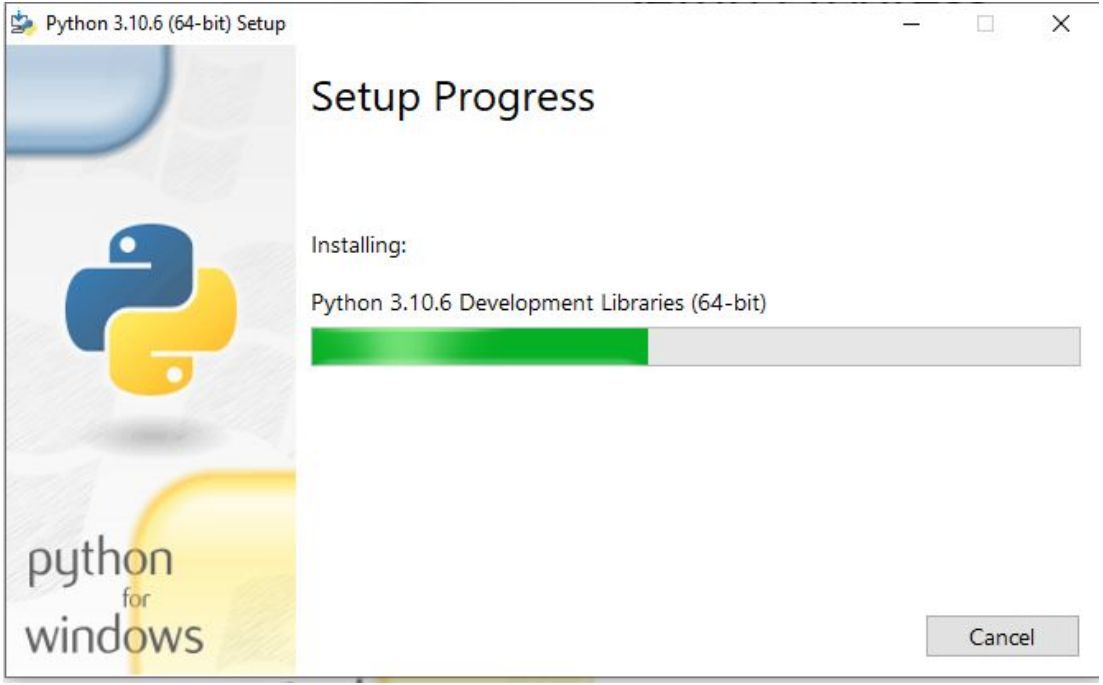
Installing Python 3 on Windows



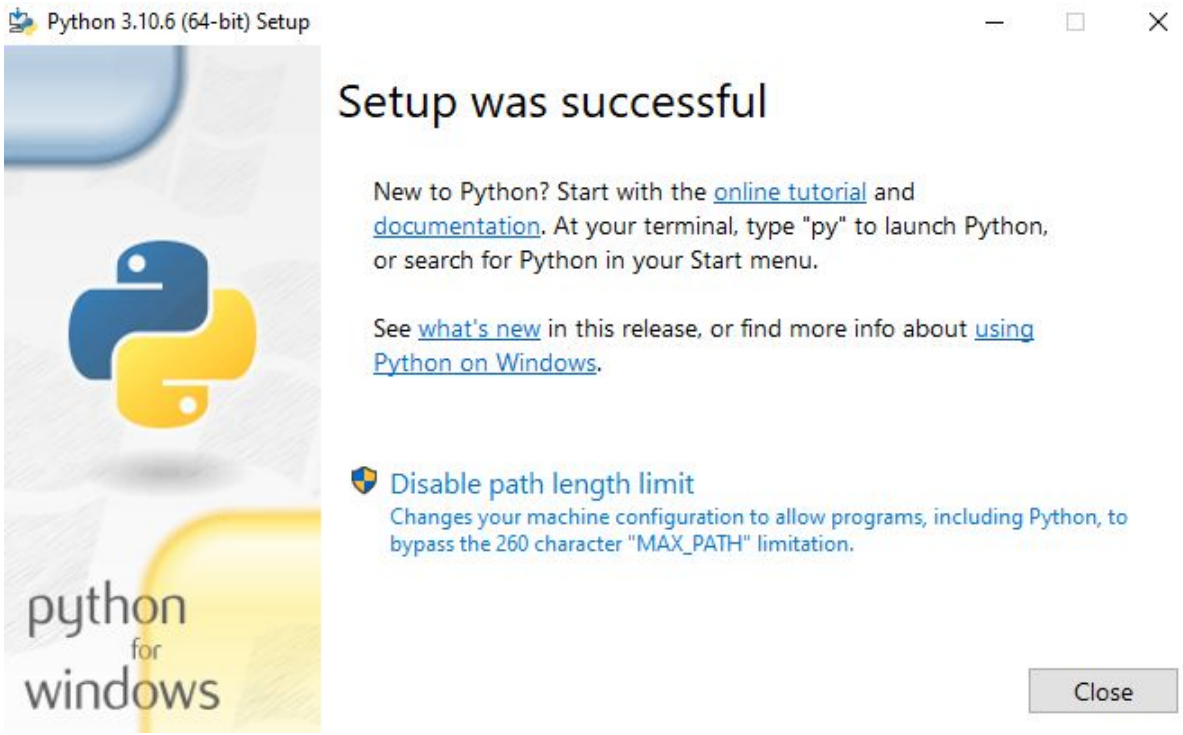
- If you have more than one user and you want to install Python for all users, select first option. (better to select this option)
- You can customize install location.



Installing Python 3 on Windows



Installing Python 3 on Windows



Installing Python 3 on Linux

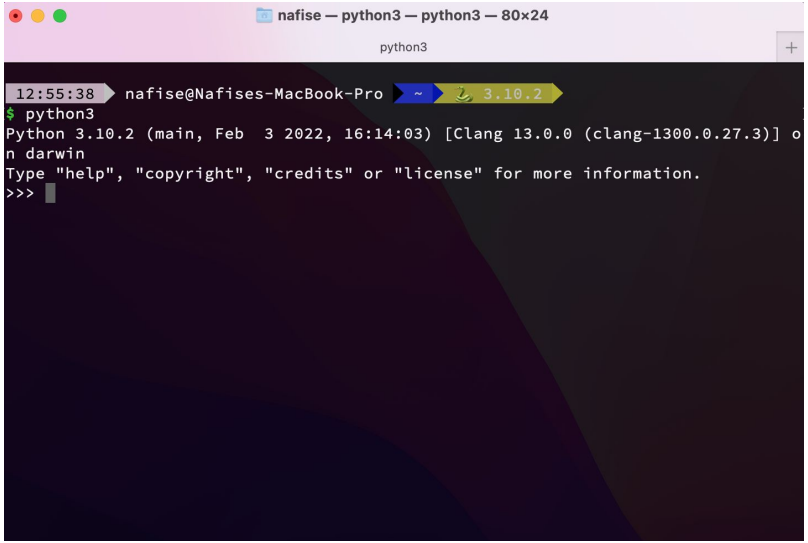
Python comes preinstalled on most Linux distributions.

1. Using **apt-get** (Ubuntu, Debian) or **dnf** (Fedora) to install the latest version of Python or upgrade it

   $ python3 --version
   $ sudo apt-get install python3

Python REPL

A read–eval–print loop (**REPL**) is an interactive programming environment that takes user inputs, executes them, and returns the result to the user.



Interpreter vs Compiler

- Interpreter translates just one statement of the program at a time into machine code.
- Compiler scans the entire program and translates the whole of program into machine code at once.

Hello World

Open the Terminal and type:

$ mkdir project

$ cd project

$ nano test.py

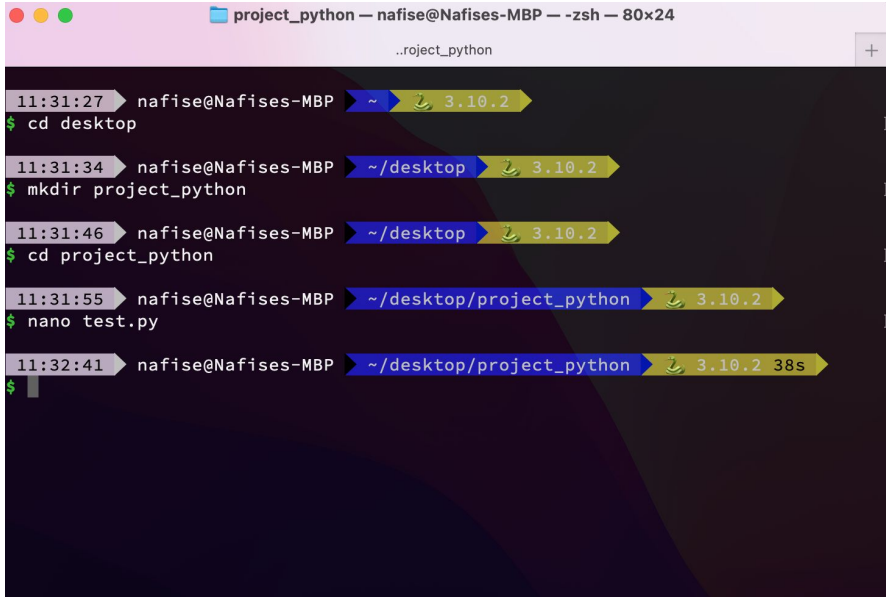
Type the script below:

print(“Hello world”)

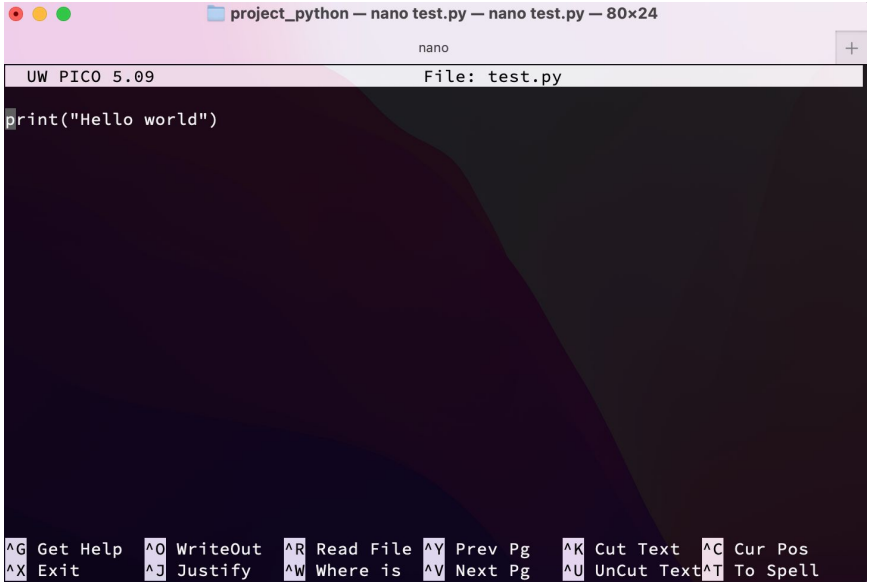
Exit and save the file

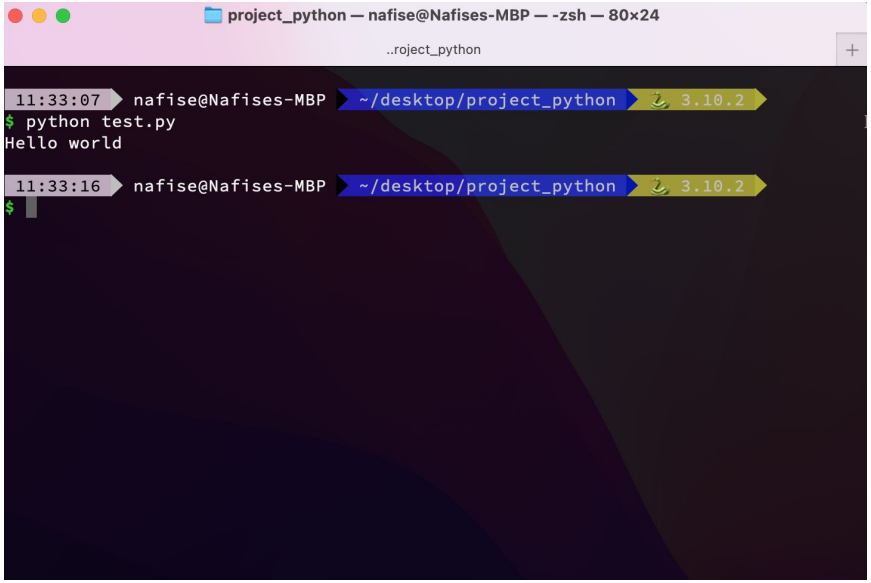
Open the Terminal again and type:

$ python3 test.py



Hello World


project_python — nano test.py — nano test.py — 80×24
nano
UW PICO 5.09 File: test.py
print("Hello world")
^G Get Help ^O WriteOut ^R Read File ^Y Prev Pg ^K Cut Text ^C Cur Pos
^X Exit ^J Justify ^W Where is ^V Next Pg ^U UnCut Text ^T To Spell


project_python — nafise@Nafises-MBP — -zsh — 80×24
..roject_python
11:33:07 nafise@Nafises-MBP ~/desktop/project_python 3.10.2
$ python test.py
Hello world
11:33:16 nafise@Nafises-MBP ~/desktop/project_python 3.10.2
$

IDE vs. Code Editor

The difference is the number of features supported and how they are integrated together.

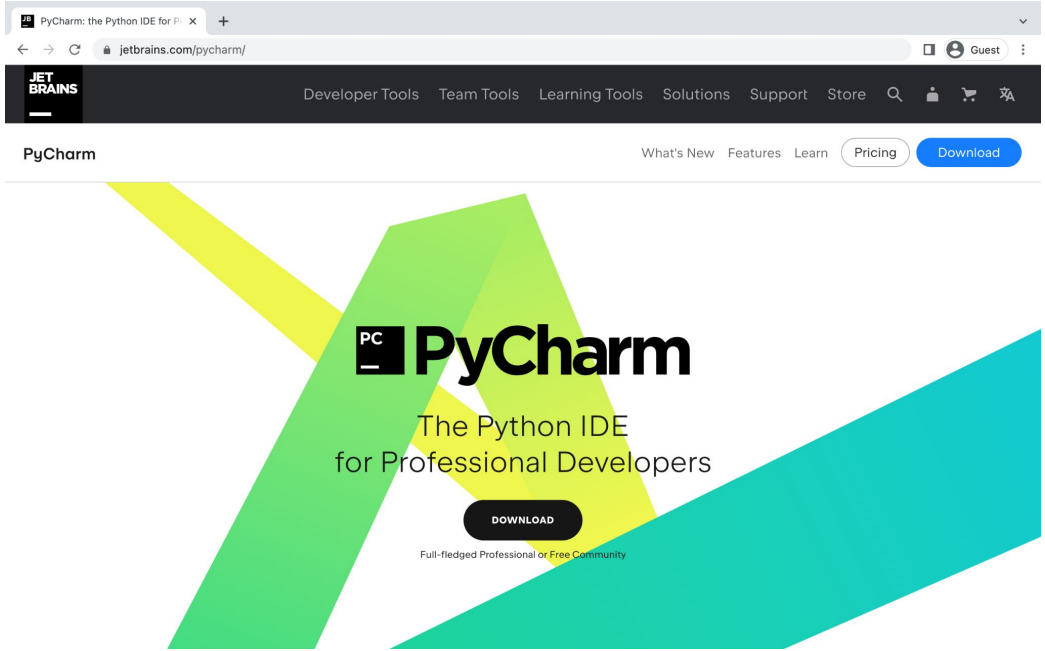
PyCharm

PyCharm is an IDE

1. Smart code completion
2. Code inspection
3. On-the-fly error highlighting and quick-fixes
4. Automated code refactorings
5. Rich navigation capabilities
6. Project management
7. Advanced debugging capabilities
8. And more

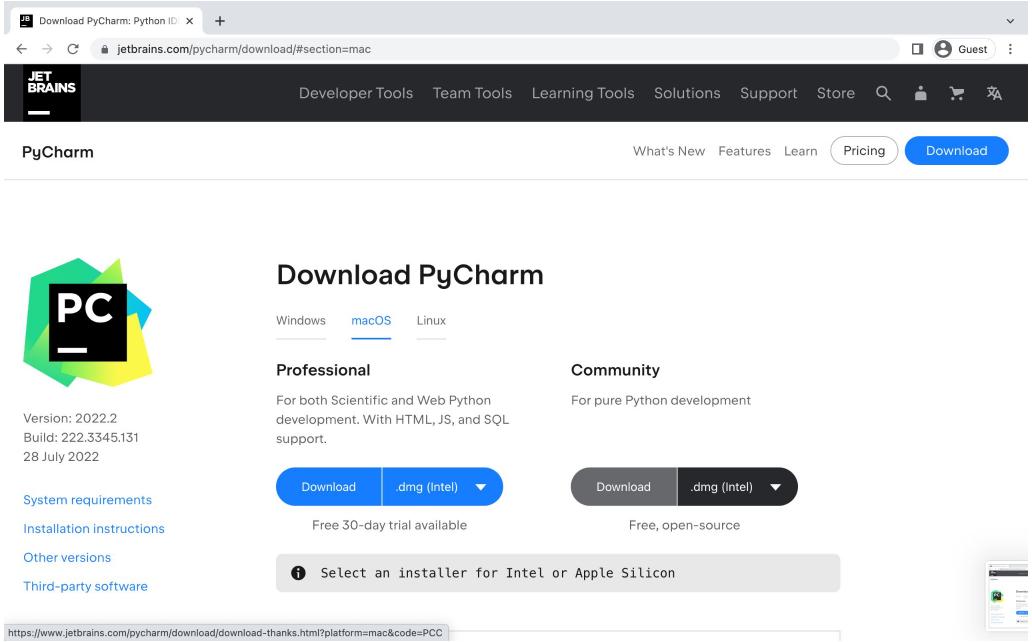
PyCharm

https://www.jetbrains.com/pycharm/



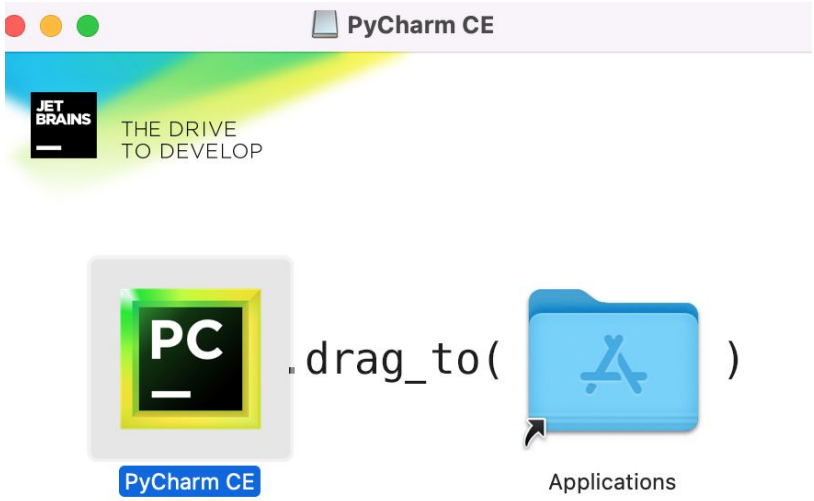
PyCharm

- Choose the “Community” version



PyCharm on macOS

1. Download the PyCharm “Community” version for macOS (the .dmg file)
2. Click on the file
3. Drag and drop



PyCharm on Windows

1. Download PyCharm “Community” version for Windows from the link below

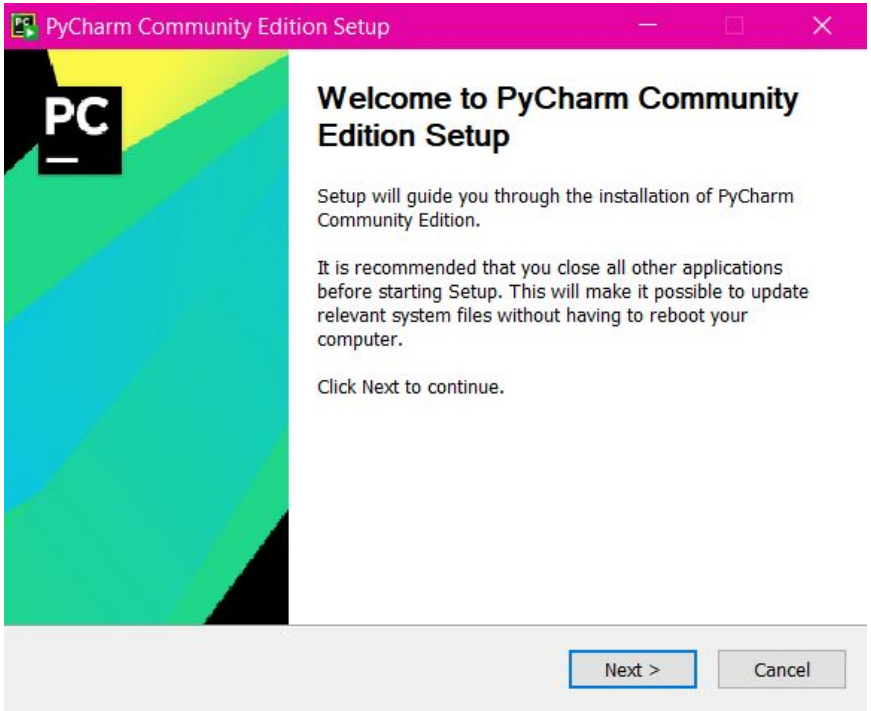
   https://www.jetbrains.com/pycharm/download/#section=windows

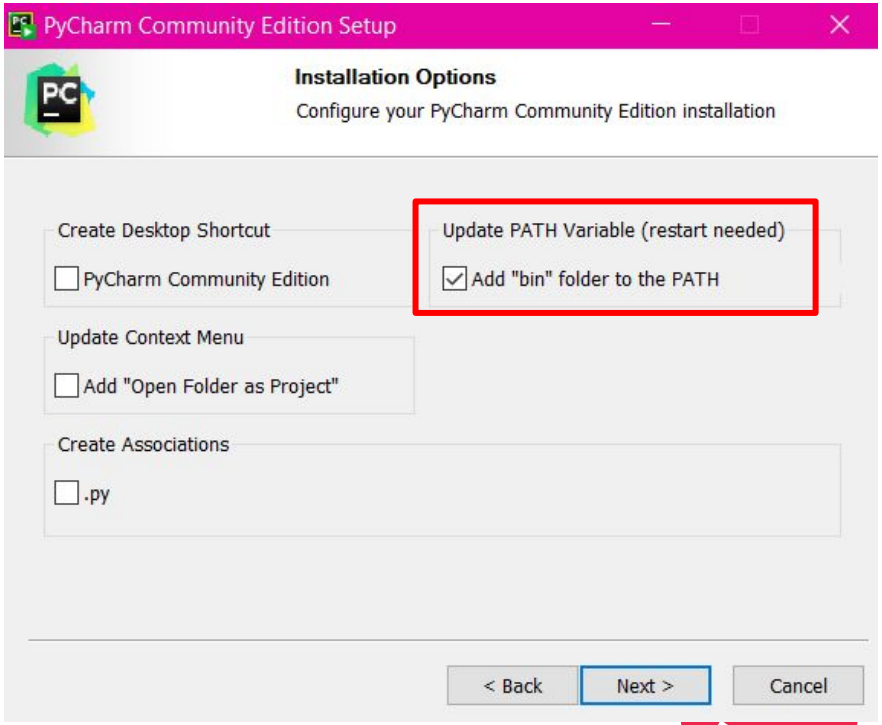
2. Run the .exe file and install it.

   It should be in your “Downloads” folder:

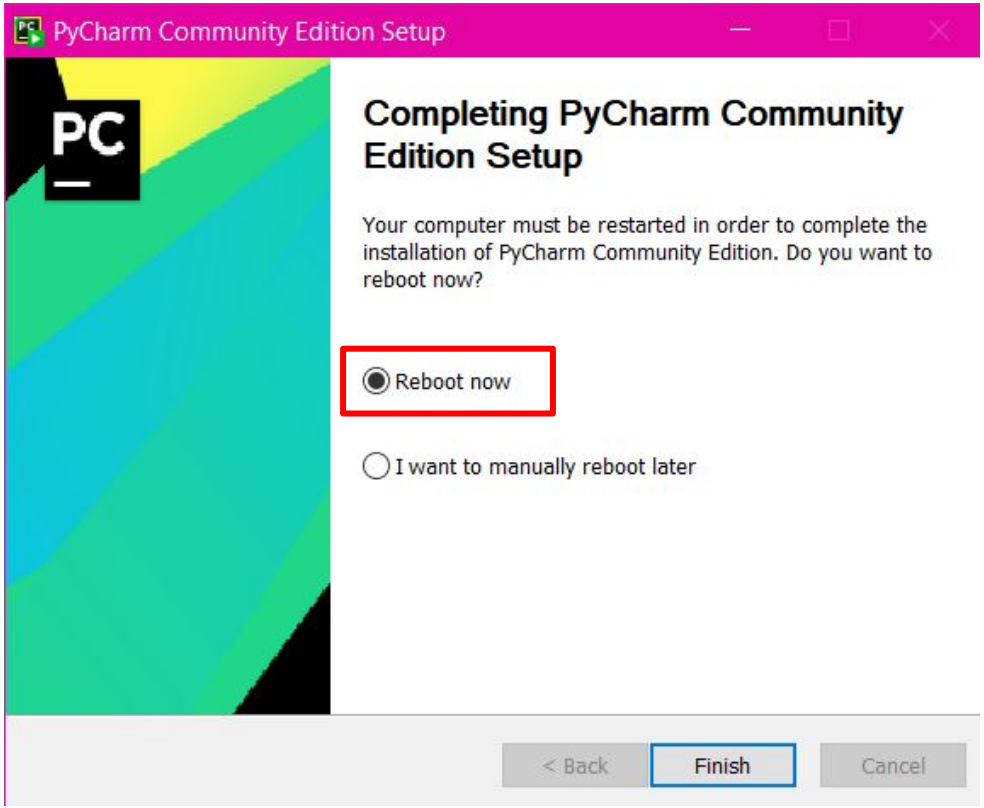
   If you want, you can change the installation path

PyCharm on Windows





PyCharm on Windows



PyCharm on Linux

1. Download the tar.gz file for PyCharm from the link below

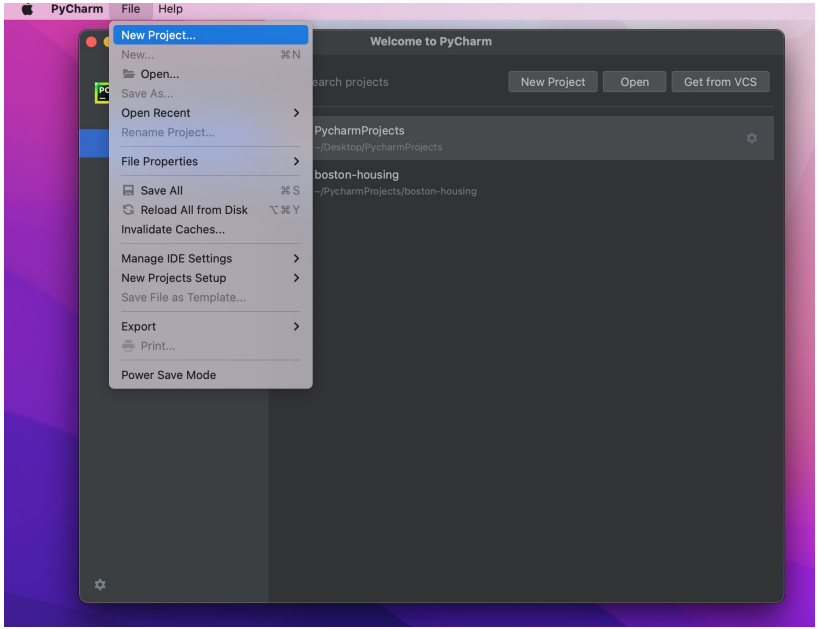
   https://www.jetbrains.com/pycharm/download/#section=linux

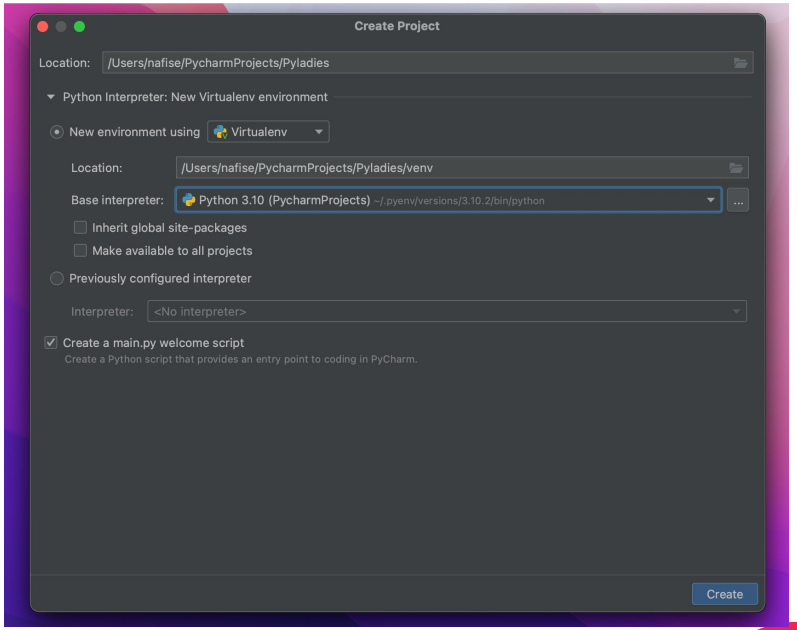
2. Extract the files to a directory
3. Open the Terminal and go to the directory the extracted files are located and then go to “bin” directory
4. In the Terminal type the command below

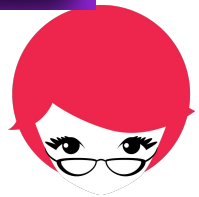
   $ cd /home/user/Downloads/pycharm_<version>/bin

   $ ./pycharm.sh

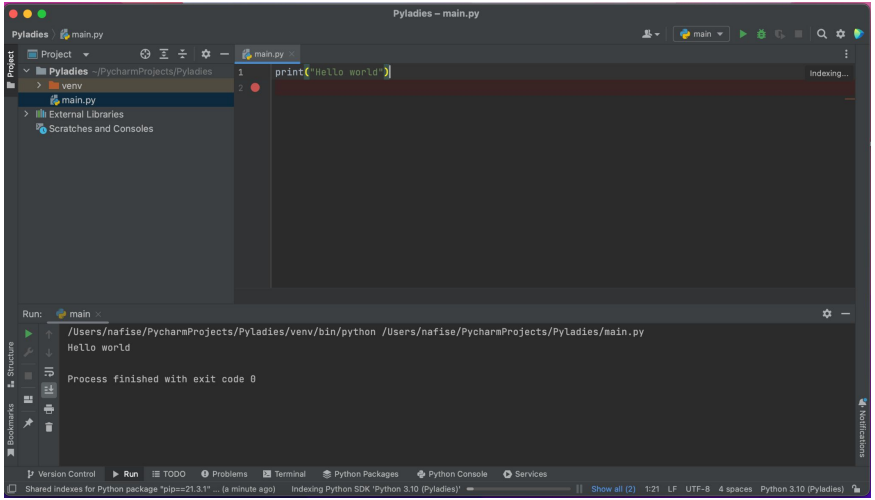
Making Project on PyCharm

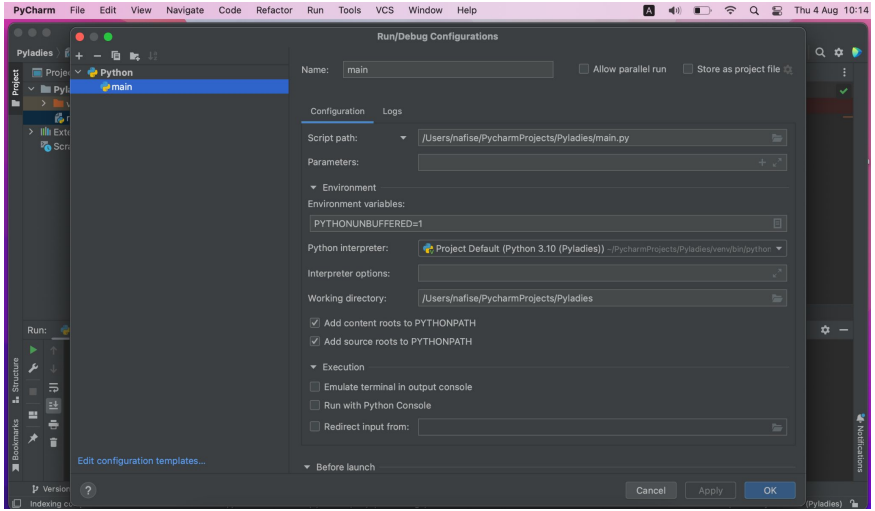






Changing Run Configuration





Adding Tools