**PYTHON**

**Installing Python**

Go to:

<https://www.python.org/>

Download Python 3.6 (last release) for Windows x64.

Open the installation file ‘python-3.6.7-amd64’ and install Python.

File will install in C:\Users\bdour\AppData\Local\Programs by default.

Note: AppData is a hidden file. To see hidden files: click on the start button and type ‘hidden’. Then, click on ‘Show hidden files and folder’ and tick the box ‘Show hidden files, folders, and drives’.

**Add Python to Environment Variables**

Click on the start button and type ‘System Properties’.

Click on ‘Environment Variables…’.

Under ‘System Variables’, click on ‘Path’ and then ‘Edit…’.

Click ‘New’ and copy the path to your Python application and the Scripts folder (e.g. C:\Users\username\Python\Python36 and C:\Users\username\Python\Python36\Scripts) and click ‘OK’.

**Installing Python packages**

Click on the start button and type ‘cmd’ and click on ‘Command Prompt’

Type ‘python -m ensurepip –default-pip’ (to make sure the requirements to use the pip install command are satisfied).

To **install** a package, type:

python -m pip install *package\_name*

To **update** a package, type:

python -m pip install –upgrade *package\_name*

Recommended packages:

|  |  |
| --- | --- |
| **Name** | **Purpose** |
| numpy | To manipulate large, multi-dimensional arrays and matrices. Includes a large collection of high-level mathematical functions to operate on these arrays and matrices. |
| scipy | Library of algorithms and mathematical tools (e.g. signal processing). |
| matplotlib | For plotting and figures. Provides an object-oriented API for embedding plots into applications. |
| pandas | For data manipulation and analysis. In particular, it offers data structures and operations for manipulating numerical tables and time series. |
| tensorflow | For dataflow programming across a range of tasks. It is a symbolic math library and is also used for machine learning applications such as neural networks. |

**SUBLIME TEXT 3**

**Installing Sublime Text 3**

Go to:

<https://www.sublimetext.com/3>

Download and install the version that fits your device.

**Installing Package Control**

Go to:

<https://packagecontrol.io/>

Follow the instructions to download and install Package Control.

**Installing Packages using Package Control**

Press CTRL+Shift+P and type ‘Install’

Click on ‘Package Control: Install Package’

Then type the name of the package you wish to install and click on it.

Recommended packages:

|  |  |
| --- | --- |
| **Name** | **Purpose** |
| SideBarEnhancements | This plug-in provides additional context menu options in the sidebar, such as “New file” or “New Folder”. These should be in there by default, but they are not. |
| Run | Allows to use the console as a Command Prompt. |
| Tomorrow Night Italics Color Scheme | A good dark color scheme (i.e. determines the font colors used for syntax highlighting in the editor view) with comments in italics. |
| Theme - SoDaReloaded Dark | A nice dark theme (i.e. change the color and style of Sublime’s UI elements) that helps with readability. |
| Python 3 | Python 3 and Cython language bundles for Sublime Text and TextMate. |
| Python Debugger | Graphical Debugger for Sublime Text. |
| WordHighlight | Highlight all copies of the currently selected word (press ALT+ENTER to select them all and change them all simultaneously). |
| All Autocomplete | Sublime’s default autocomplete only considers words found in the current file. This plug-in extends the autocomplete word list to find matches across all open files. |
| SublimeCodeIntel | Enhances autocomplete for some languages including Python. The plug-in also lets you jump to symbol definitions across files by pressing alt and then clicking on a symbol. Very handy. |
| SublimeREPL | Allows you to run a Python interpreter session in an editor view. I tend to use bpython in a separate terminal window but sometimes SublimeREPL is helpful. |
| MarkdownEditing | Provides a decent Markdown color scheme (light and dark). |
| MarkdownLivePreview | A Sublime Text 3 plugin to preview your markdown as you type (for REAMME.md files). |

**Run a Script in Sublime Text 3**

Go to Tools->Build System and select Python

Then, anytime you want to run a script, start by saving it (CTRL+S), then press CTRL+B

**Edit Preferences Settings**

Go to:

Preferences->Settings

On the right side (User), copy and past the following lines:

{

"bold\_folder\_labels": true,

"caret\_extra\_width": 1,

"caret\_style": "phase",

"close\_windows\_when\_empty": false,

"color\_scheme": "Packages/Tomorrow Night Italics Color Scheme/Tomorrow-Night-Italics.tmTheme",

"copy\_with\_empty\_selection": false,

"drag\_text": false,

"draw\_minimap\_border": true,

"enable\_tab\_scrolling": false,

"ensure\_newline\_at\_eof\_on\_save": true,

"file\_exclude\_patterns":

[

"\*.pyc",

"\*.pyo",

"\*.exe",

"\*.dll",

"\*.obj",

"\*.o",

"\*.a",

"\*.lib",

"\*.so",

"\*.dylib",

"\*.ncb",

"\*.sdf",

"\*.suo",

"\*.pdb",

"\*.idb",

".DS\_Store",

"\*.class",

"\*.psd",

"\*.sublime-workspace"

],

"font\_face": "Source Code Pro",

"font\_options":

[

"no\_round"

],

"font\_size": 10,

"highlight\_line": true,

"highlight\_modified\_tabs": true,

"ignored\_packages":

[

"Vintage"

],

"line\_padding\_bottom": 1,

"line\_padding\_top": 1,

"match\_brackets\_content": false,

"match\_selection": false,

"match\_tags": false,

"material\_theme\_accent\_graphite": true,

"material\_theme\_compact\_sidebar": true,

"open\_files\_in\_new\_window": false,

"overlay\_scroll\_bars": "enabled",

"preview\_on\_click": false,

"scroll\_past\_end": true,

"scroll\_speed": 5.0,

"show\_definitions": false,

"show\_encoding": true,

"show\_errors\_inline": false,

"show\_full\_path": false,

"sidebar\_default": true,

"theme": "SoDaReloaded Dark.sublime-theme",

"translate\_tabs\_to\_spaces": true,

"trim\_trailing\_white\_space\_on\_save": true,

"use\_simple\_full\_screen": true,

"word\_wrap": true

}

**ECLIPSE**

**Installing Java SE Development Kit**

In order to install Eclipse, a Java SE Development Kit is necessary.

Go to:

<https://www.oracle.com/technetwork/java/javase/downloads/jdk8-downloads-2133151.html>

Under Java SE Development Kit, tick the ‘Accept License Agreement’ box, then click on ‘jdk-8u191-windows-x64.exe’.

Once downloaded, click on the installation file ‘jdk-8u191-windows-x64.exe’ and install Java SE Development Kit.

**Installing Eclipse**

Go to:

<https://www.eclipse.org/downloads/>

Under ‘Get Eclipse IDE 2018‑12 - Install your favorite desktop IDE packages.’, click on ‘Download 64 bit’. On the next page, click ‘Download’.

Open the installation file ‘eclipse-inst-win64.exe’.

Install Eclipse IDE for Java Developers.

When finished, click Launch and choose the location of your workspace directory.

When launched, click on the ‘Workbench’ icon on the top right corner to open the workspace.

**Install PyDev in Eclipse**

In Eclipse, go to Help- Eclipse Marketplace.

Type PyDev in the Find box, and Install PyDev – Python IDE for Eclipse (version).

During the installation, click ‘Confirm’ with all boxes ticked, then tick ‘I accept the terms of the license agreement’, and click ‘Finish’.

Eclipse will install PyDev and then restart.

Once restarted, go to File-New-Project and select PyDev-PyDev Project.

Name your project (e.g. Python Project) and click on ‘Please configure an interpreter before proceeding’.

Select ‘Choose file’, leave all the boxes indicating Python ticked and click ‘OK’.

Once the interpreter has been configured, you will see under ‘Interpreter’ ‘Default – currently: python’.

Click ‘Finish’ and then click ‘Open Perspective’.

**Change Eclipse Appearance**

Go to Window-Preferences then click on General-Appearance and select ‘Dark’ next to ‘Theme’.

For easier reading, it is advised to change the color of the occurrences (i.e. if a variable exist at multiple location, when you click on one, they will all be highlighted). For that, go to Window-Preferences and click on General-Editors-Text Editors-Annotations.

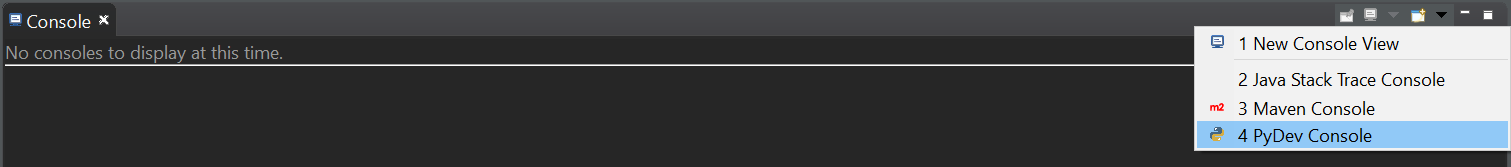
Go to Occurrences (PyDev) and change the color to dark turquoise (4th last color of the last line of the preset colors).

Click ‘Apply and Close’

**Open Python Console in Eclipse**

The console that automatically shows in the bottom of the screen can’t be edited. It only shows the different output of the script that was wrote.

If you wish to type some random lines of codes to play around without having to write a script, or if you want to select specific lines of codes to run independently (without having the run the whole script every time), click on the ‘Open Console’ button at the top left of the Console, and click on ‘4 PyDev Console’, then keep the ‘Console for currently active editor’ box checked, and click OK.



**Change Python Console Appearance**

The default appearance of the Python Console (and any other console in Eclipse) is a light theme (i.e. white background). If you prefer to make it equivalent to a dark mode, then go to: Preferences -> PyDev -> Interactive Console

Advice:

* Stdout color: select light gray (3rd last color of the last line of the preset colors)
* Stdin color: select white
* Prompt color: select dark turquoise (4th last color of the last line of the preset colors)
* Background color & Debug console background color: Define Custom Colors and use the following color setting to get a similar dark grey than the Eclipse dark mode background: Red = 45, Green = 45, Blue = 45)