

- In the following sections, lines which start with the \$ symbol denote commands that **must be** run in the terminal, and lines which start with the # symbol denote comments, which **must not be** run.
- When you run the commands, do **not** copy-paste the commands into the terminal; type them out instead, without including the \$ symbol.

## 1 Setup On Ubuntu Linux

1. Launch a terminal and run the following commands.

```
>_ ~/
# Change to your home folder.
$ cd $HOME
# Install python3-pip and python3-tk.
$ sudo apt-get install python3-pip python3-tk
# Install numpy, pycodestyle, and pygame.
$ sudo pip3 install numpy pycodestyle pygame
# Create lib and workspace folders.
$ mkdir lib workspace
# Download stdlib-python.zip.
$ wget https://www.cs.umb.edu/~siyer/teaching/stdlib-python.zip
# Unzip stdlib-python.zip under ~/lib.
$ unzip stdlib-python.zip -d lib
# Remove stdlib-python.zip.
$ rm stdlib-python.zip
# Set the PYTHONPATH environment variable.
$ echo "export PYTHONPATH=./$HOME/lib/stdlib-python" >> $HOME/.bashrc
```

2. Download and install PyCharm (Community Edition) [↗](#).

## 2 Setup On Mac OS X

1. Launch a terminal and run the following commands.

```
>_ ~/
# Change to your home folder.
$ cd $HOME
# Install brew.
$ /bin/bash -c "$(curl -fsSL https://raw.githubusercontent.com/Homebrew/install/HEAD/install.sh)"
# Install wget.
$ brew install wget
# Install python.
$ brew install python3
# Upgrade pip3.
$ sudo pip3 install --upgrade pip
# Install numpy, pycodestyle, pygame, and tk.
$ sudo pip3 install numpy pycodestyle pygame tk
# Create lib and workspace folders.
$ mkdir lib workspace
# Download stdlib-python.zip.
$ wget https://www.cs.umb.edu/~siyer/teaching/stdlib-python.zip
# Unzip stdlib-python.zip under ~/lib.
$ unzip stdlib-python.zip -d lib
# Remove stdlib-python.zip.
$ rm stdlib-python.zip
# Set the PYTHONPATH environment variable.
$ echo "export PYTHONPATH=./$HOME/lib/stdlib-python" >> $HOME/.bash_profile
# Change your shell to bash.
$ chsh -s /bin/bash
```

2. Download and install PyCharm (Community Edition) [↗](#). Launch PyCharm, go to *Configure* → *Settings* → *Tools* → *Terminal* and set *Shell path* to */bin/bash*.

## 3 Setup On Windows

1. Install Python 3 [🔗](#). Make sure you have checked the box that says “Add Python 3.x to PATH”.
2. Launch PowerShell and run the following commands.

```
>_ ~/
# Change to your home folder.
$ cd $HOME
# Install numpy, pycodestyle, and pygame.
$ pip3 install numpy pygame pycodestyle
# Create lib and workspace folders.
$ mkdir lib,workspace
# Download stdlib-python.zip.
$ wget -O stdlib-python.zip https://www.cs.umb.edu/~siyer/teaching/stdlib-python.zip
# Unzip stdlib-python.zip under ~/lib.
$ Expand-Archive -LiteralPath stdlib-python.zip -DestinationPath lib
# Remove stdlib-python.zip.
$ rm stdlib-python.zip
# Set the PYTHONPATH environment variable.
$ setx PYTHONPATH ".;$HOME\lib\stdlib-python"
```

3. Download and install PyCharm (Community Edition) [🔗](#). Launch PyCharm, go to *Configure* → *Settings* → *Tools* → *Terminal* and set *Shell path* to `powershell`.

## 4 Testing the Environment

To test if your environment is setup correctly, download and unzip [https://www.cs.umb.edu/~siyer/teaching/cs110/dummy\\_project.zip](https://www.cs.umb.edu/~siyer/teaching/cs110/dummy_project.zip) under `~/workspace`, launch PyCharm and open `~/workspace/dummy_project`, and run the following command on the PyCharm terminal.

```
>_ ~/workspace/dummy_project
$ python3 helloworld.py
```

## 5 FAQ

- Q1. Running `python3` on the Windows PowerShell launches Microsoft Store app instead of the Python 3.x interpreter. What do I do?  
*Answer:* You can launch the Python 3.x interpreter as `python` OR `python.exe`.
- Q2. What do I do if I am unable install `pygame` on an M1 Mac?  
*Answer:* Checkout this article [🔗](#).
- Q3. What do I do if I get a “No Python interpreter configured for the project” message when I open a Python program in PyCharm?  
*Answer:* Go to *File* → *Settings* → *Project* → *Python Interpreter* and set it to a Python 3.x interpreter available in the pull-down menu.
- Q4. How do I tell PyCharm to automatically wrap lines at 100 columns and enable visual guides at 80 and 100 columns?  
*Answer:* Go to *File* → *Settings* → *Editor* → *Code Style*, set “Hard wrap at” to 100, enable “Wrap on typing”, and set “Visual guides” to 80, 100.
- Q5. How do I tell PyCharm to assign each parameter or variable its own color?  
*Answer:* Go to *File* → *Settings* → *Editor* → *Color Scheme* → *Language Defaults* → *Semantic highlighting*, and enable it.