

# Configure for Lab

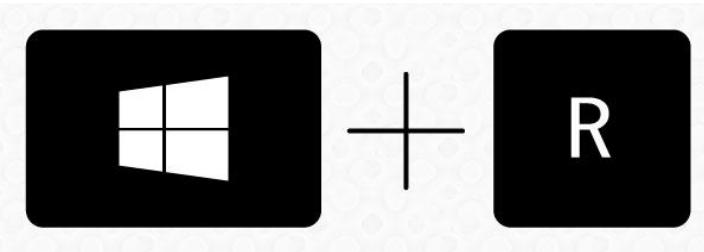
Bok, Jong Soon  
[javaexpert@nate.com](mailto:javaexpert@nate.com)  
<https://github.com/swacademy/Python>

# Installation Python Interpreter on Windows 10 64-bit Platform

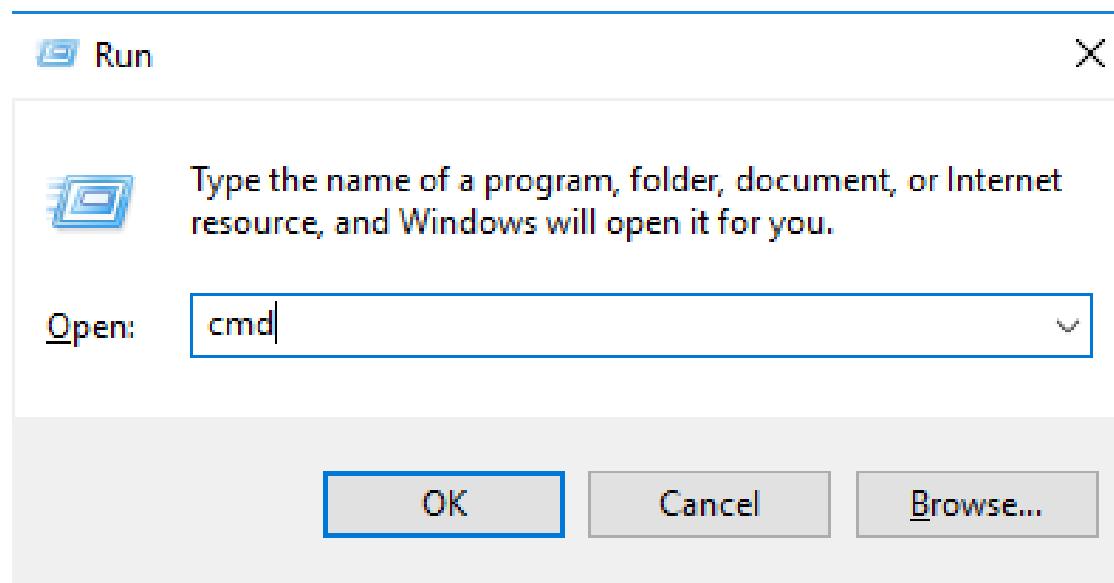


# Install Python Interpreter

1. Type



2. Type **cmd**



# Install Python Interpreter (Cont.)

## 3. Type **python**.

 Command Prompt

```
Microsoft Windows [Version 10.0.14393]
(c) 2016 Microsoft Corporation. All rights reserved.
```

```
C:\Users\instructor>python
'python' is not recognized as an internal or external command,
operable program or batch file.
```

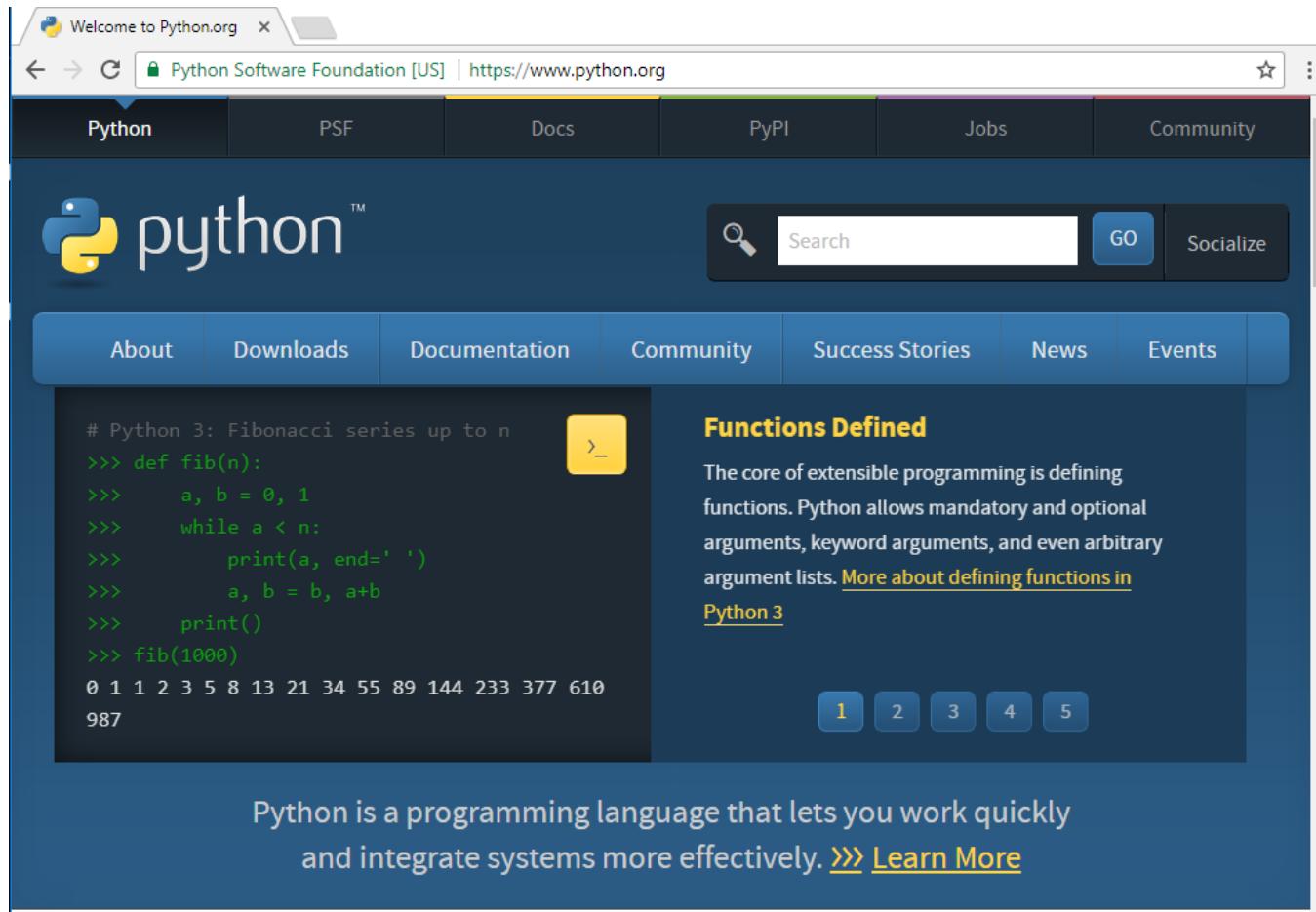
## 4. Type **wmic os get osarchitecture**

 Command Prompt

```
C:\Users\instructor>wmic os get osarchitecture
OSArchitecture
64-bit
```

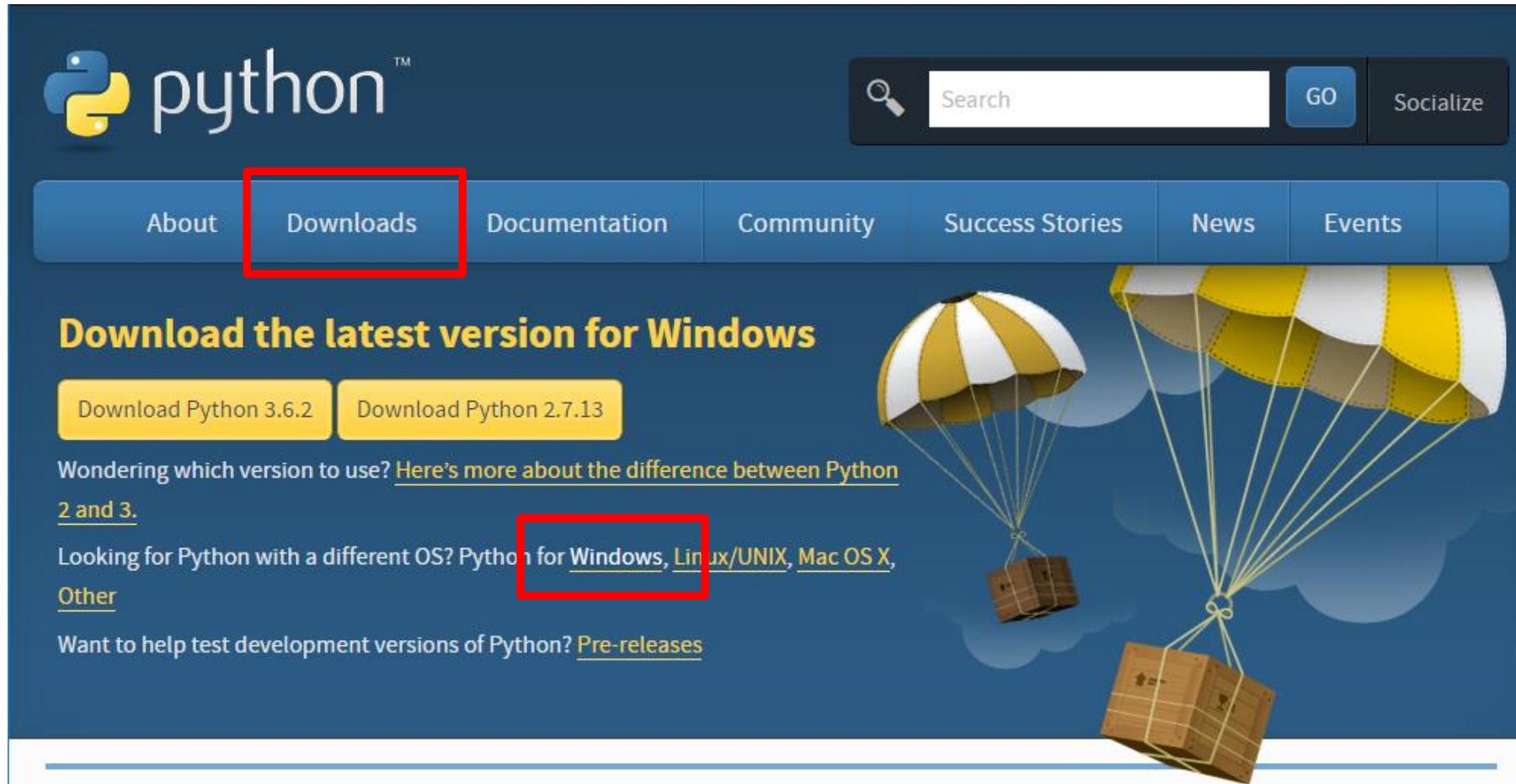
# Install Python Interpreter (Cont.)

## 5. Visit <https://www.python.org>



# Install Python Interpreter (Cont.)

6. Click **Windows** link like below.



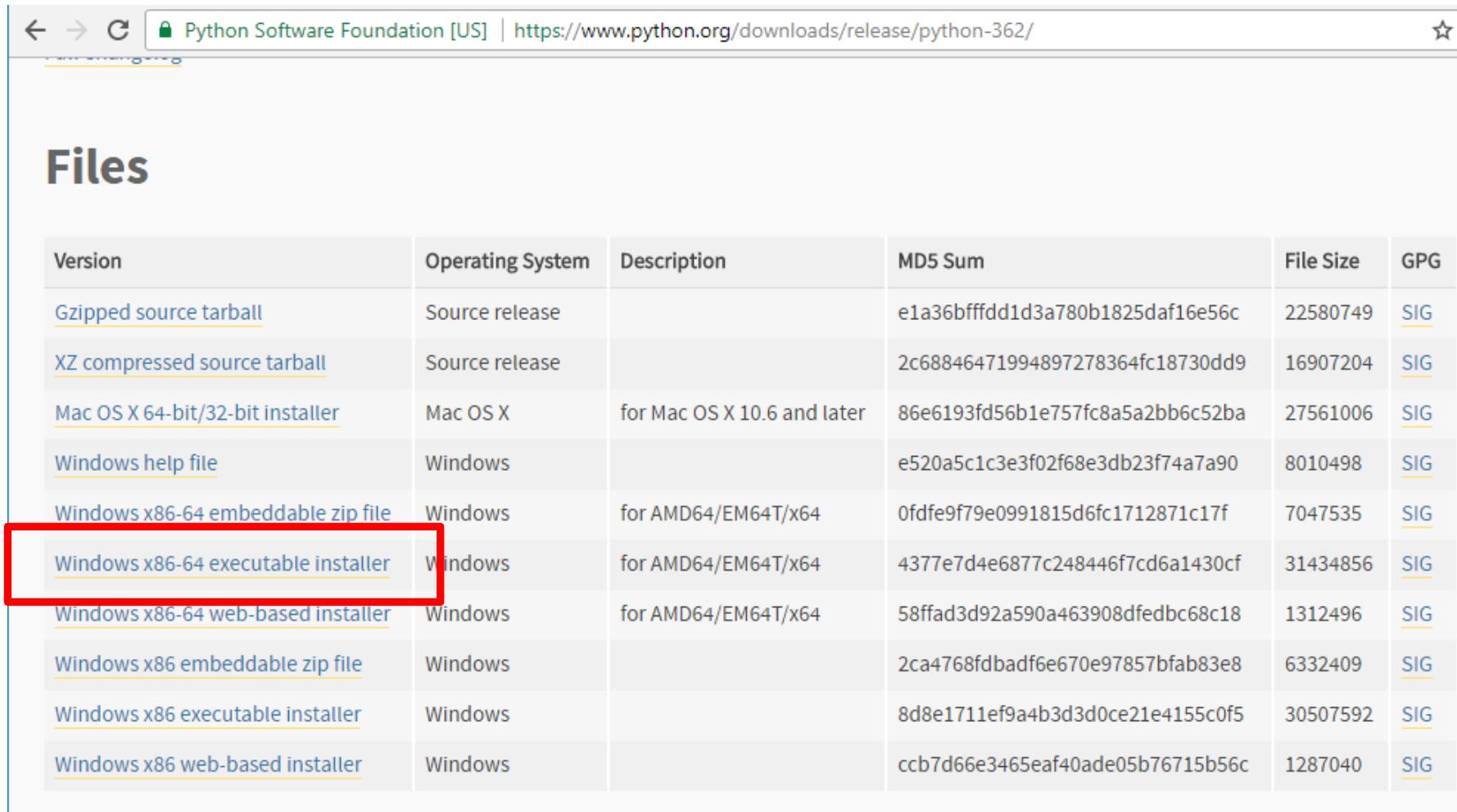
# Install Python Interpreter (Cont.)

7. Click **Latest Python 3 Release** link like below.



# Install Python Interpreter (Cont.)

## 8. Click **Windows x86-64 executable installer** link.

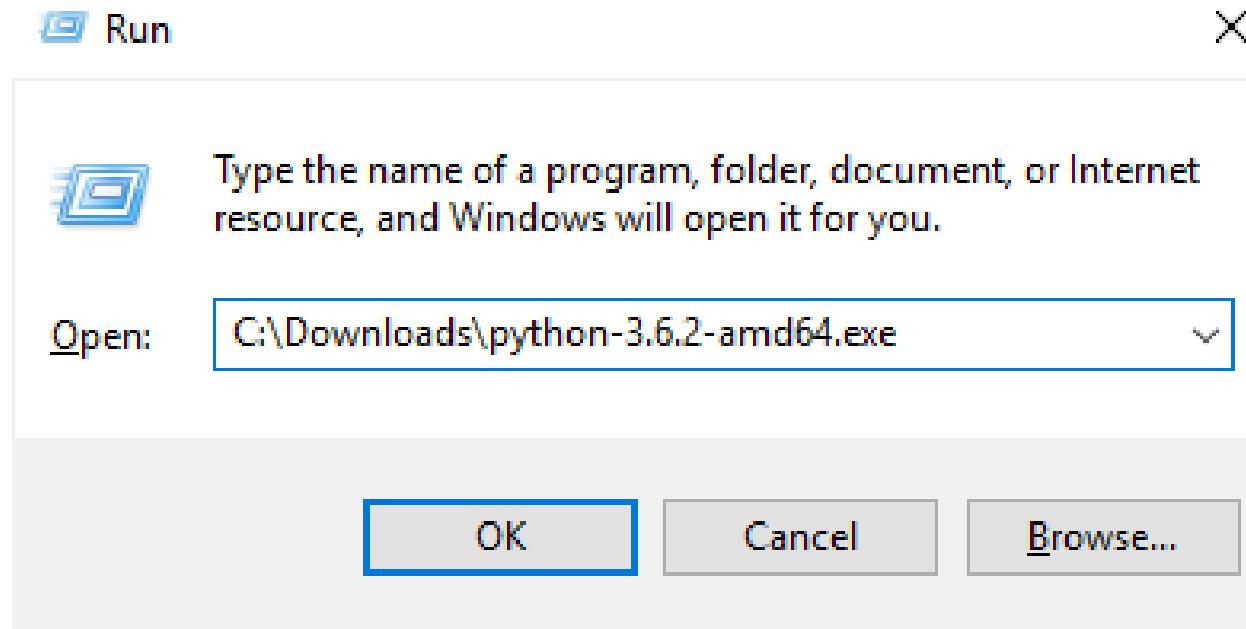


The screenshot shows a web browser displaying the Python Software Foundation download page for Python 3.6.2. The page title is "Python Software Foundation [US]". The main content is a table titled "Files" listing various Python releases. The "Operating System" column indicates that the "Windows x86-64 executable installer" link is intended for Windows users. This link is highlighted with a red box.

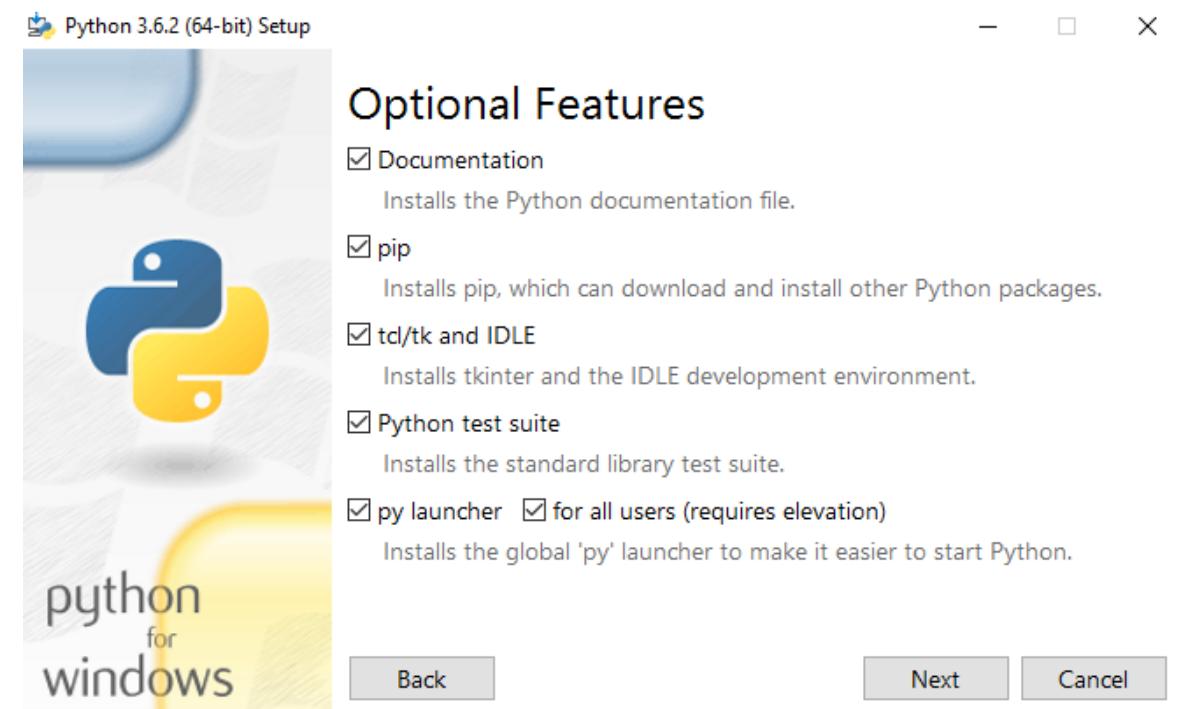
Version	Operating System	Description	MD5 Sum	File Size	GPG
<a href="#">Gzipped source tarball</a>	Source release		e1a36bfffdd1d3a780b1825daf16e56c	22580749	<a href="#">SIG</a>
<a href="#">XZ compressed source tarball</a>	Source release		2c68846471994897278364fc18730dd9	16907204	<a href="#">SIG</a>
<a href="#">Mac OS X 64-bit/32-bit installer</a>	Mac OS X	for Mac OS X 10.6 and later	86e6193fd56b1e757fc8a5a2bb6c52ba	27561006	<a href="#">SIG</a>
<a href="#">Windows help file</a>	Windows		e520a5c1c3e3f02f68e3db23f74a7a90	8010498	<a href="#">SIG</a>
<a href="#">Windows x86-64 embeddable zip file</a>	Windows	for AMD64/EM64T/x64	0fdfef9f79e0991815d6fc1712871c17f	7047535	<a href="#">SIG</a>
<a href="#">Windows x86-64 executable installer</a>	Windows	for AMD64/EM64T/x64	4377e7d4e6877c248446f7cd6a1430cf	31434856	<a href="#">SIG</a>
<a href="#">Windows x86-64 web-based installer</a>	Windows	for AMD64/EM64T/x64	58ffad3d92a590a463908dfedbc68c18	1312496	<a href="#">SIG</a>
<a href="#">Windows x86 embeddable zip file</a>	Windows		2ca4768fdbadf6e670e97857bfab83e8	6332409	<a href="#">SIG</a>
<a href="#">Windows x86 executable installer</a>	Windows		8d8e1711ef9a4b3d3d0ce21e4155c0f5	30507592	<a href="#">SIG</a>
<a href="#">Windows x86 web-based installer</a>	Windows		ccb7d66e3465eaf40ade05b76715b56c	1287040	<a href="#">SIG</a>

# Install Python Interpreter (Cont.)

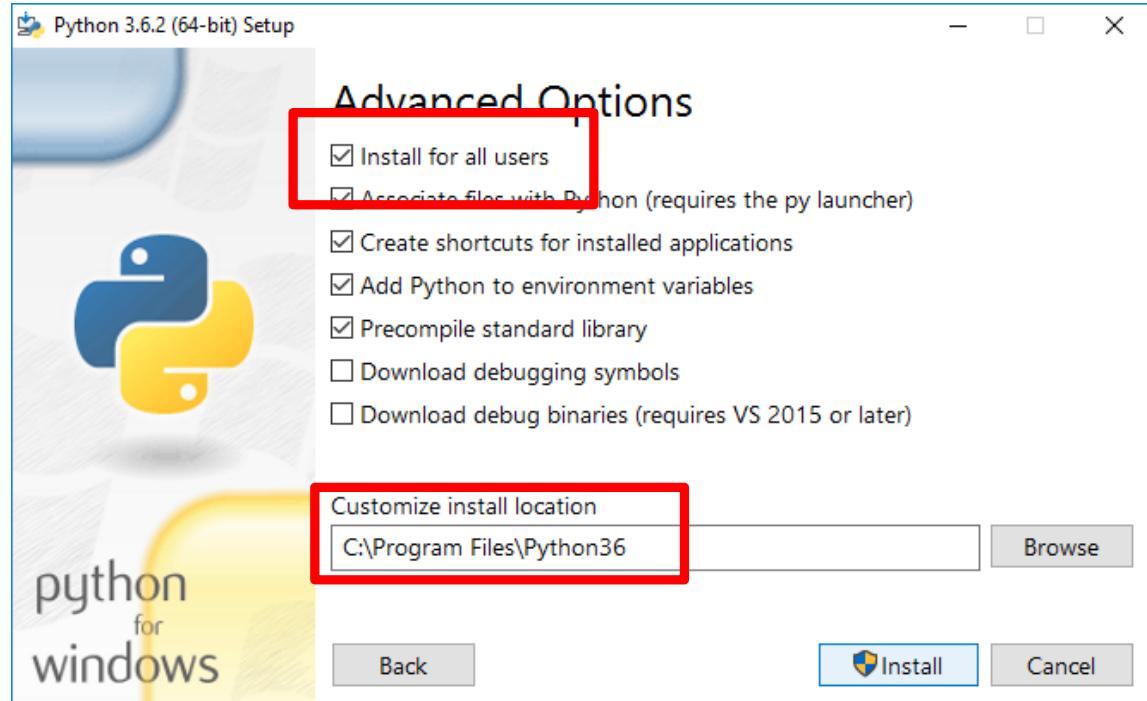
## 9. Execute **pyton-3.6.2-amd64.exe**.



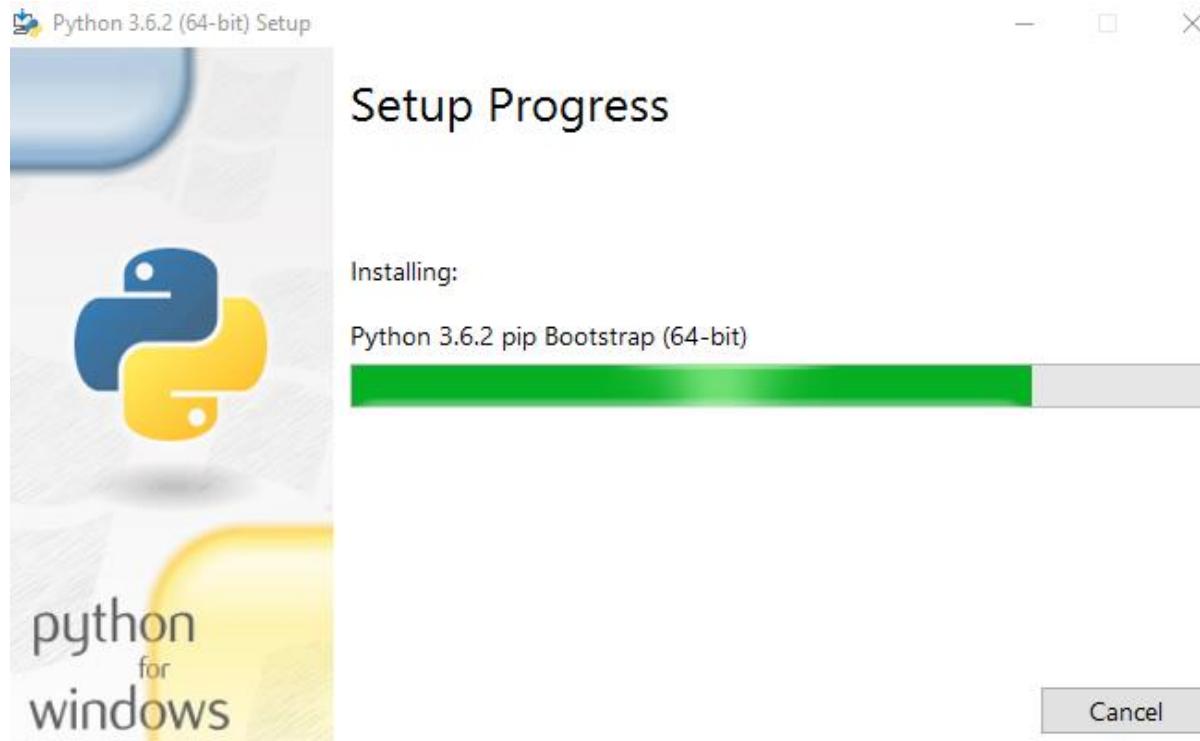
# Install Python Interpreter (Cont.)



# Install Python Interpreter (Cont.)

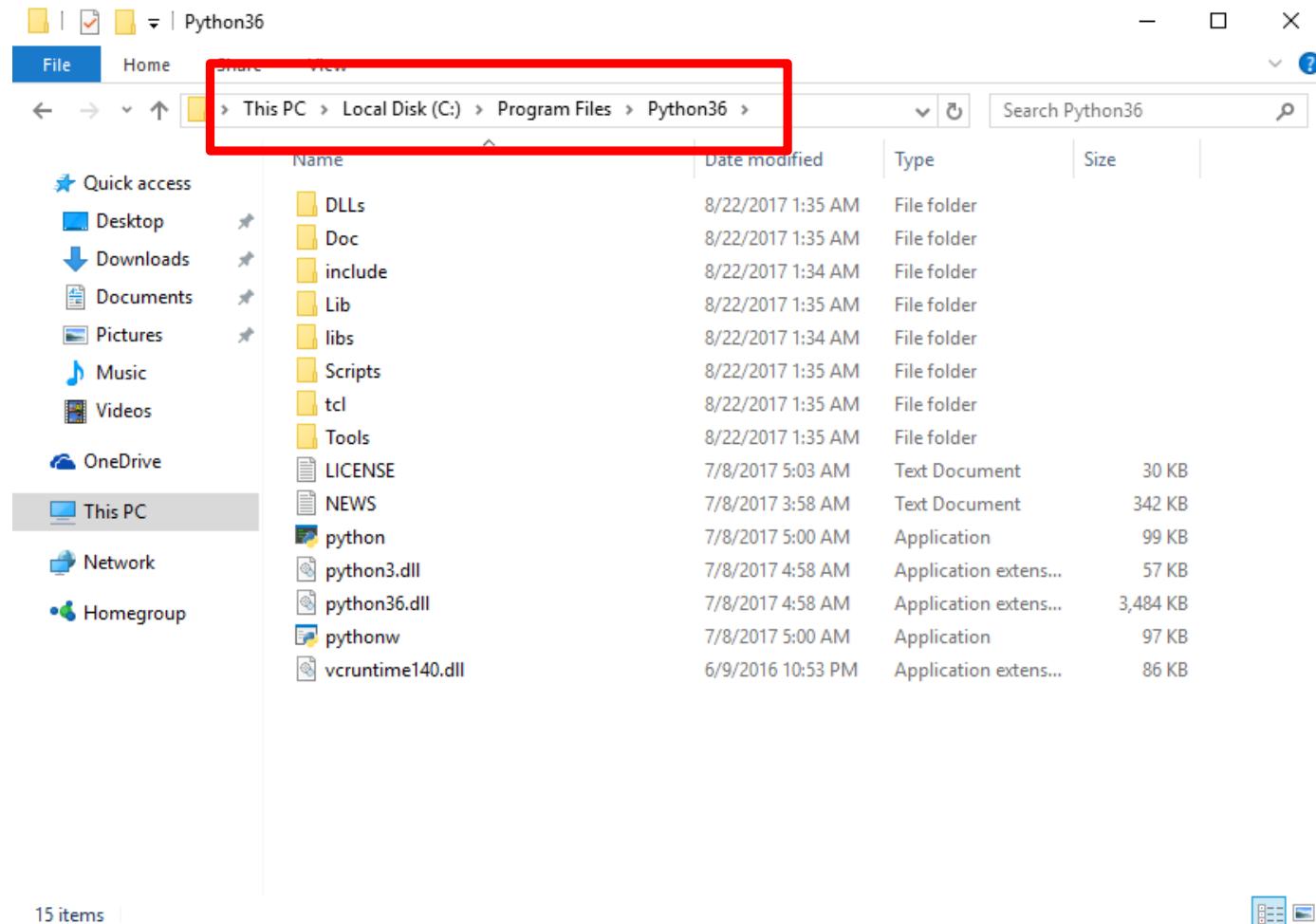


# Install Python Interpreter (Cont.)



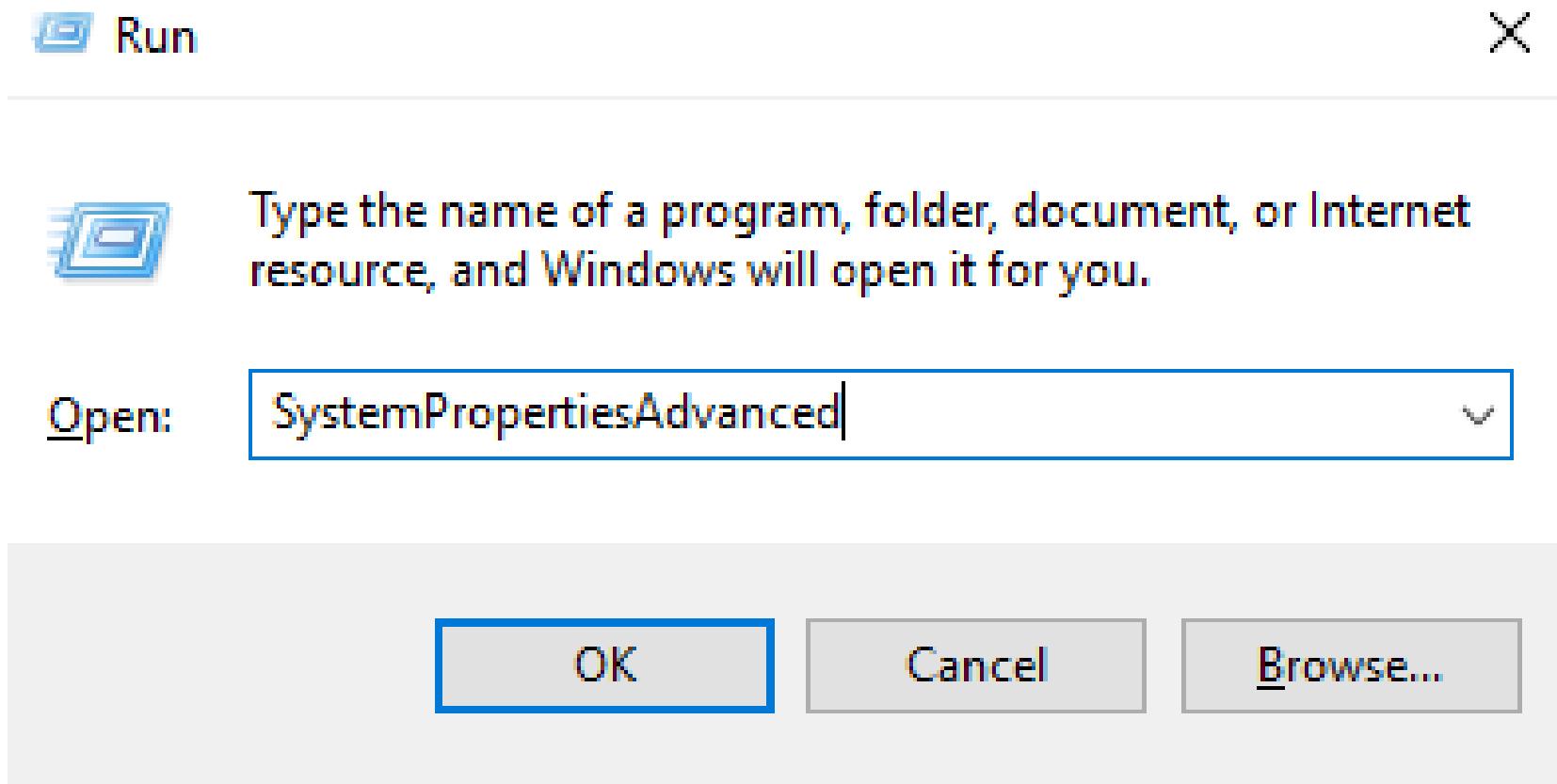
# Check Python Installation

## ■ Installation Folder



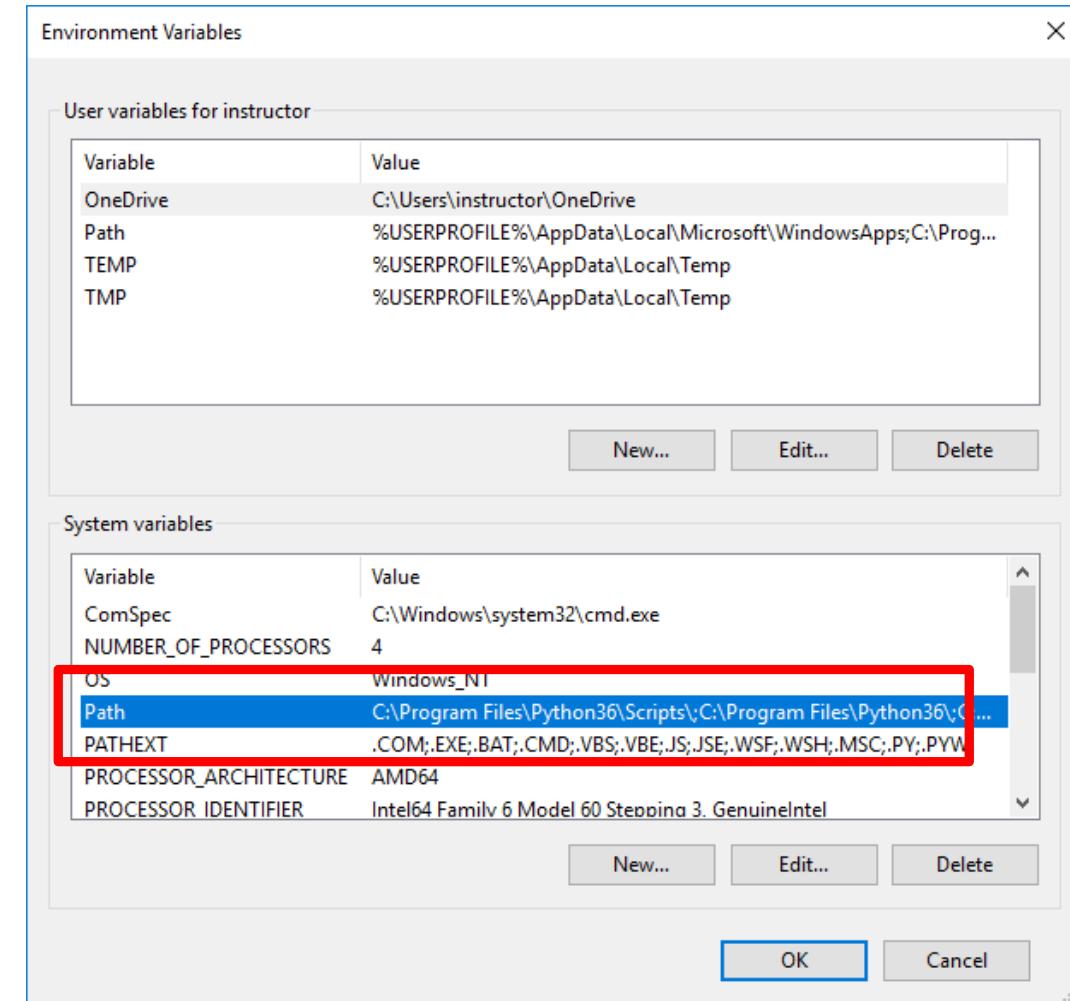
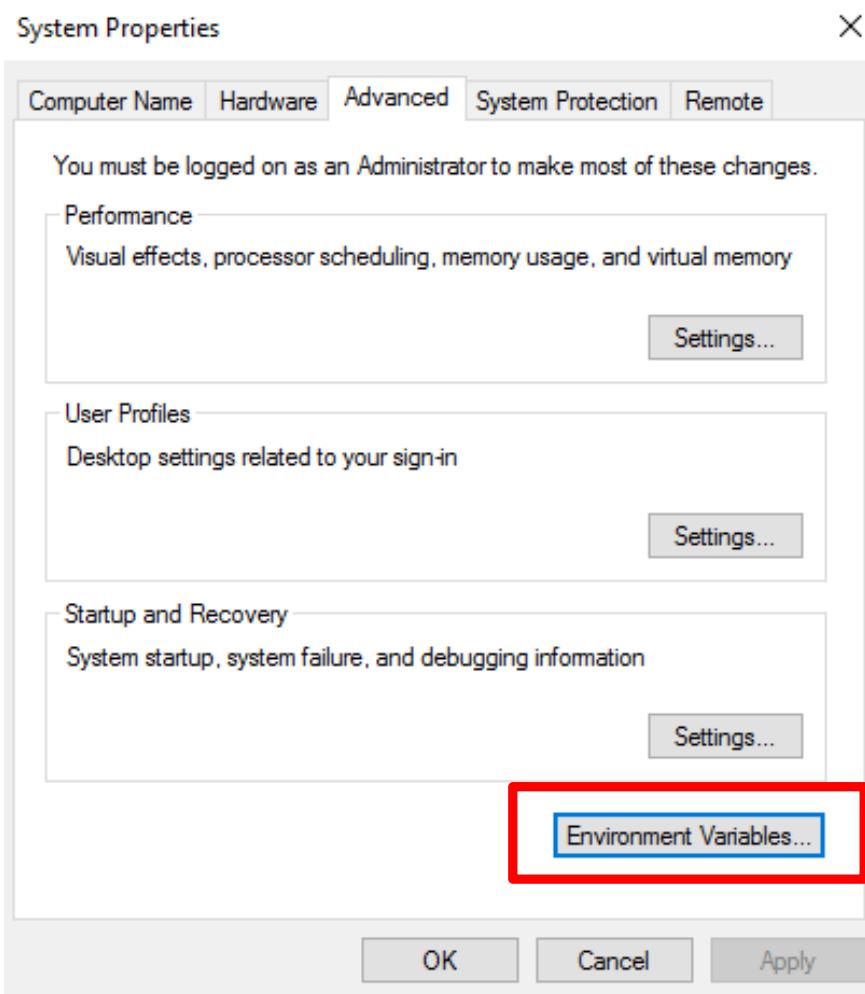
# Check Python Installation (Cont.)

## ■ Windows %PATH%



# Check Python Installation (Cont.)

## ■ Windows %PATH% (Cont.)



# Check Python Installation (Cont.)

## ■ Python Interpreter Version

```
C:\Windows\system32\cmd.exe
```

```
C:\Users\instructor>python -V  
Python 3.6.2
```

```
C:\Users\instructor>python --version  
Python 3.6.2
```

# Python Shell in Windows

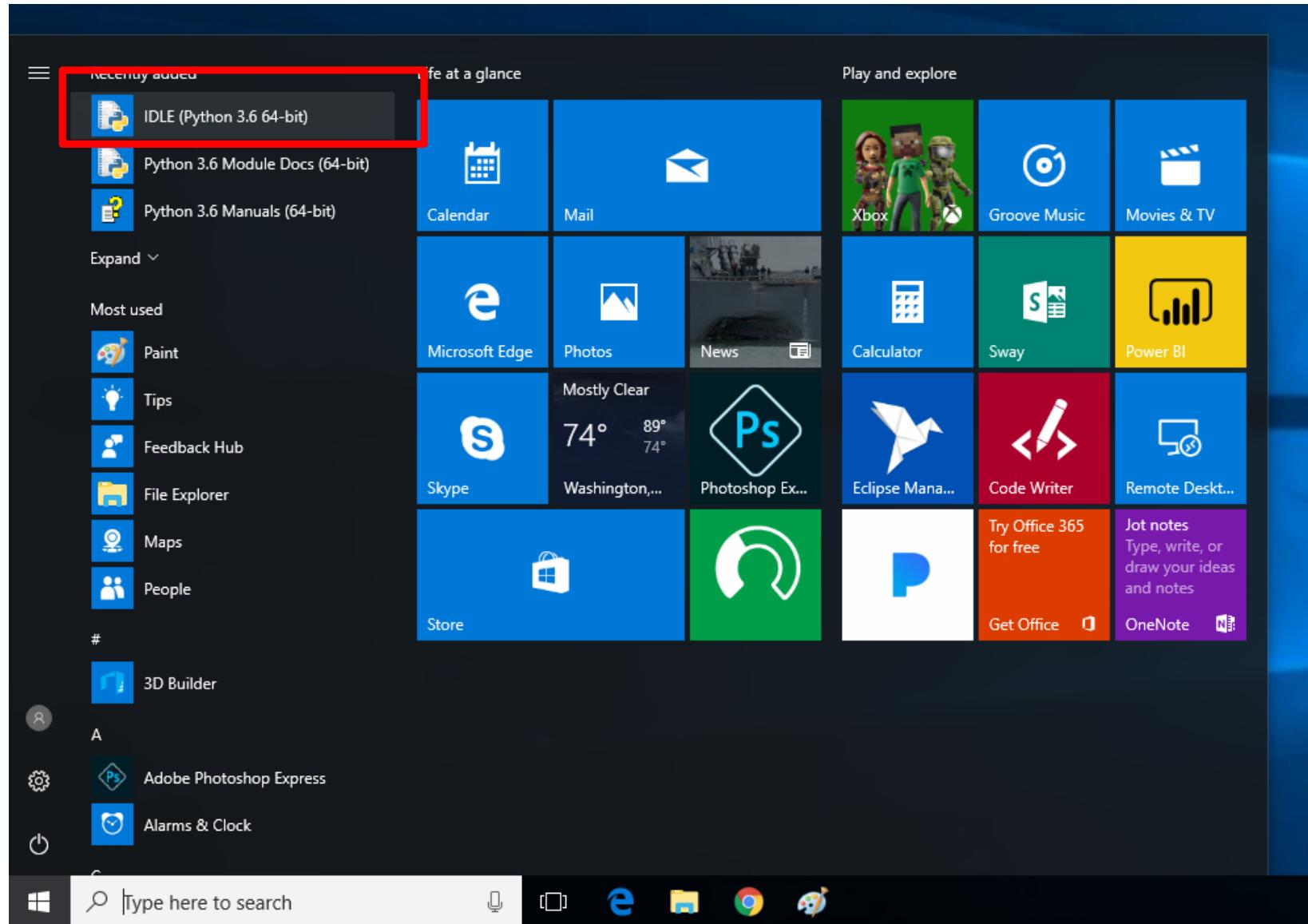
- Type **python** in Command window.

```
C:\Windows\system32\cmd.exe
```

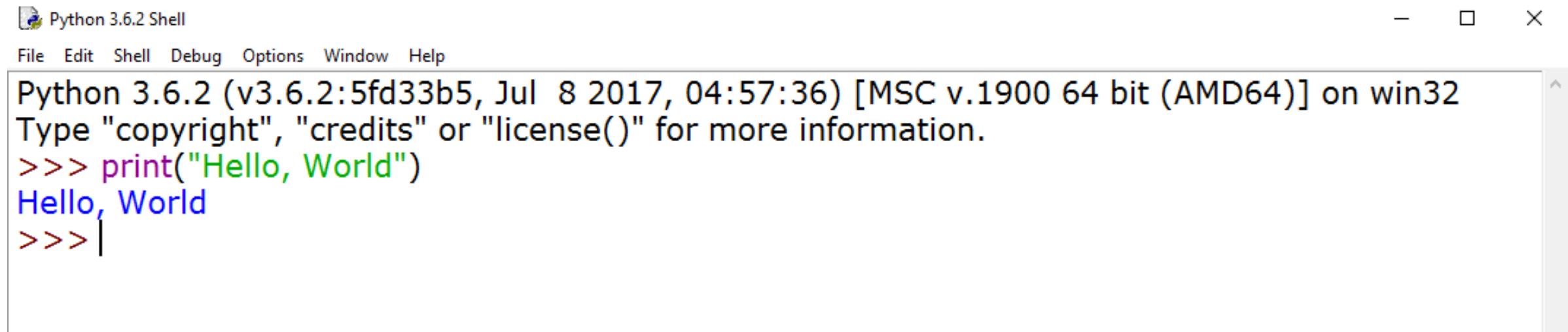
```
C:\Users\instructor>python
Python 3.6.2 (v3.6.2:5fd33b5, Jul  8 2017, 04:57:36) [MSC v.1900 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license" for more information.
>>> print("Hello, World")
Hello, World
>>> quit()

C:\Users\instructor>
```

# IDLE in Windows



# IDLE in Windows (Cont.)



A screenshot of the Python 3.6.2 Shell window. The window title is "Python 3.6.2 Shell". The menu bar includes File, Edit, Shell, Debug, Options, Window, and Help. The main console area displays the Python version information: "Python 3.6.2 (v3.6.2:5fd33b5, Jul 8 2017, 04:57:36) [MSC v.1900 64 bit (AMD64)] on win32". It also shows the prompt "Type "copyright", "credits" or "license()" for more information." followed by the output of the command "print('Hello, World')", which is "Hello, World". A cursor is visible at the end of the command line.

```
Python 3.6.2 (v3.6.2:5fd33b5, Jul 8 2017, 04:57:36) [MSC v.1900 64 bit (AMD64)] on win32
Type "copyright", "credits" or "license()" for more information.
>>> print("Hello, World")
Hello, World
>>> |
```

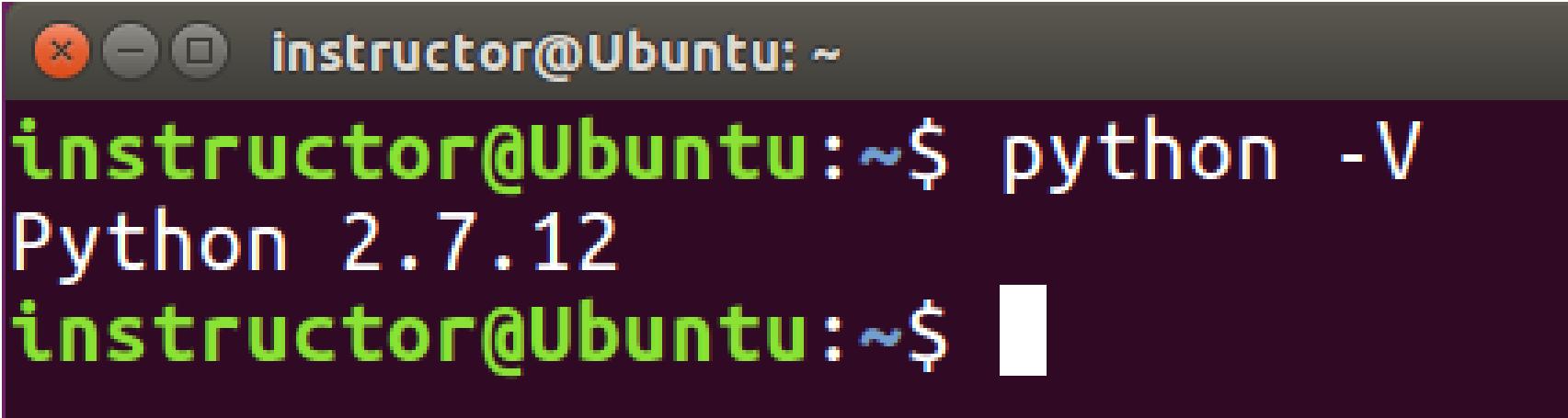
# Installation Python Interpreter on Ubuntu Platform



# First way – Source Compile

- Refer to

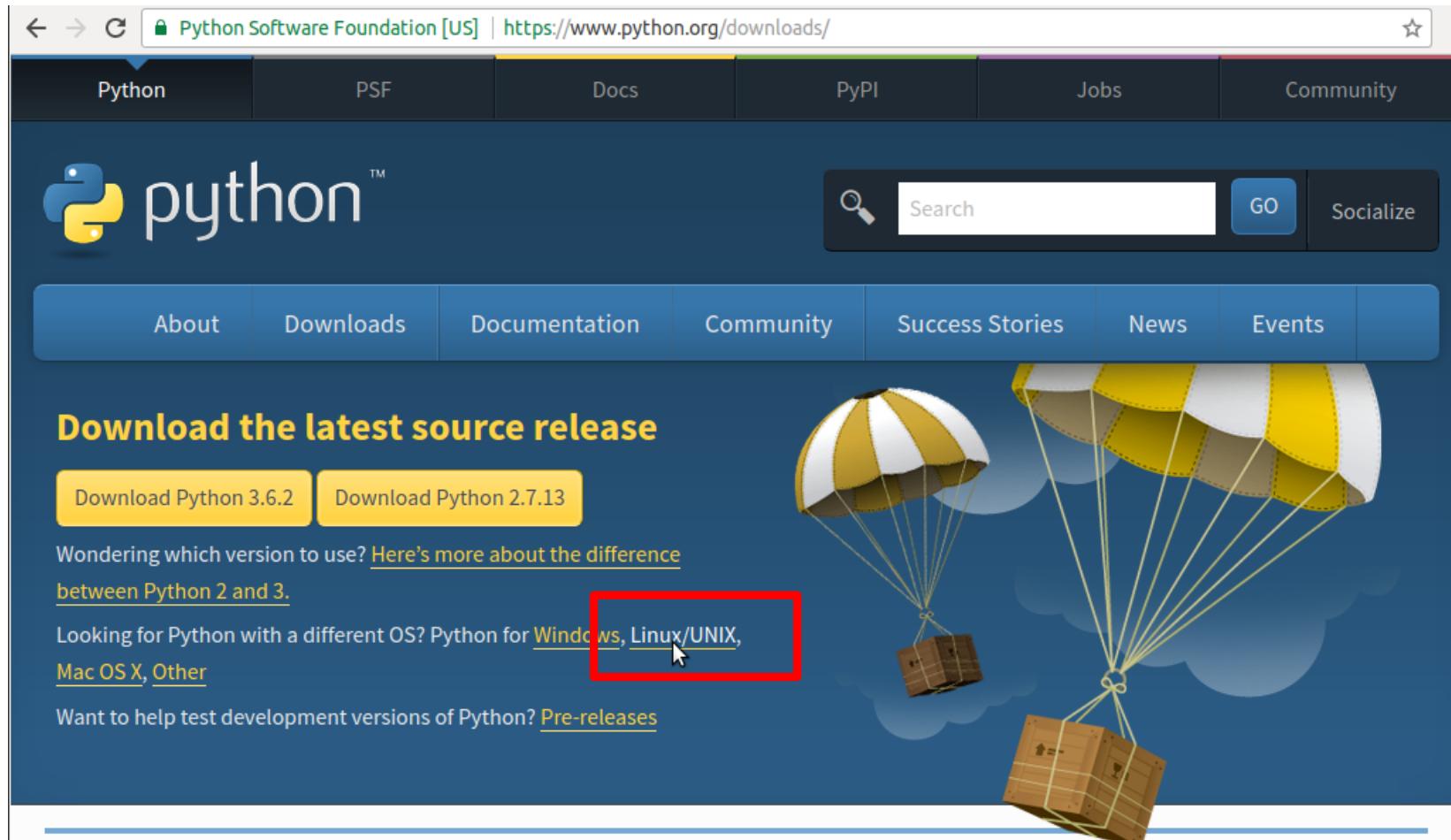
<https://www.youtube.com/watch?v=YFNTNOnJeBo>



A screenshot of a terminal window titled "instructor@Ubuntu: ~". The window contains the following text:  
instructor@Ubuntu:~\$ python -V  
Python 2.7.12  
instructor@Ubuntu:~\$ █

# First way – Source Compile (Cont.)

## 1. Visit <https://www.python.org/downloads/>



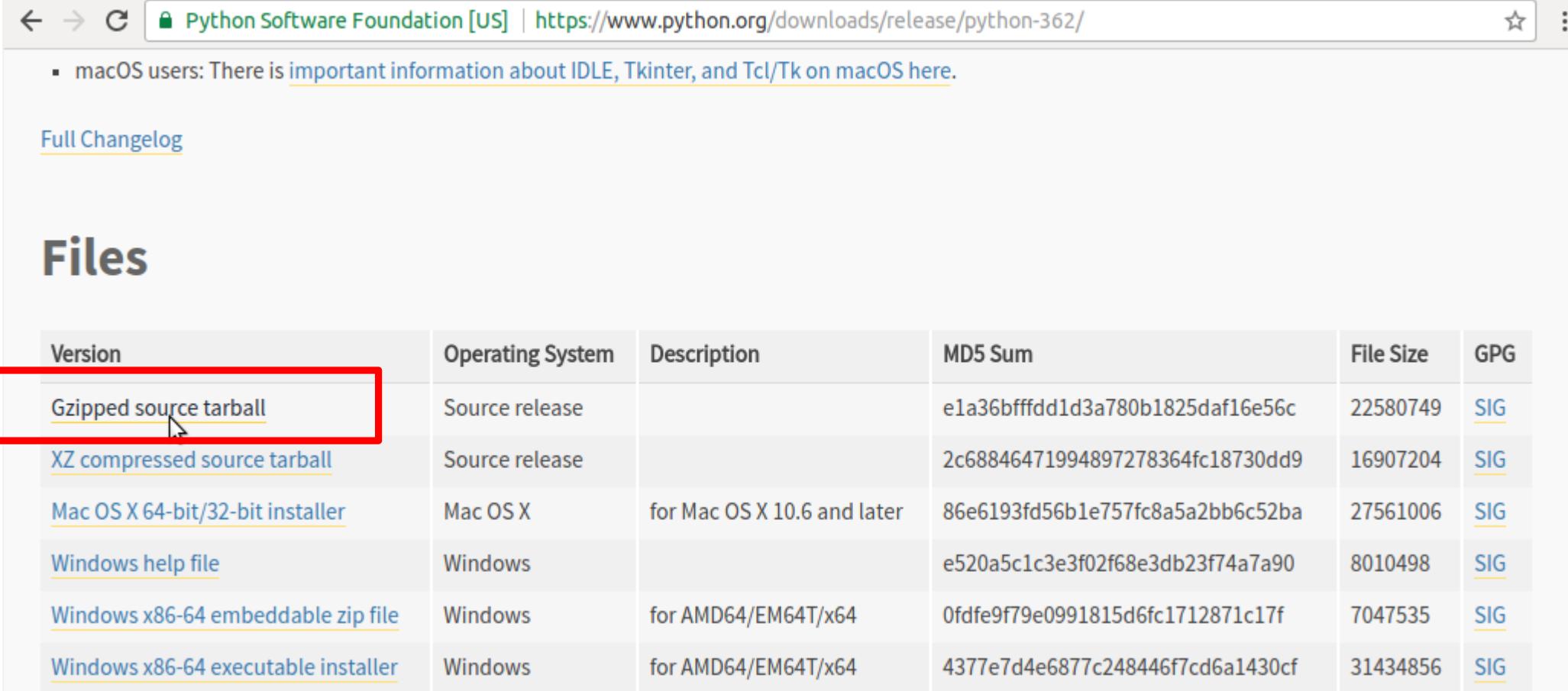
# First way – Source Compile (Cont.)

## 2. Click to **Latest Python 3 Release – Python 3.6.2**



# First way – Source Compile (Cont.)

## 3. Click to Gzipped source tarball



The screenshot shows a web browser window with the URL <https://www.python.org/downloads/release/python-362/>. The page displays a 'Full Changelog' and a 'Files' section. In the 'Files' section, there is a table with columns: Version, Operating System, Description, MD5 Sum, File Size, and GPG. The 'Version' column contains links to different file types: 'Gzipped source tarball', 'XZ compressed source tarball', 'Mac OS X 64-bit/32-bit installer', 'Windows help file', 'Windows x86-64 embeddable zip file', and 'Windows x86-64 executable installer'. The 'Gzipped source tarball' link is highlighted with a red box and a cursor is hovering over it.

Version	Operating System	Description	MD5 Sum	File Size	GPG
<a href="#">Gzipped source tarball</a>	Source release		e1a36bfffdd1d3a780b1825daf16e56c	22580749	<a href="#">SIG</a>
<a href="#">XZ compressed source tarball</a>	Source release		2c68846471994897278364fc18730dd9	16907204	<a href="#">SIG</a>
<a href="#">Mac OS X 64-bit/32-bit installer</a>	Mac OS X	for Mac OS X 10.6 and later	86e6193fd56b1e757fc8a5a2bb6c52ba	27561006	<a href="#">SIG</a>
<a href="#">Windows help file</a>	Windows		e520a5c1c3e3f02f68e3db23f74a7a90	8010498	<a href="#">SIG</a>
<a href="#">Windows x86-64 embeddable zip file</a>	Windows	for AMD64/EM64T/x64	0fdfef9f79e0991815d6fc1712871c17f	7047535	<a href="#">SIG</a>
<a href="#">Windows x86-64 executable installer</a>	Windows	for AMD64/EM64T/x64	4377e7d4e6877c248446f7cd6a1430cf	31434856	<a href="#">SIG</a>

# First way – Source Compile (Cont.)

```
instructor@Ubuntu: ~/Downloads
instructor@Ubuntu:~/Downloads$ ls
Python-3.6.2.tgz
instructor@Ubuntu:~/Downloads$
```

## 4. Uncompress downloaded file.

```
instructor@Ubuntu: ~/Downloads
instructor@Ubuntu:~/Downloads$ ls
Python-3.6.2.tgz
instructor@Ubuntu:~/Downloads$ tar xvfz Python*.tgz
```

# First way – Source Compile (Cont.)



```
instructor@Ubuntu: ~/Downloads
instructor@Ubuntu:~/Downloads$ ls
Python-3.6.2  Python-3.6.2.tgz
instructor@Ubuntu:~/Downloads$
```

## 5. Change directory.

```
instructor@Ubuntu:~/Downloads$
instructor@Ubuntu:~/Downloads$ cd Python-3.6.2/
instructor@Ubuntu:~/Downloads/Python-3.6.2$ ls
aclocal.m4      Doc          LICENSE          Objects        pyconfig.h.in
config.guess   Grammar       Mac              Parser        Python
config.sub     Include       Makefile.pre.in  PC           README.rst
configure      install-sh    Misc             PCbuild      setup.py
configure.ac   Lib           Modules          Programs    Tools
instructor@Ubuntu:~/Downloads/Python-3.6.2$
```

# First way – Source Compile (Cont.)

## 6. Run below commands.

```
sudo apt-get update
sudo apt-get upgrade
sudo apt-get dist-upgrade
sudo apt-get install build-essential python-dev python-setuptools python-pip python-smbus
sudo apt-get install libncursesw5-dev libgdbm-dev libc6-dev
sudo apt-get install zlib1g-dev libsqlite3-dev tk-dev
sudo apt-get install libssl-dev openssl
sudo apt-get install libffi-dev
```

# First way – Source Compile (Cont.)

## 7. Type `./configure`

```
instructor@Ubuntu:~/Downloads/Python-3.6.2$ ./configure
```

```
instructor@Ubuntu: ~/Downloads/Python-3.6.2
checking for gcc ipa-pure-const bug... no
checking for stdatomic.h... yes
checking for GCC >= 4.7 __atomic builtins... yes
checking for ensurepip... upgrade
checking if the dirent structure of a d_type field... yes
checking for the Linux getrandom() syscall... yes
checking for the getrandom() function... no
configure: creating ./config.status
config.status: creating Makefile.pre
config.status: creating Modules/Setup.config
config.status: creating Misc/python.pc
config.status: creating Misc/python-config.sh
config.status: creating Modules/ld_so_aix
config.status: creating pyconfig.h
creating Modules/Setup
creating Modules/Setup.local
creating Makefile
```

If you want a release build with all stable optimizations active (PGO, etc),  
please run `./configure --enable-optimizations`

# First way – Source Compile (Cont.)

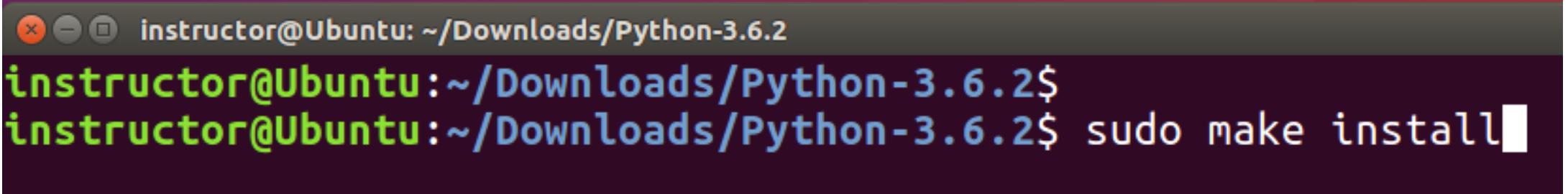
## 8. Type **make**

```
instructor@Ubuntu:~/Downloads/Python-3.6.2$ make
```

```
instructor@Ubuntu:~/Downloads/Python-3.6.2
renaming build/scripts-3.6/2to3 to build/scripts-3.6/2to3-3.6
renaming build/scripts-3.6/pyvenv to build/scripts-3.6/pyvenv-3.6
/usr/bin/install -c -m 644 ./Tools/gdb/libpython.py python-gdb.py
gcc -pthread -c -Wno-unused-result -Wsign-compare -DNDEBUG -g -fwrapv -O3 -Wall
-Wstrict-prototypes -std=c99 -Wextra -Wno-unused-result -Wno-unused-parameter
-Wno-missing-field-initializers -I. -I./Include -DPy_BUILD_CORE -o Programs/_testembed.o ./Programs/_testembed.c
gcc -pthread -Xlinker -export-dynamic -o Programs/_testembed Programs/_testembed.o libpython3.6m.a -lpthread -ldl -lutil -lm
# Substitution happens here, as the completely-expanded BINDIR
# is not available in configure
sed -e "s,@EXENAME@,/usr/local/bin/python3.6m," < ./Misc/python-config.in >python-config.py
# Replace makefile compat. variable references with shell script compat. ones;
->
LC_ALL=C sed -e 's,\${\(\([A-Za-z0-9_]*\)\)},\$\'{\1\},g' < Misc/python-config.sh >python-config
# On Darwin, always use the python version of the script, the shell
# version doesn't use the compiler customizations that are provided
# in python (_osx_support.py).
if test `uname -s` = Darwin; then \
    cp python-config.py python-config; \
fi
```

# First way – Source Compile (Cont.)

9. Type **sudo make install**



The image shows a terminal window with a dark background and light-colored text. At the top, it displays the user's session information: 'instructor@Ubuntu: ~/Downloads/Python-3.6.2'. Below this, there are two lines of text in green, which are part of a command being typed. The first line is 'instructor@Ubuntu:~/Downloads/Python-3.6.2\$' and the second line is 'instructor@Ubuntu:~/Downloads/Python-3.6.2\$ sudo make install'. A cursor is visible at the end of the second line, indicating that the command is still being entered.

```
instructor@Ubuntu: ~/Downloads/Python-3.6.2
instructor@Ubuntu:~/Downloads/Python-3.6.2$
instructor@Ubuntu:~/Downloads/Python-3.6.2$ sudo make install
```

# First way – Source Compile (Cont.)

```
instructor@Ubuntu: ~/Downloads/Python-3.6.2
fi
rm -f /usr/local/share/man/man1/python3.1
(cd /usr/local/share/man/man1; ln -s python3.6.1 python3.1)
if test "xupgrade" != "xno" ; then \
    case upgrade in \
        upgrade) ensurepip="--upgrade" ;; \
        install|*) ensurepip="" ;; \
    esac; \
    ./python -E -m ensurepip \
        $ensurepip --root=/ ; \
fi
The directory '/home/instructor/.cache/pip/http' or its parent directory is not
owned by the current user and the cache has been disabled. Please check the perm
issions and owner of that directory. If executing pip with sudo, you may want su
do's -H flag.
The directory '/home/instructor/.cache/pip' or its parent directory is not owned
by the current user and caching wheels has been disabled. check the permissions
and owner of that directory. If executing pip with sudo, you may want sudo's -H
flag.
Collecting setuptools
Collecting pip
Installing collected packages: setuptools, pip
Successfully installed pip-9.0.1 setuptools-28.8.0
```

# Second way – Using apt-get install

## 4. Type `sudo apt-get install python3`

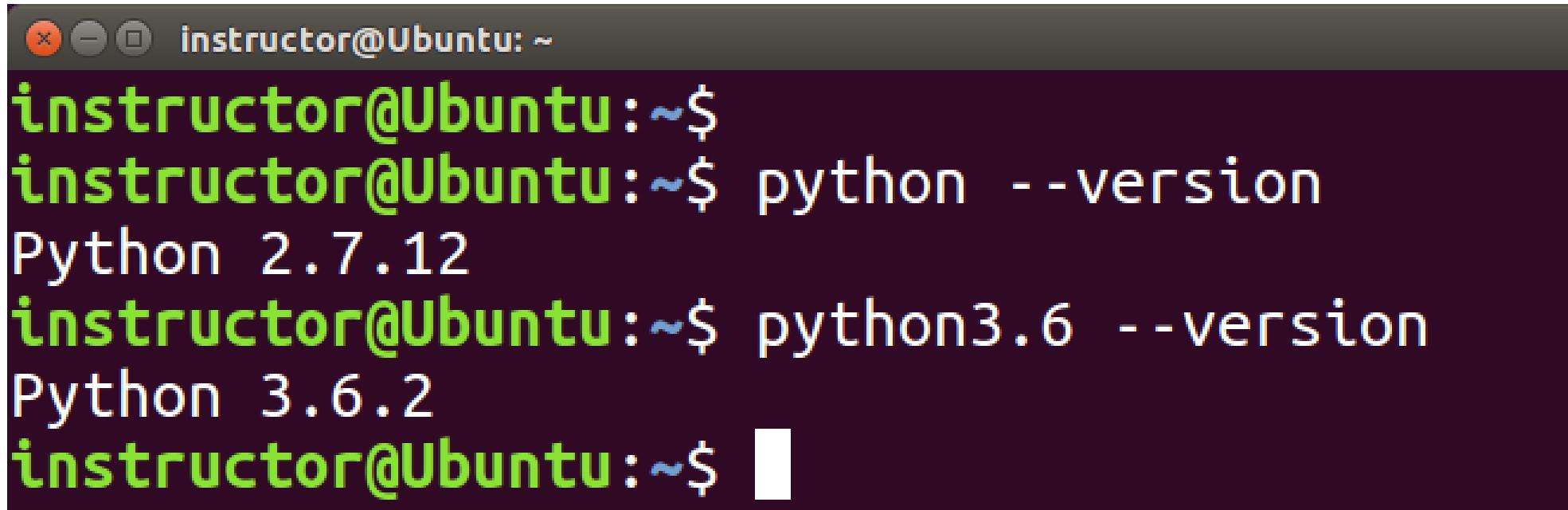
```
instructor@Ubuntu:~$ sudo apt-get install python3.6
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following packages were automatically installed and are no longer required:
  linux-headers-4.8.0-36 linux-headers-4.8.0-36-generic
  linux-image-4.8.0-36-generic linux-image-extra-4.8.0-36-generic snap-confine
Use 'sudo apt autoremove' to remove them.
The following additional packages will be installed:
  libpython3.6-minimal libpython3.6-stdlib python3.6-minimal
Suggested packages:
  python3.6-venv python3.6-doc binfmt-support
The following NEW packages will be installed:
  libpython3.6-minimal libpython3.6-stdlib python3.6 python3.6-minimal
0 upgraded, 4 newly installed, 0 to remove and 3 not upgraded.
Need to get 4,321 kB of archives.
After this operation, 23.5 MB of additional disk space will be used.
Do you want to continue? [Y/n] █
```

# Second way – Using apt-get install

```
instructor@Ubuntu:~$ Selecting previously unselected package libpython3.6-minimal:amd64.  
          (Reading database ... 248122 files and directories currently installed.)  
Preparing to unpack .../libpython3.6-minimal_3.6.2-1+xenial1_amd64.deb ...  
Unpacking libpython3.6-minimal:amd64 (3.6.2-1+xenial1) ...  
Selecting previously unselected package python3.6-minimal.  
Preparing to unpack .../python3.6-minimal_3.6.2-1+xenial1_amd64.deb ...  
Unpacking python3.6-minimal (3.6.2-1+xenial1) ...  
Selecting previously unselected package libpython3.6-stdlib:amd64.  
Preparing to unpack .../libpython3.6-stdlib_3.6.2-1+xenial1_amd64.deb ...  
Unpacking libpython3.6-stdlib:amd64 (3.6.2-1+xenial1) ...  
Selecting previously unselected package python3.6.  
Preparing to unpack .../python3.6_3.6.2-1+xenial1_amd64.deb ...  
Unpacking python3.6 (3.6.2-1+xenial1) ...  
Processing triggers for man-db (2.7.5-1) ...  
Processing triggers for desktop-file-utils (0.22-1ubuntu5.1) ...  
Processing triggers for gnome-menus (3.13.3-6ubuntu3.1) ...  
Processing triggers for bamfdaemon (0.5.3~bzr0+16.04.20160824-0ubuntu1) ...  
Rebuilding /usr/share/applications/bamf-2.index...  
Processing triggers for mime-support (3.59ubuntu1) ...  
Setting up libpython3.6-minimal:amd64 (3.6.2-1+xenial1) ...  
Setting up python3.6-minimal (3.6.2-1+xenial1) ...  
Setting up libpython3.6-stdlib:amd64 (3.6.2-1+xenial1) ...  
Setting up python3.6 (3.6.2-1+xenial1) ...  
instructor@Ubuntu:~$
```

# Second way – Using apt-get install

## 5. Version check



The image shows a terminal window with a dark background and light-colored text. It features three tabs at the top. The active tab is labeled "instructor@Ubuntu: ~". The window contains the following text:

```
instructor@Ubuntu:~$  
instructor@Ubuntu:~$ python --version  
Python 2.7.12  
instructor@Ubuntu:~$ python3.6 --version  
Python 3.6.2  
instructor@Ubuntu:~$
```

# Second way – Using apt-get install

```
instructor@Ubuntu:~$ python3.6
Python 3.6.2 (default, Jul 17 2017, 23:14:31)
[GCC 5.4.0 20160609] on linux
Type "help", "copyright", "credits" or "license" for more information.
>>> print ("Hello, World")
Hello, World
>>> quit()
instructor@Ubuntu:~$ █
```

# Second way – Using apt-get install

## 6. Type **apt-cache search python3**

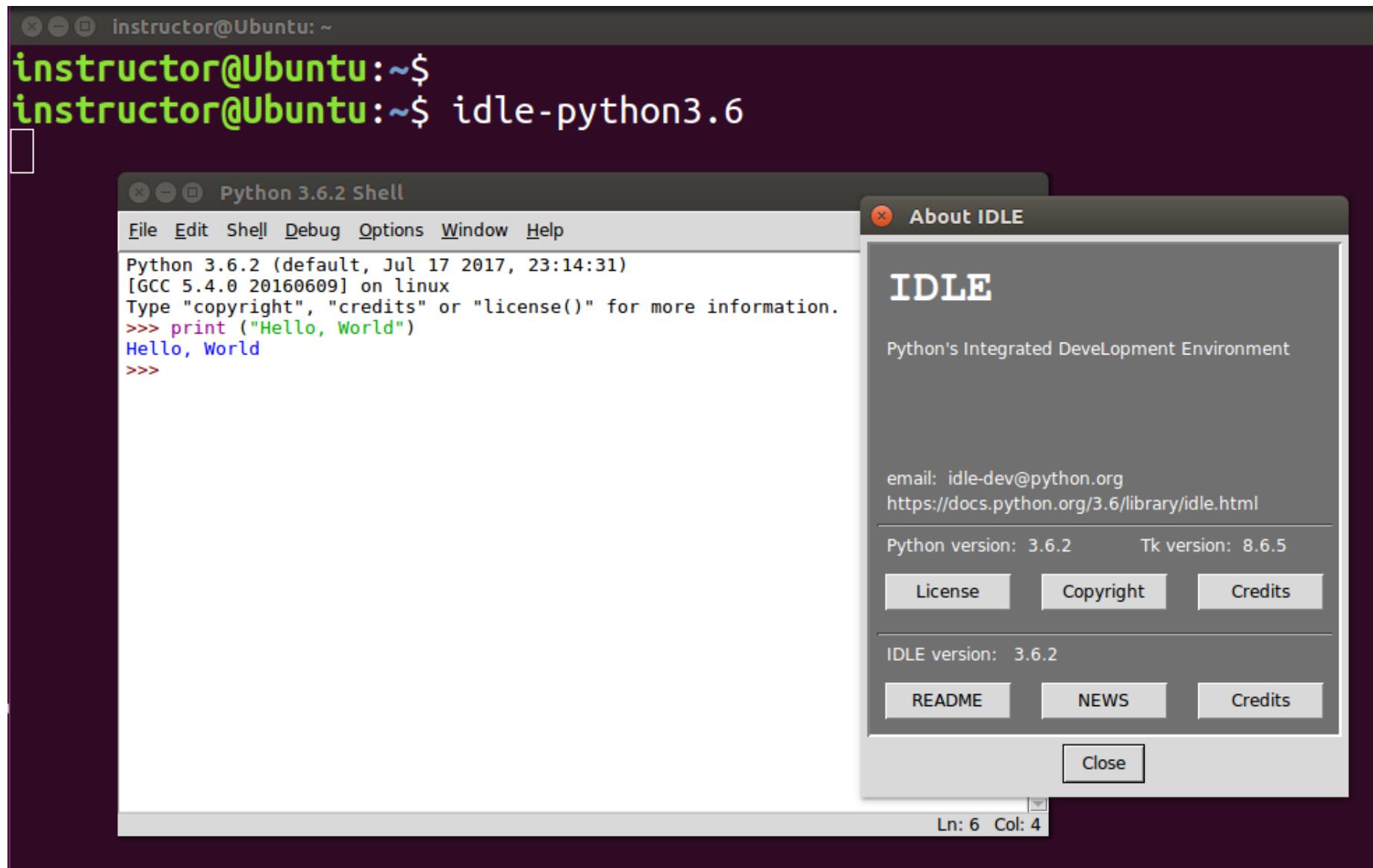
```
instructor@Ubuntu:~$ apt-cache search python3.6
libpython3.6-dbg - Debug Build of the Python Interpreter (version 3.6)
libpython3.6 - Shared Python runtime library (version 3.6)
libpython3.6-dev - Header files and a static library for Python (v3.6)
libpython3.6-minimal - Minimal subset of the Python language (version 3.6)
libpython3.6-stdlib - Interactive high-level object-oriented language (standard
library, version 3.6)
python3.6-dbg - Debug Build of the Python Interpreter (version 3.6)
python3.6-dev - Header files and a static library for Python (v3.6)
python3.6-minimal - Minimal subset of the Python language (version 3.6)
python3.6-venv - Interactive high-level object-oriented language (pyvenv binary,
version 3.6)
python3.6 - Interactive high-level object-oriented language (version 3.6)
idle-python3.6 - IDE for Python (v3.6) using Tkinter
libpython3.6-testsuite - Testsuite for the Python standard library (v3.6)
python3.6-doc - Documentation for the high-level object-oriented language Python
(v3.6)
python3.6-examples - Examples for the Python language (v3.6)
python3.6-gdbm-dbg - GNU dbm database support for Python (version 3.6 debug exte
nsion)
python3.6-gdbm - GNU dbm database support for Python (version 3.6)
python3.6-tk-dbg - Tkinter - Writing Tk applications with Python (version 3.6 de
bug extension)
```

# Second way – Using apt-get install

## 7. Type `sudo apt-get install idle-python3.6`

```
instructor@Ubuntu:~$ sudo apt-get install idle-python3.6
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following packages were automatically installed and are no longer required:
  linux-headers-4.8.0-36 linux-headers-4.8.0-36-generic
  linux-image-4.8.0-36-generic linux-image-extra-4.8.0-36-generic snap-confine
Use 'sudo apt autoremove' to remove them.
The following additional packages will be installed:
  python3.6-tk tk8.6-blt2.5
Suggested packages:
  tix python3.6-tk-dbg blt-demo
The following NEW packages will be installed:
  idle-python3.6 python3.6-tk tk8.6-blt2.5
0 upgraded, 3 newly installed, 0 to remove and 3 not upgraded.
Need to get 739 kB of archives.
After this operation, 2,347 kB of additional disk space will be used.
Do you want to continue? [Y/n] y
```

# Second way – Using apt-get install



# Text Editors

# Text Editor – Sublime Text 3

- Sublime Text 3 (<http://www.sublimetext.com/3>) – Half Freeware

A screenshot of the Sublime Text 3 interface. The window title is "C:\Python Home\hello.py - Sublime Text (UNREGISTERED)". The menu bar includes File, Edit, Selection, Find, View, Goto, Tools, Project, Preferences, and Help. The "OPEN FILES" section shows a single file "hello.py". The code editor contains the following Python code:

```
1 print ("Hello, World")
```

The output panel at the bottom displays the result of running the code:

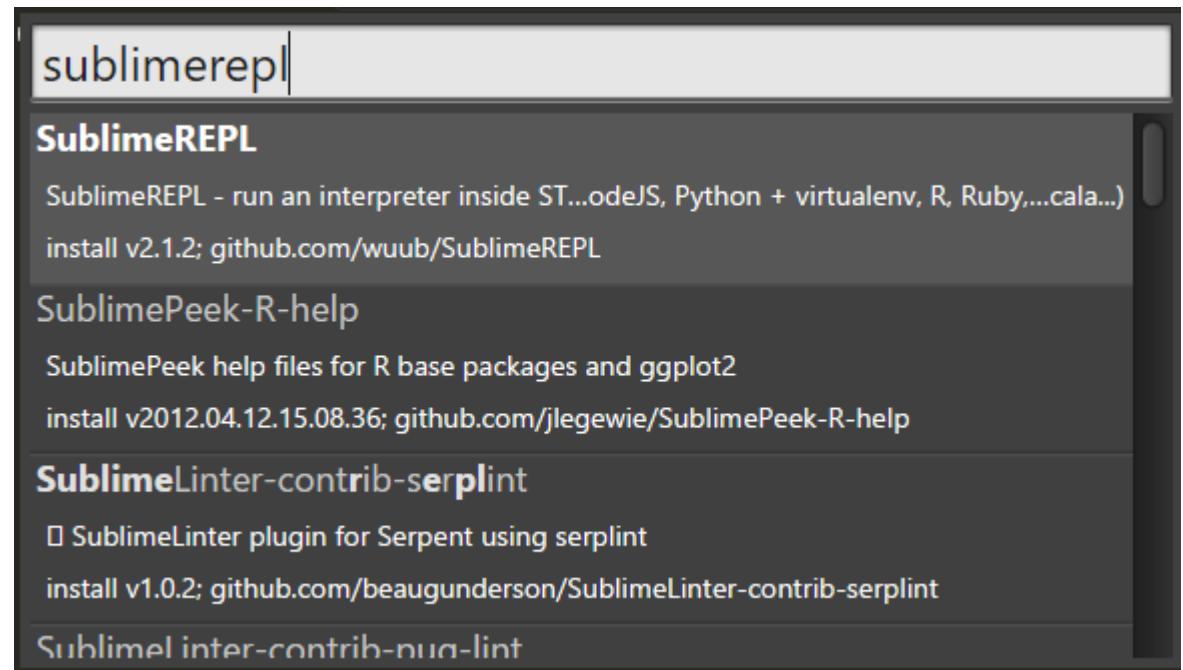
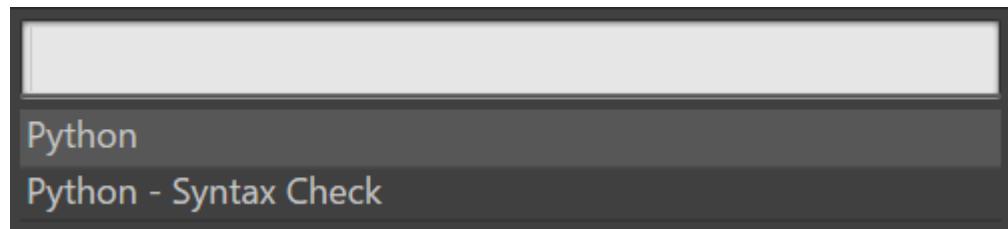
```
Hello, World
[Finished in 0.1s]
```

At the bottom of the interface, status bars show "Line 1, Column 21", "Tab Size: 2", and "Python".



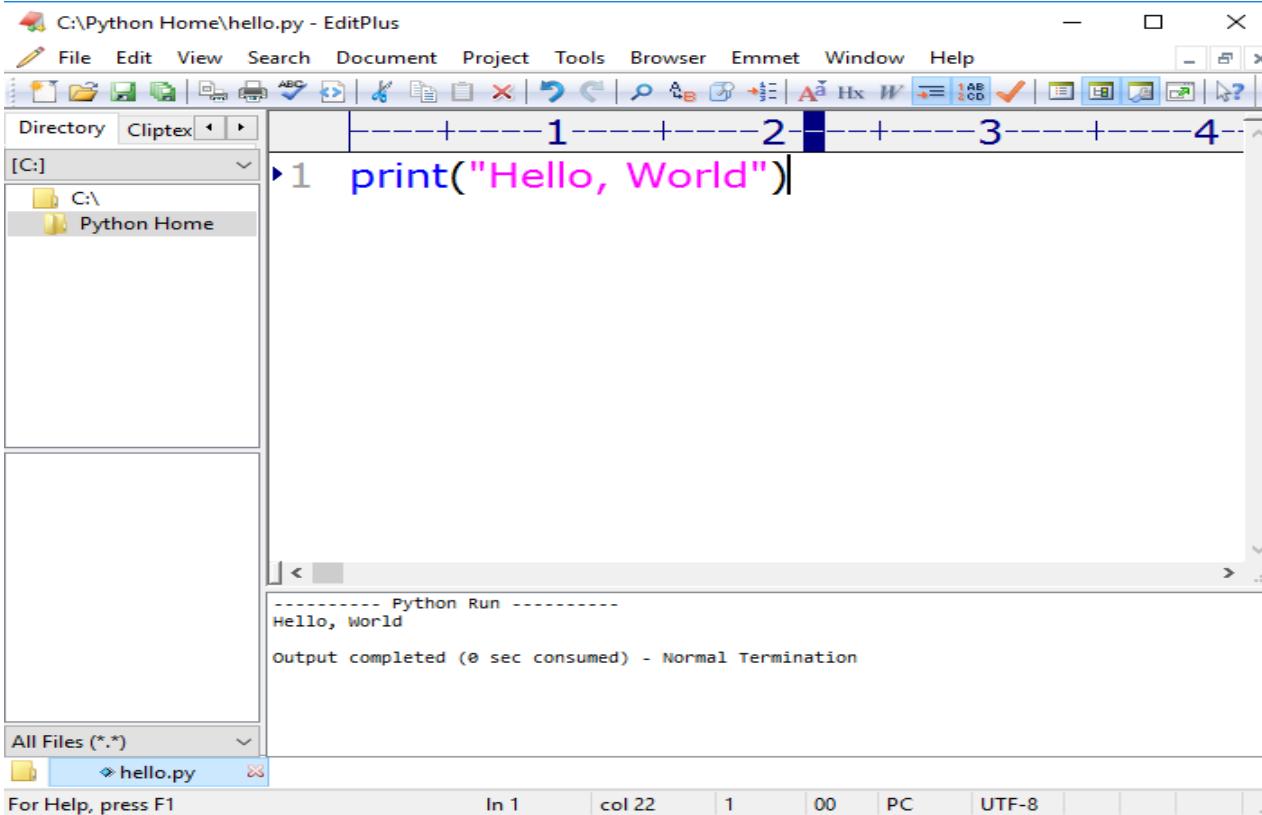
# Text Editor – Sublime Text 3 (Cont.)

- Refer to <http://webnauts.tistory.com/454>



# Text Editor - EditPlus

- EditPlus – (<http://www.editplus.com/>) – Shareware



The screenshot shows the EditPlus interface with a Python file named 'hello.py' open. The code in the editor is:

```
1 print("Hello, World")
```

In the bottom pane, the output of the Python run is displayed:

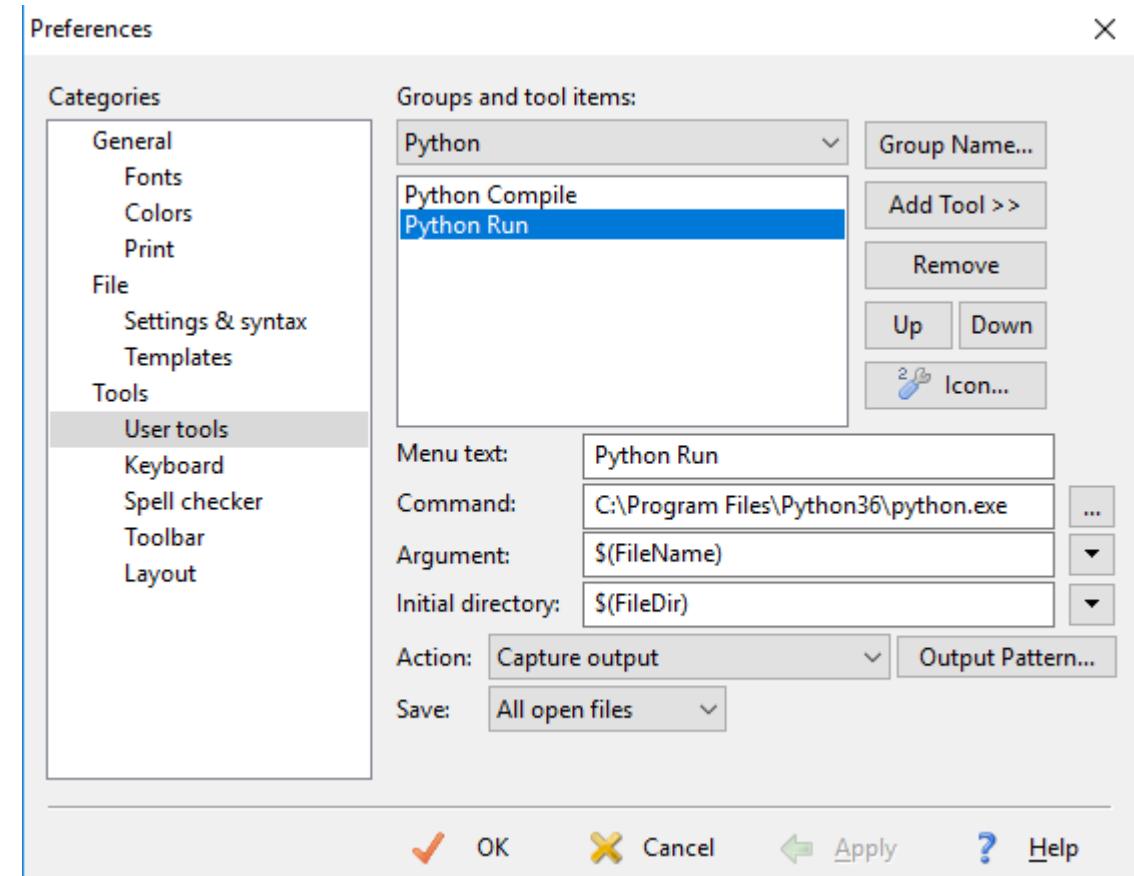
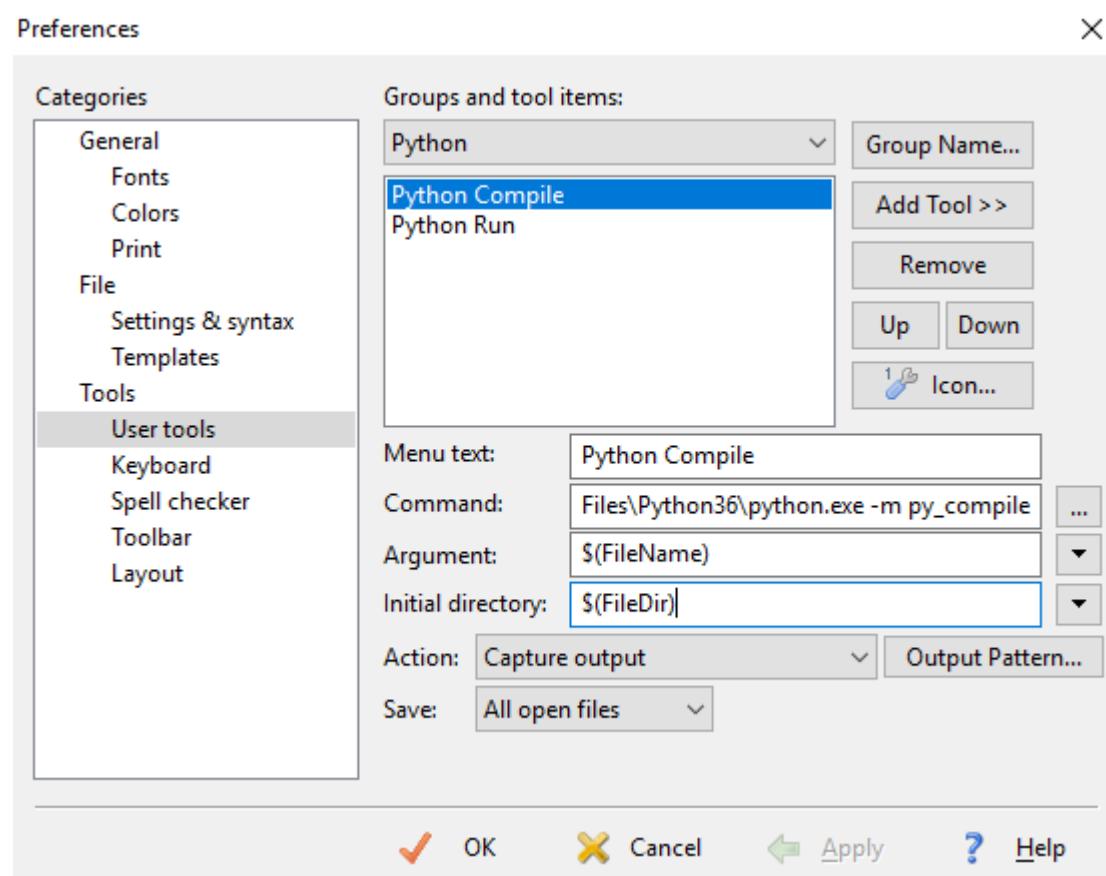
```
-- Python Run --
Hello, World
Output completed (0 sec consumed) - Normal Termination
```

The status bar at the bottom shows: In 1 | col 22 | 1 | 00 | PC | UTF-8.



# Text Editor – EditPlus (Cont.)

- Refer to <http://findnew.tistory.com/21>



# Text Editor - Geany

- Geany - (<http://www.geany.org/>) - OpenSource

hello.py - C:\Python Home - Geany

File Edit Search View Document Project Build Tools Help

New Open Save Save All Revert Close Back Forward Compile Build Execute Color Chooser

Symbols Documents hello.py

No symbols found

```
1 print ("Hello, World")
2
```

Status python -m py\_compile "hello.py" (in directory: C:\Python Home)

Compiler Compilation finished successfully.

Messages

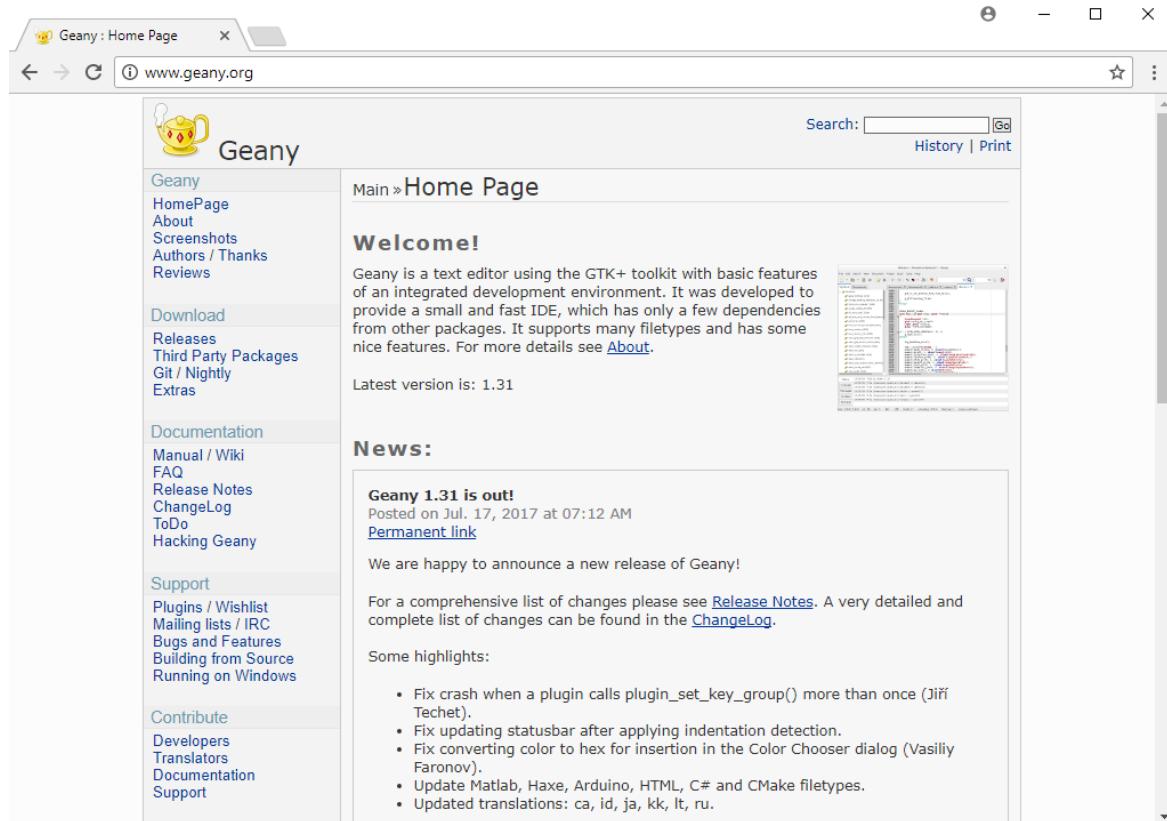
Scribble

line: 1 / 2 col: 22 sel: 0 INS TAB mode: CRLF encoding: UTF-8 filetype: Python scope: unknown



# Text Editor – Geany (Cont.)

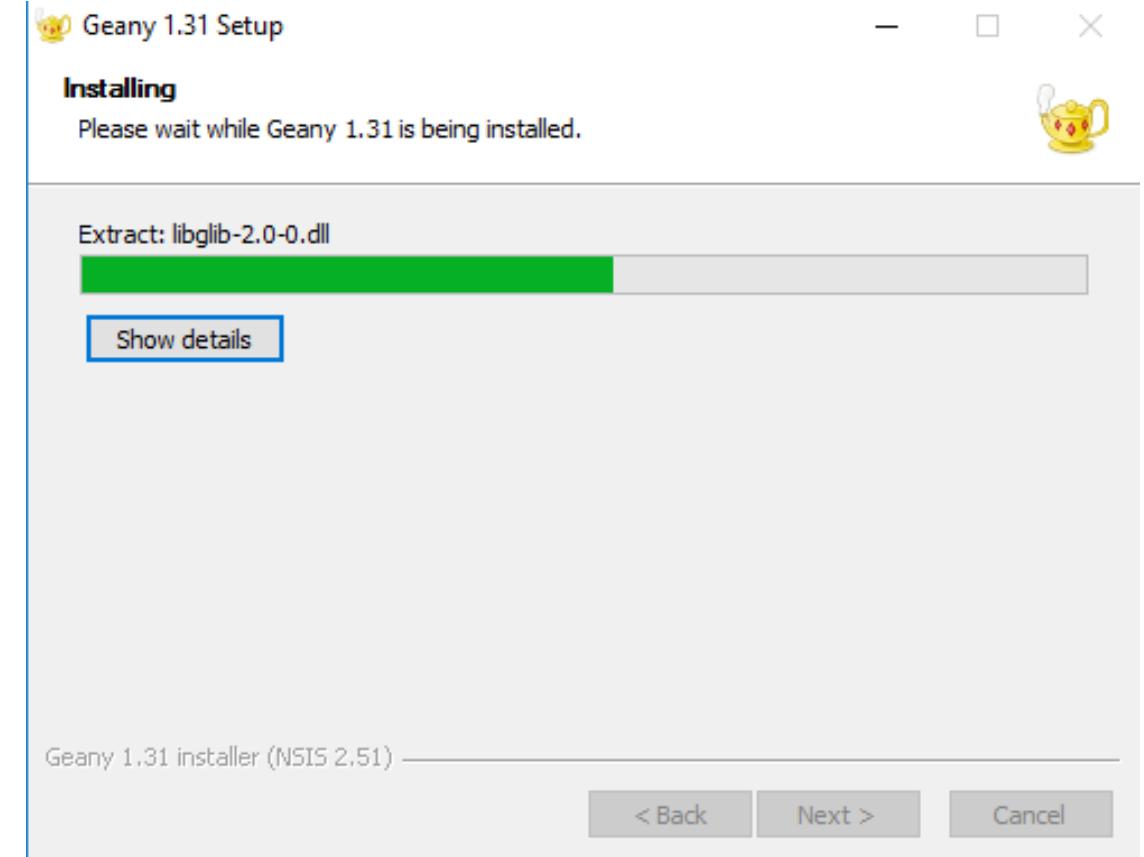
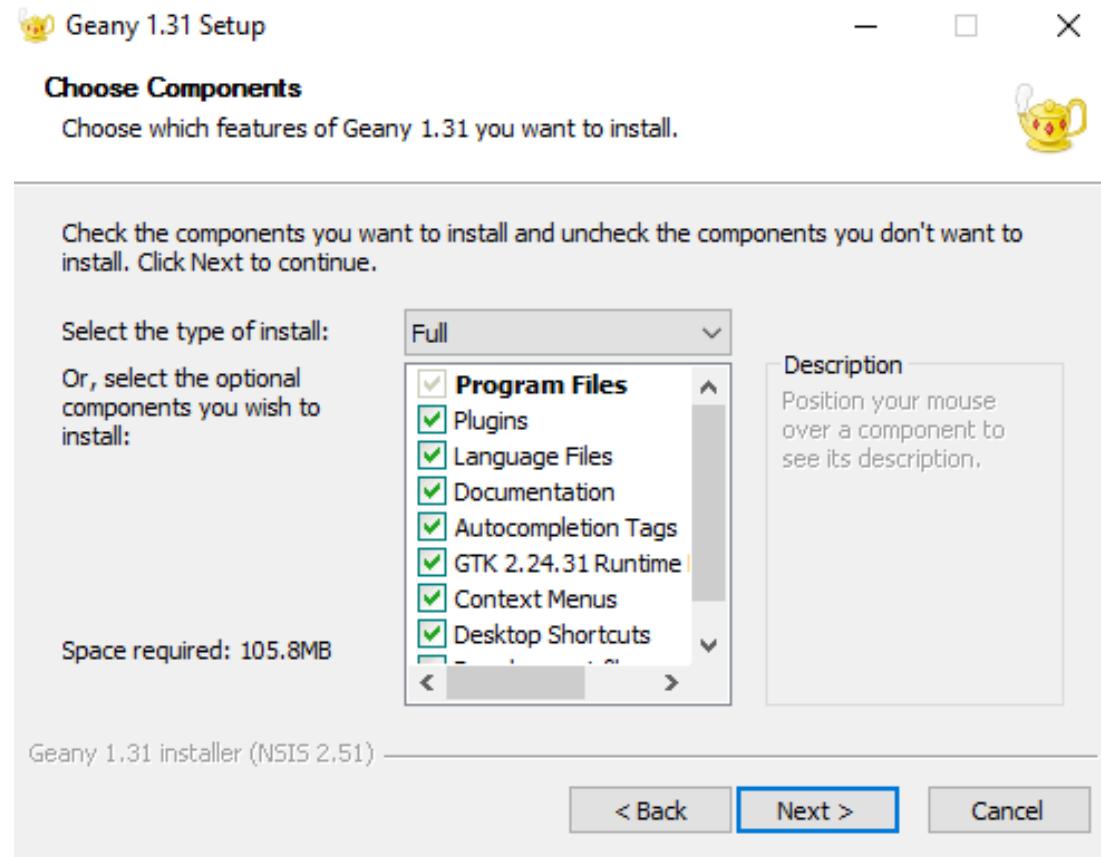
## ■ Geany – (<http://www.geany.org/>) – OpenSource



A screenshot of the Geany website's "Releases" page. The page has a sidebar with links for Geany (HomePage, About, Screenshots, Authors / Thanks, Reviews), Download (Releases, Third Party Packages, Git / Nightly, Extras), Documentation (Manual / Wiki, FAQ, Release Notes, ChangeLog, ToDo, Hacking Geany), Support (Plugins / Wishlist, Mailing lists / IRC, Bugs and Features), and a "Source distribution" section. The main content area features a "Download » Releases" section with links for "Source" (WindowsBinaries, MacOSXBinaries, OlderVersions, Third Party Packages) and "Source distribution" links for "geany-1.31.tar.gz (GPG Sig)" and "geany-1.31.tar.bz2 (GPG Sig)". It also includes a note about GPG keys and sections for "Windows Binaries" and "Mac OSX".

# Text Editor – Geany (Cont.)

## ■ Geany – (<http://www.geany.org/>) – OpenSource



# Text Editor – Atom

- Atom – (<https://atom.io>) – OpenSource

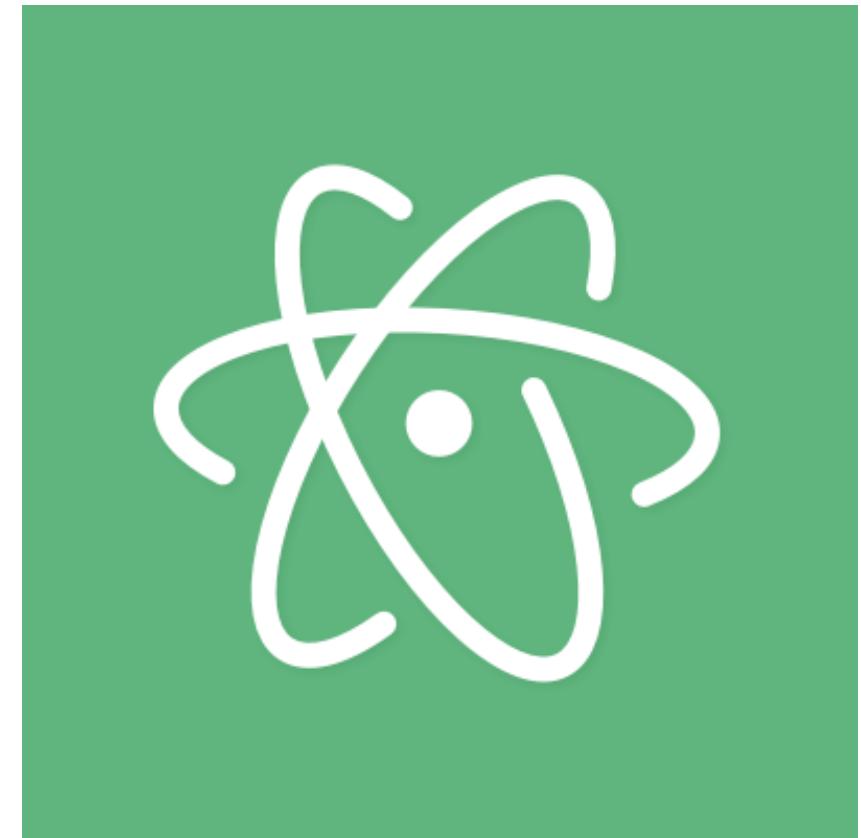
A screenshot of the Atom text editor interface. The title bar says "test.py — ~/PythonHome — Atom". The left sidebar shows a "Project" tree with "PythonHome" expanded, containing ".metadata", "0823", and "test.py". The main editor area has "test.py" selected, displaying the following code:

```
1 print ("Hello, World")
```

The bottom status bar shows "Python - test.py:2 ✓" and the output console displays:

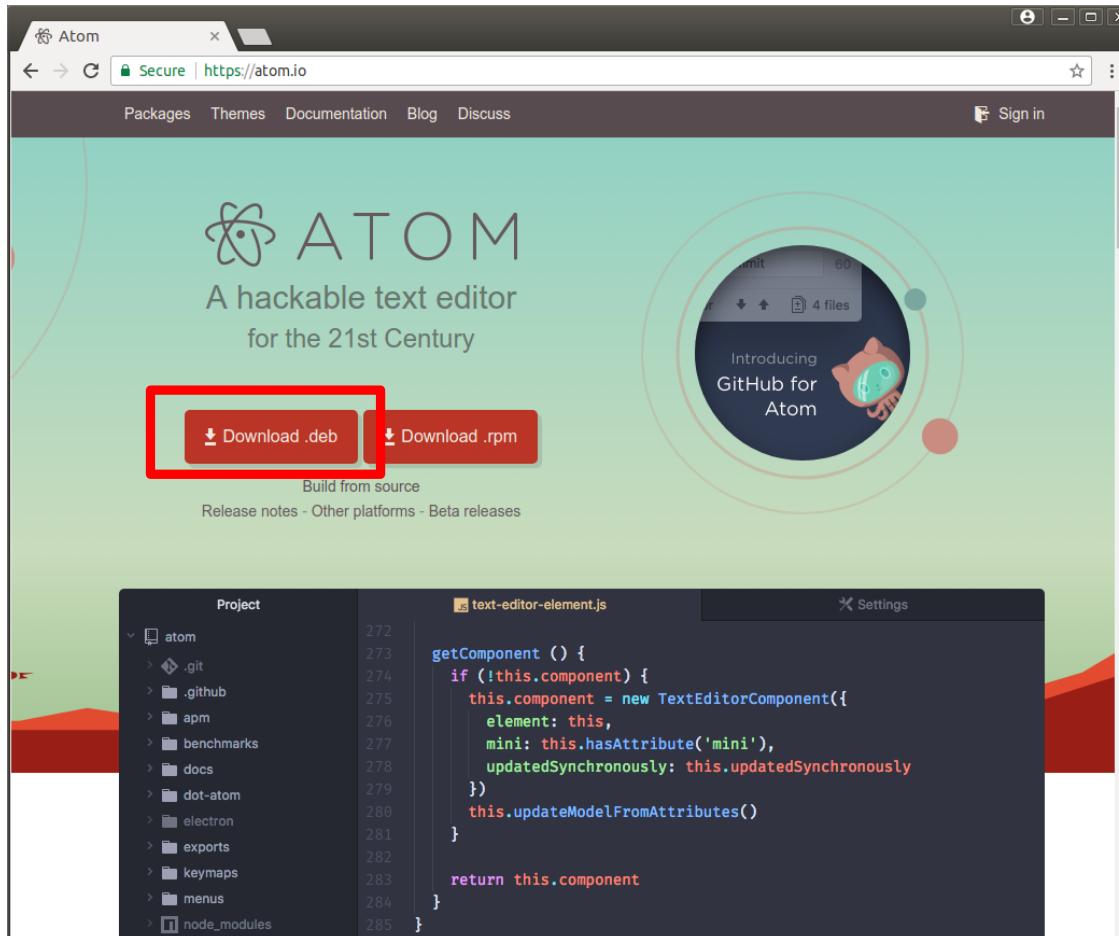
```
Hello, World
[Finished in 0.068s]
```

The bottom navigation bar includes "LF", "UTF-8", "Python", and "0 files".



# Text Editor – Atom

- Atom – (<https://atom.io>) – OpenSource



```
instructor@Ubuntu: ~/Downloads$ ls
atom-amd64.deb
instructor@Ubuntu:~/Downloads$
```

```
/Downloads$ sudo dpkg -i atom-amd64.deb
```

# Text Editor – Atom

## ■ Atom – (<https://atom.io>) – OpenSource

```
instructor@Ubuntu:~/Downloads$ sudo dpkg -i atom-amd64.deb
[sudo] password for instructor:
Selecting previously unselected package atom.
(Reading database ... 249086 files and directories currently installed.)
Preparing to unpack atom-amd64.deb ...
Unpacking atom (1.19.3) ...
dpkg: dependency problems prevent configuration of atom:
  atom depends on git; however:
    Package git is not installed.

dpkg: error processing package atom (--install):
  dependency problems - leaving unconfigured
Processing triggers for desktop-file-utils (0.22-1ubuntu5.1) ...
Processing triggers for gnome-menus (3.13.3-6ubuntu3.1) ...
Processing triggers for bamfdaemon (0.5.3~bzr0+16.04.20160824-0ubuntu1) ...
Rebuilding /usr/share/applications/bamf-2.index...
Processing triggers for mime-support (3.59ubuntu1) ...
Errors were encountered while processing:
  atom
instructor@Ubuntu:~/Downloads$
```

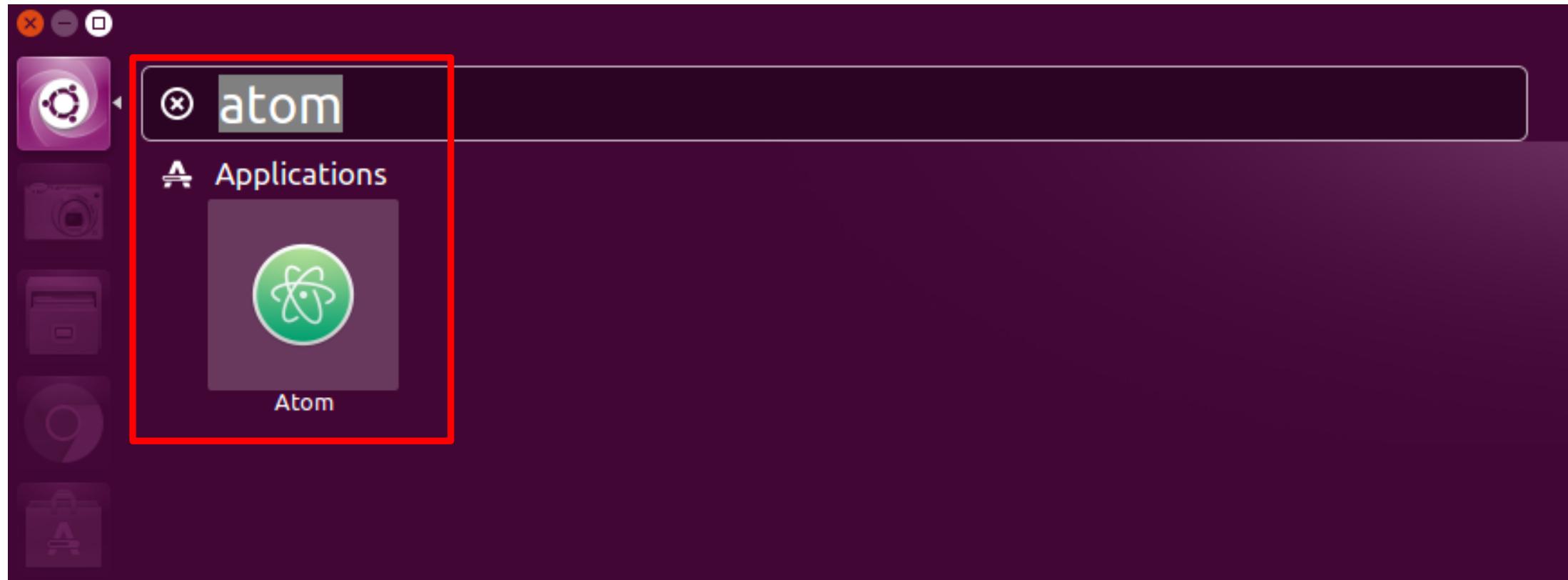
# Text Editor – Atom

## ■ Atom – (<https://atom.io>) – OpenSource

```
instructor@Ubuntu:~/Downloads$ sudo apt-get install -f
Reading package lists... Done
Building dependency tree
Reading state information... Done
Correcting dependencies... Done
The following packages were automatically installed and are no longer required:
  linux-headers-4.8.0-36 linux-headers-4.8.0-36-generic
  linux-image-4.8.0-36-generic linux-image-extra-4.8.0-36-generic snap-confine
Use 'sudo apt autoremove' to remove them.
The following additional packages will be installed:
  git git-man liberror-perl
Suggested packages:
  git-daemon-run | git-daemon-sysvinit git-doc git-el git-email git-gui gitk
  gitweb git-arch git-cvs git-mediawiki git-svn
The following NEW packages will be installed:
  git git-man liberror-perl
0 upgraded, 3 newly installed, 0 to remove and 7 not upgraded.
1 not fully installed or removed.
Need to get 3,918 kB of archives.
After this operation, 25.6 MB of additional disk space will be used.
Do you want to continue? [Y/n] y
```

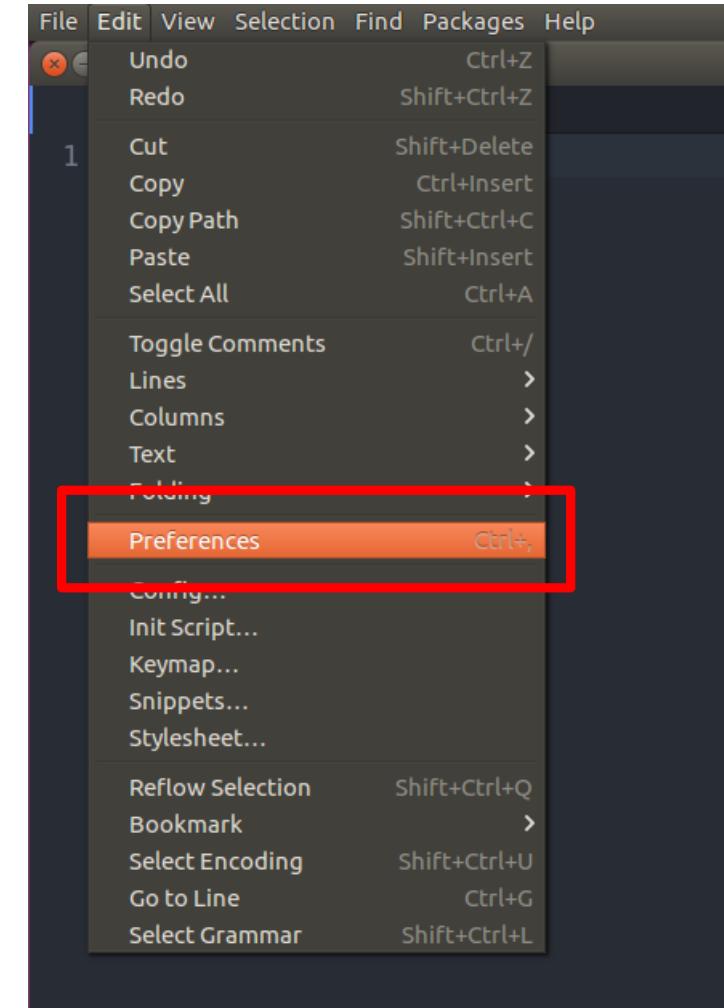
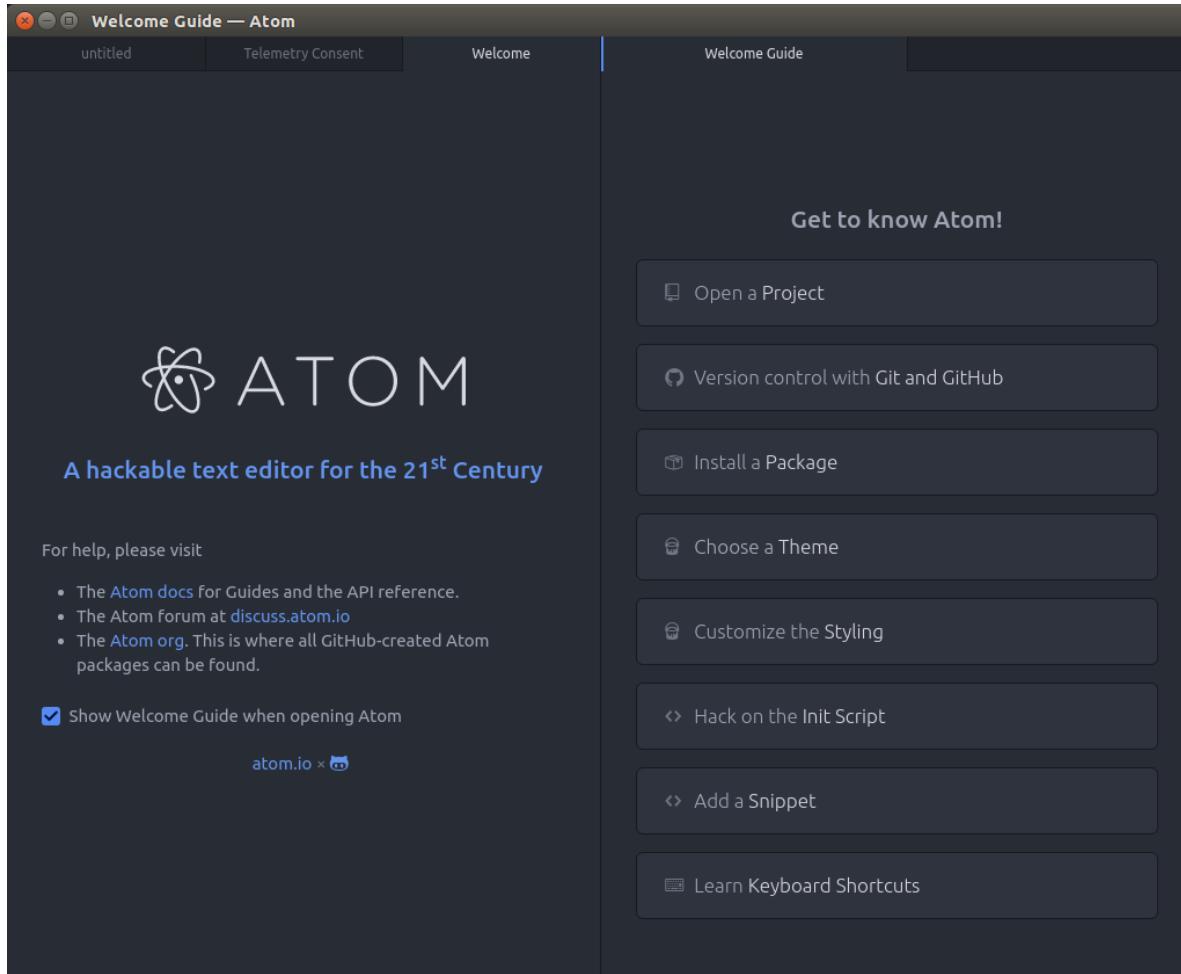
# Text Editor – Atom

- Atom – (<https://atom.io>) – OpenSource



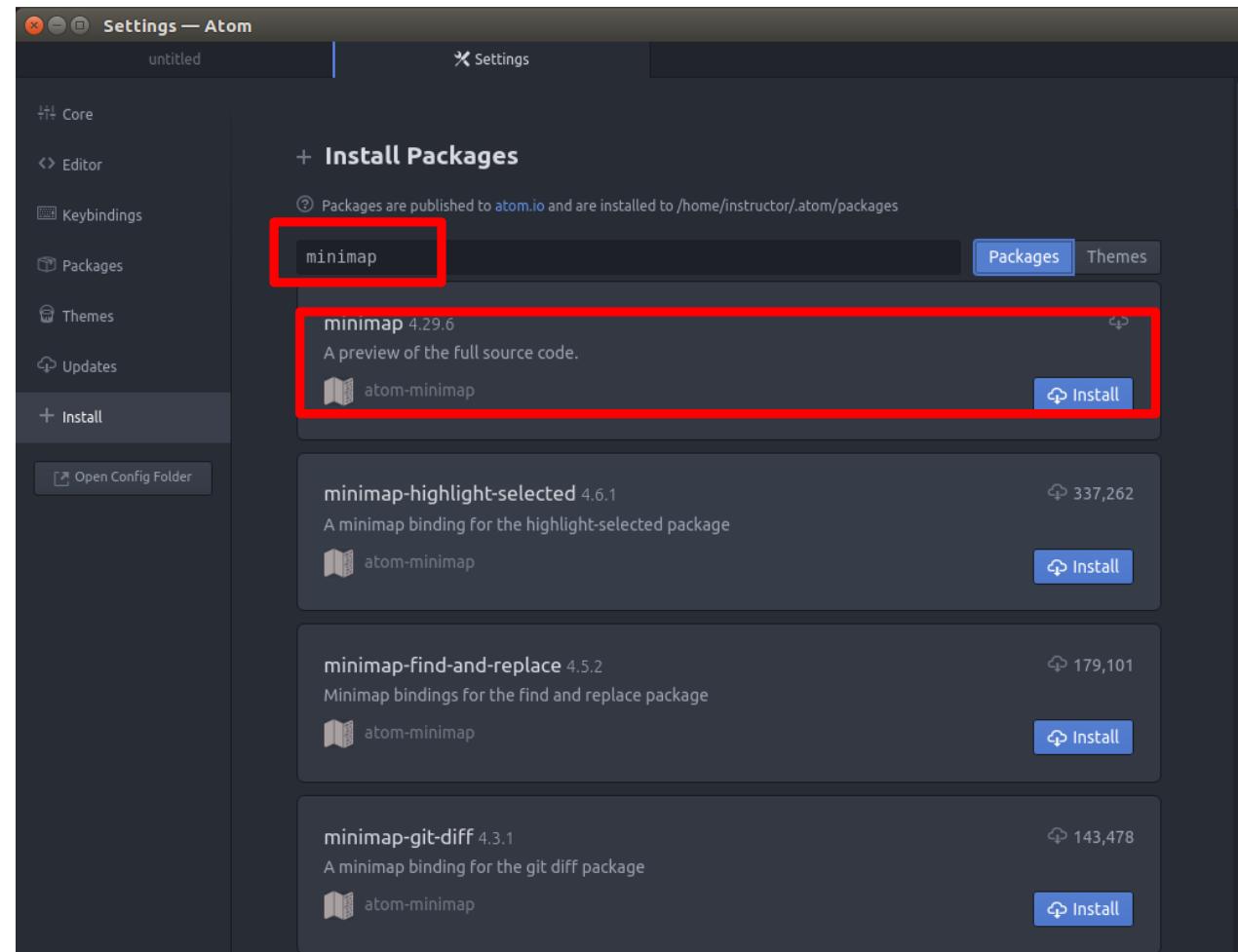
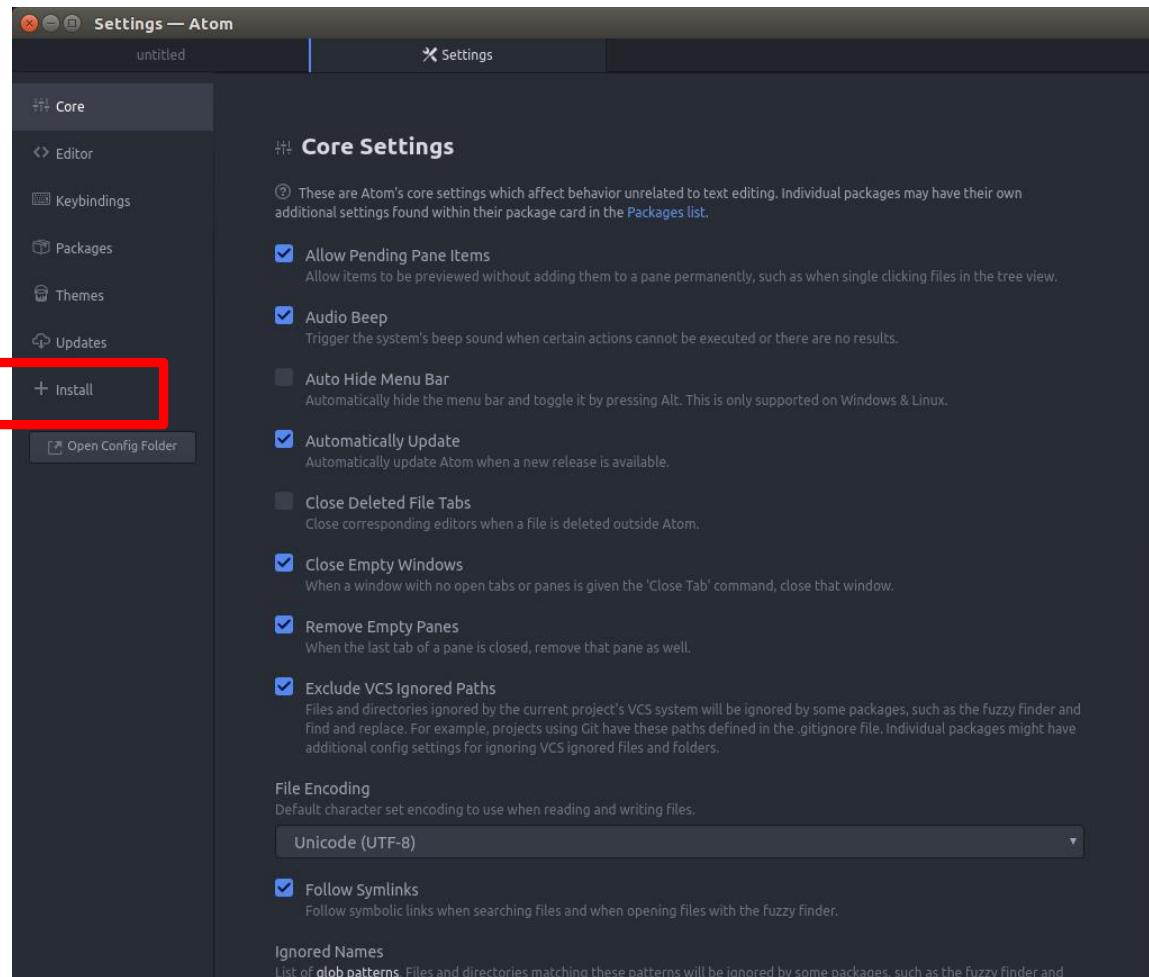
# Text Editor – Atom

## ■ Atom – (<https://atom.io>) – OpenSource



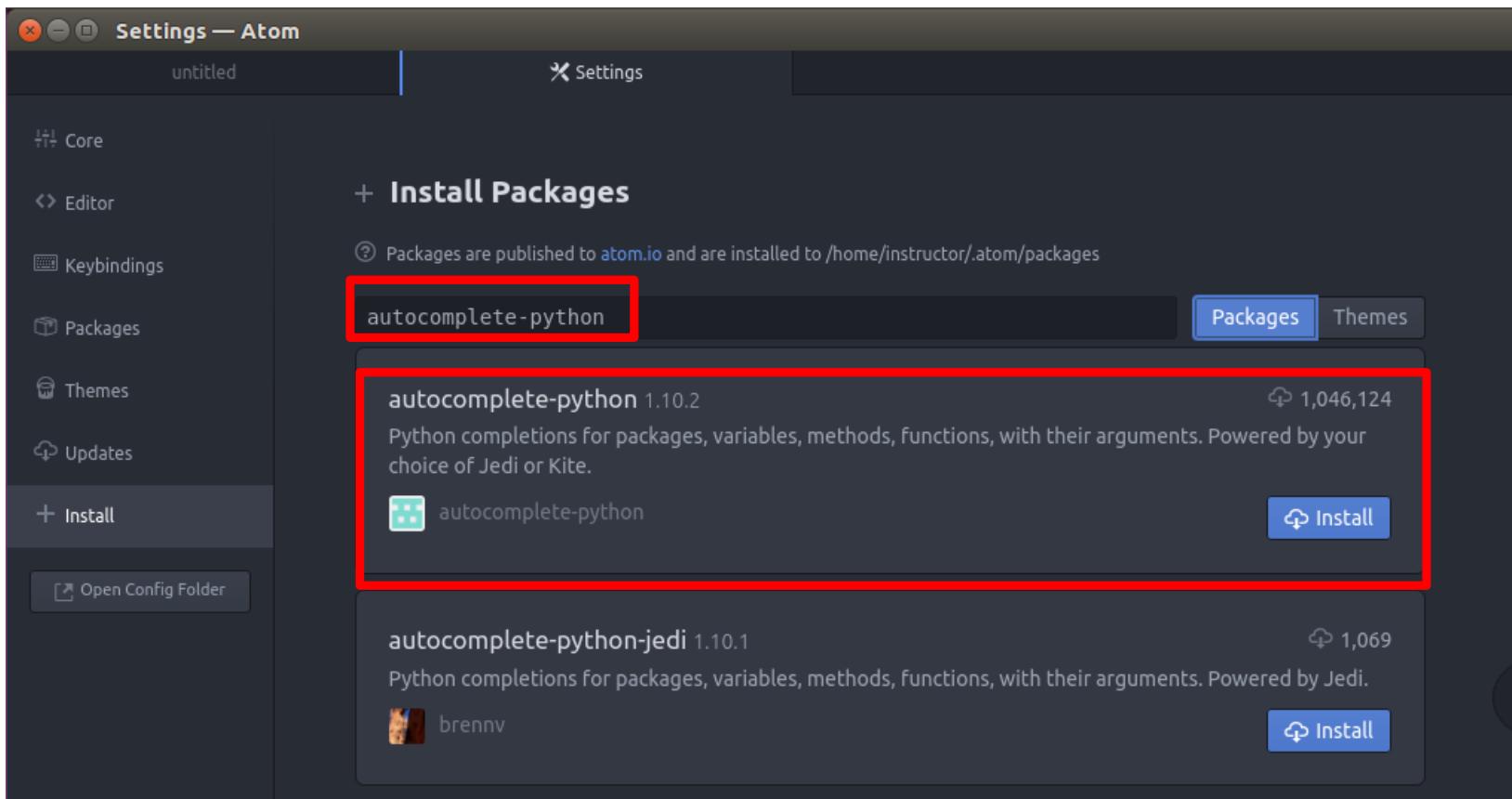
# Text Editor – Atom

## ■ Atom – (<https://atom.io>) – OpenSource



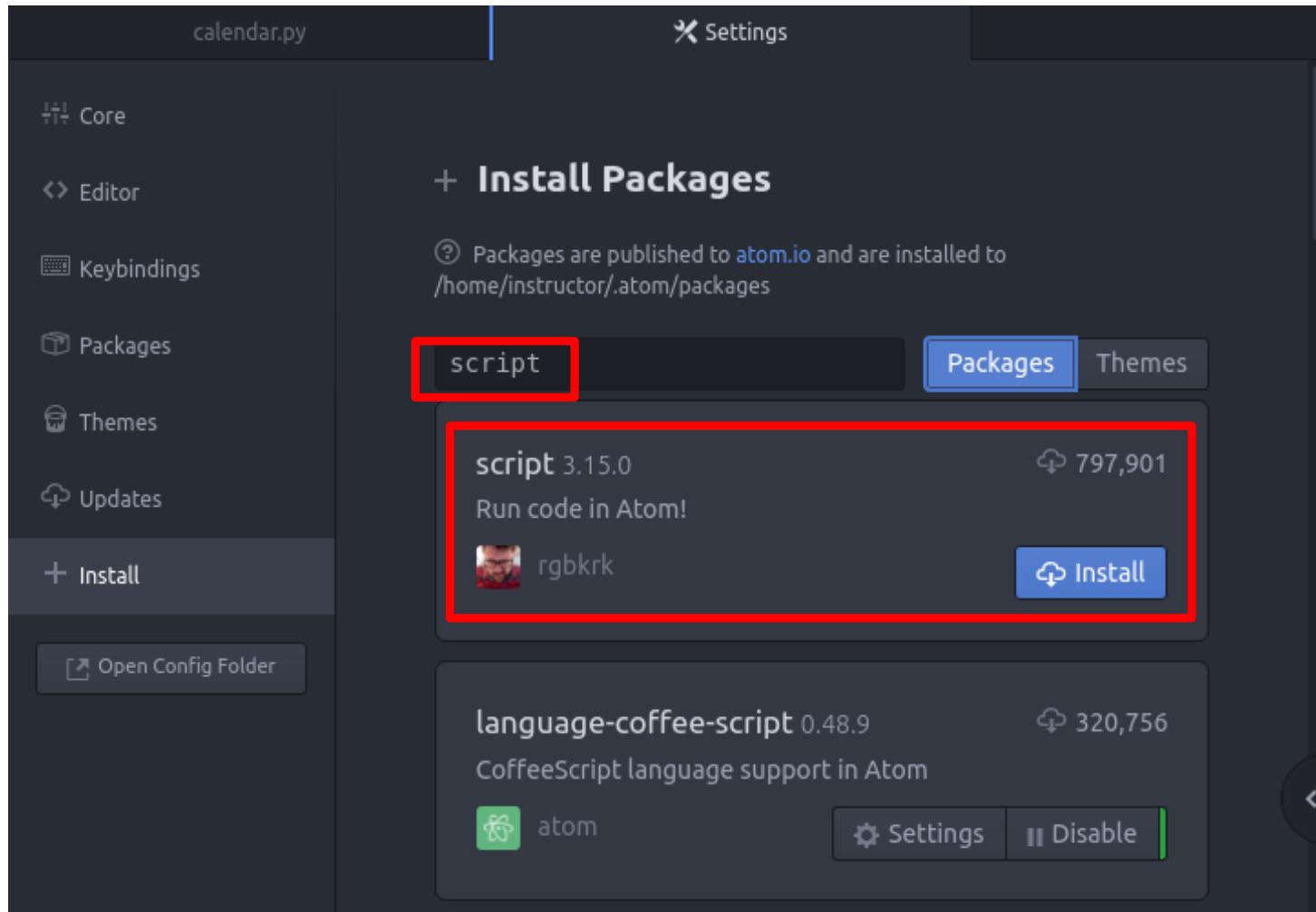
# Text Editor – Atom

## ■ Atom – (<https://atom.io>) – OpenSource



# Text Editor – Atom

## ■ Atom – (<https://atom.io>) – OpenSource



# Python IDEs

# Enthought Canopy

- Enthought Canopy (<https://www.enthought.com/products/canopy/>)
  - Half Freeware

The screenshot shows the Enthought Canopy IDE interface. On the left is a 'File Browser' pane with a 'Recent Files' section containing 'instructor'. The main area has a code editor window titled '\*untitled-1' containing the following Python code:

```
1 print ("Hello, World")
2
```

Below the code editor is an IPython console window titled 'Python' with the following output:

```
Python 2.7.15rc1 |Enthought Canopy| 5.3.0 -- An enhanced Interactive Python.
Type "copyright", "credits" or "license" for more information.

IPython 5.3.0 -- An enhanced Interactive Python.
?          -> Introduction and overview of IPython's features.
%quickref -> Quick reference.
help       -> Python's own help system.
object?    -> Details about 'object', use 'object??' for extra details.

In [1]: %run "c:\users\instructor\appdata\local\temp\tmpipiuljsi.py"
Hello, World

In [2]:
```

The status bar at the bottom shows 'Cursor pos 2: 1' and 'Python 2'.



# Enthought Canopy (Cont.)

[Secure | https://www.enthought.com/products/canopy/](https://www.enthought.com/products/canopy/)

 ENTHOUGHT  
SCIENTIFIC COMPUTING SOLUTIONS

PRODUCTS TRAINING CONSULTING COMPANY CON

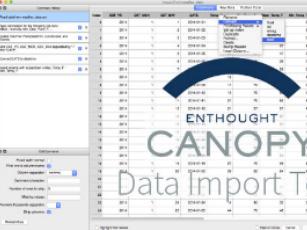
## Enthought Canopy

Proven Scientific Python Distribution Plus Integrated Analysis Environment

Enthought Canopy is a comprehensive [Python analysis environment](#) that provides [easy installation](#) of over 450 core scientific analytic and Python packages, creating a robust platform you can explore, develop, and visualize on. In addition to its [pre-built, tested Python distribution](#), Enthought Canopy has valuable tools for iterative data analysis, visualization and application development including:

- One-Click Python Package Installation with a Graphical Package Manager
- Data Import Tool ([NEW!](#)) for importing columnar text files into Pandas DataFrames and creating repeatable data munging scripts
- Code Editor with Jupyter/IPython Notebook Support
- Interactive Graphical Python Code Debugger and Variable Browser
- Integrated IPython Prompt
- Python for Excel with PyXLL ([add-on](#))
- Integration with the Intel MKL and Microsoft Python Tools for Visual Studio

[Get Canopy >](#)



[Secure | https://www.enthought.com/canopy-subscriptions/](https://www.enthought.com/canopy-subscriptions/)

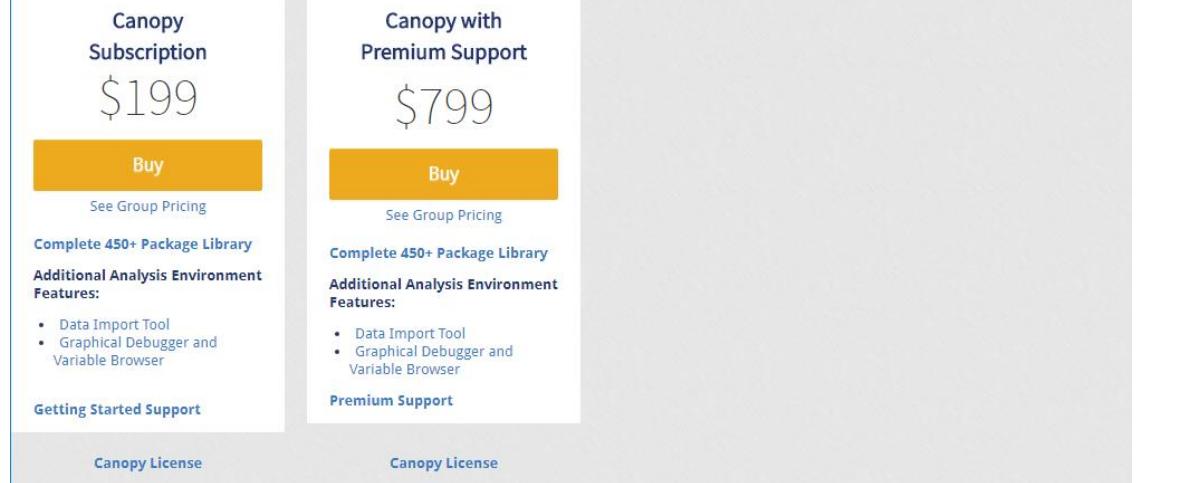
## Download and Subscription Options

Need help choosing the best package for you or your team's needs? [Contact us.](#) (See academic subscriptions [here](#).)

 CANOPY

**Get Started with Canopy Express - FREE**  
450+ Python Packages PLUS Interactive Analysis Environment

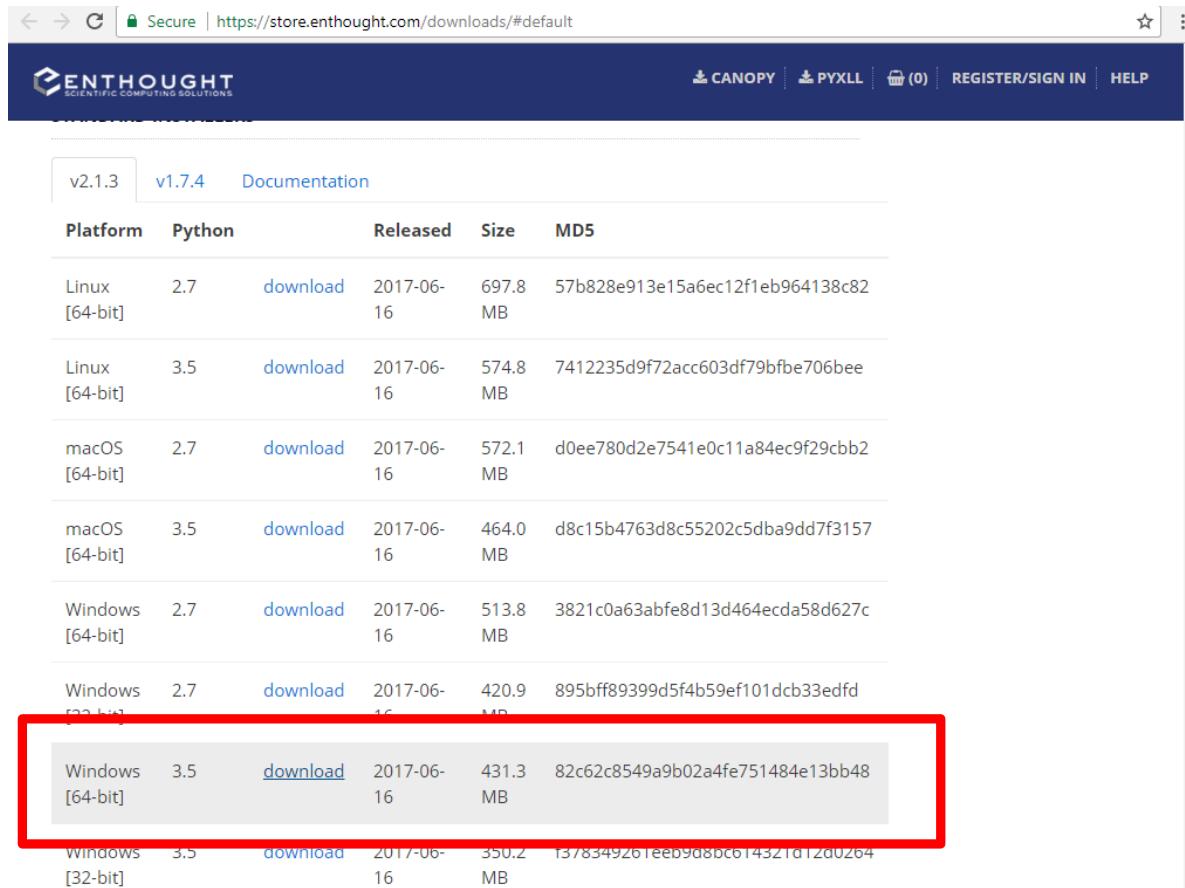
[Download](#)



Subscription Type	Price	Features
Canopy Subscription	\$199	<a href="#">Buy</a> <a href="#">See Group Pricing</a> Complete 450+ Package Library Additional Analysis Environment Features: <ul style="list-style-type: none"><li>• Data Import Tool</li><li>• Graphical Debugger and Variable Browser</li></ul>
Canopy with Premium Support	\$799	<a href="#">Buy</a> <a href="#">See Group Pricing</a> Complete 450+ Package Library Additional Analysis Environment Features: <ul style="list-style-type: none"><li>• Data Import Tool</li><li>• Graphical Debugger and Variable Browser</li></ul> <a href="#">Premium Support</a>

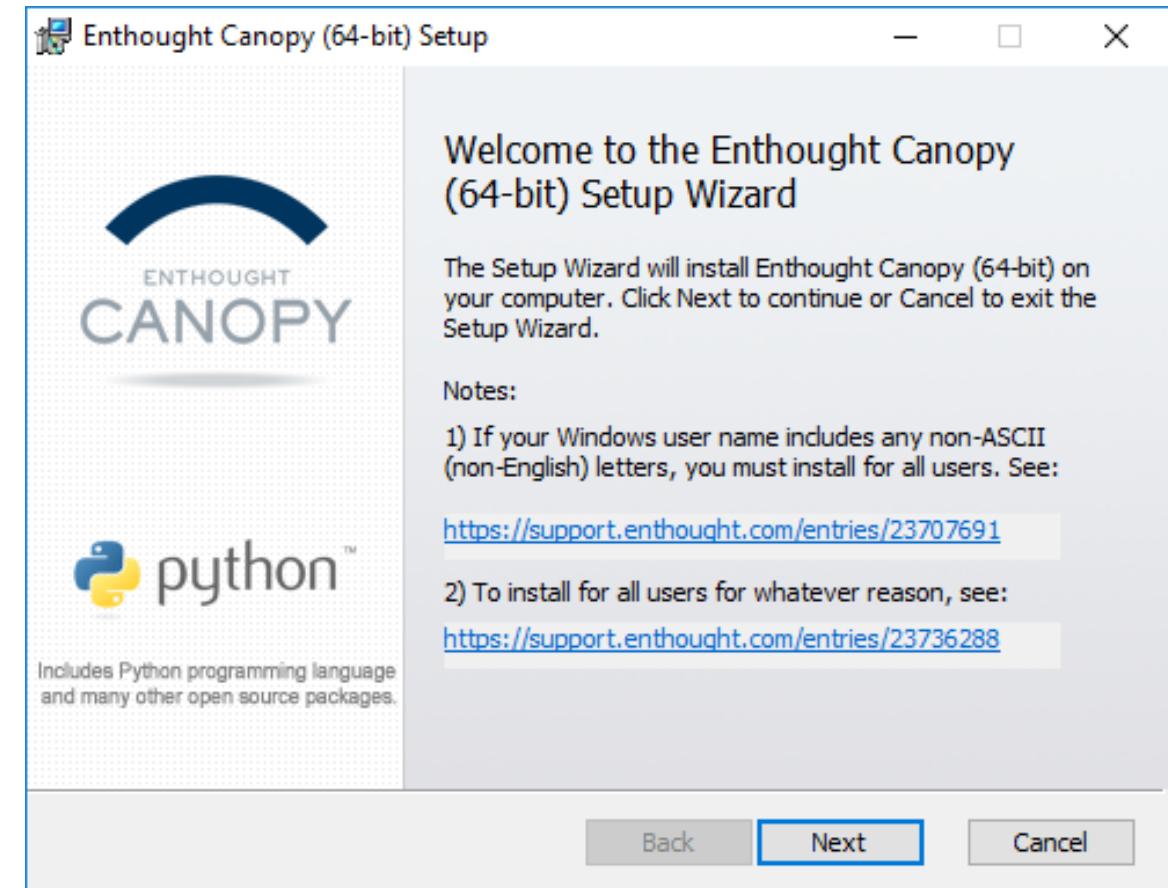
[Canopy License](#)    [Canopy License](#)

# Enthought Canopy (Cont.)

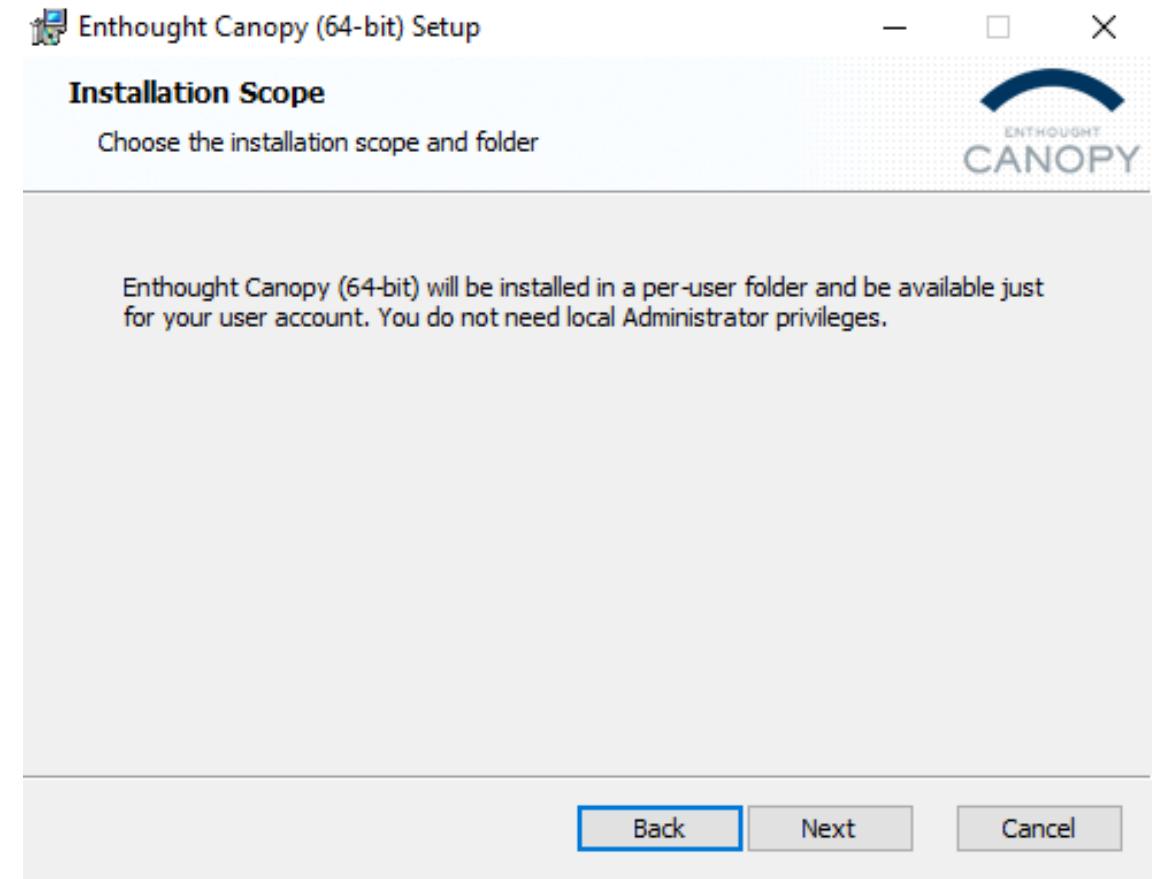
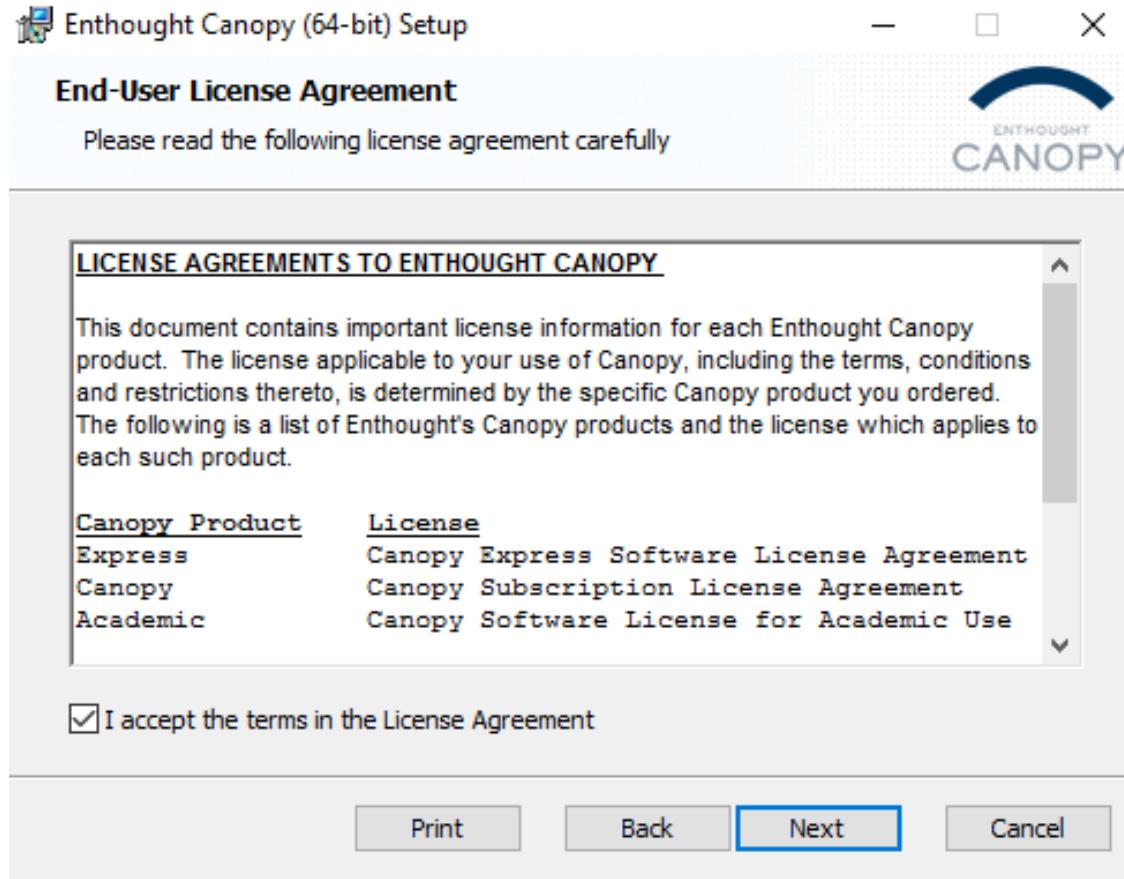


The screenshot shows the Enthought Canopy download page at <https://store.enthought.com/downloads/#default>. The page displays a table of available Python distributions:

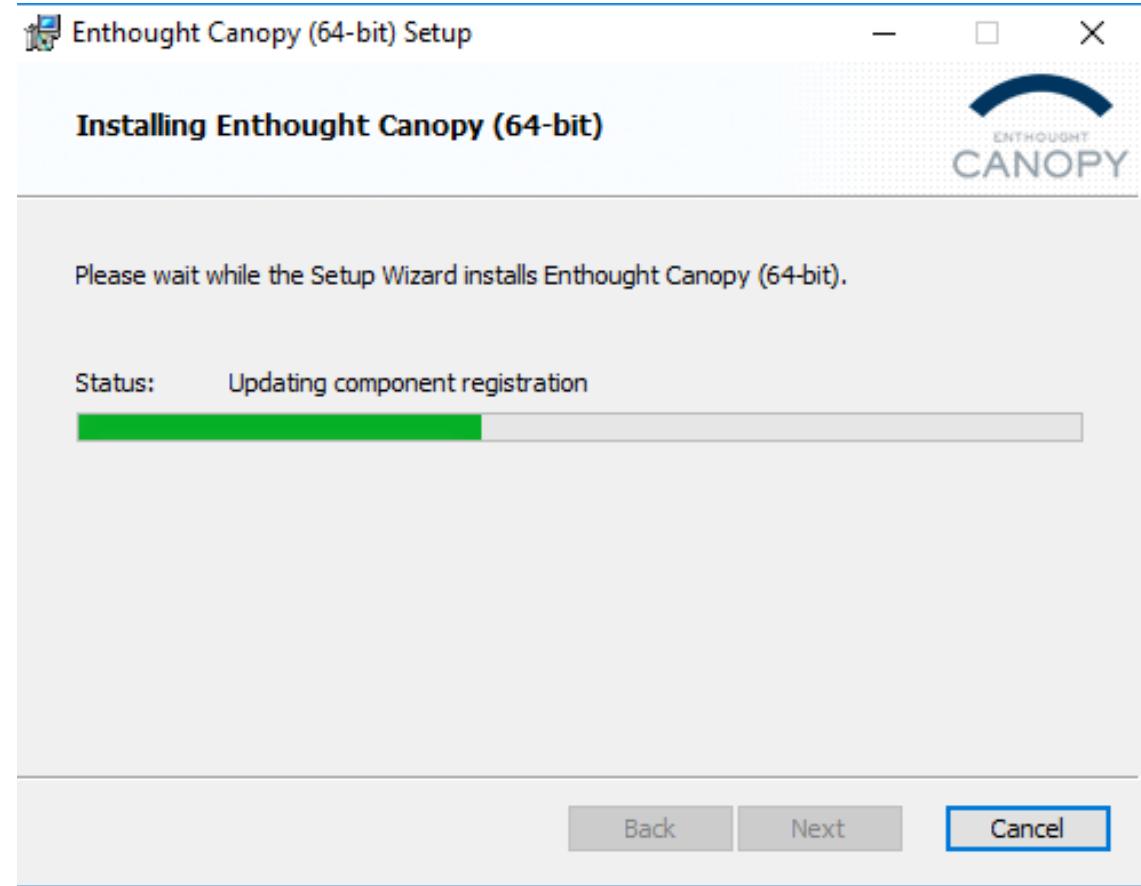
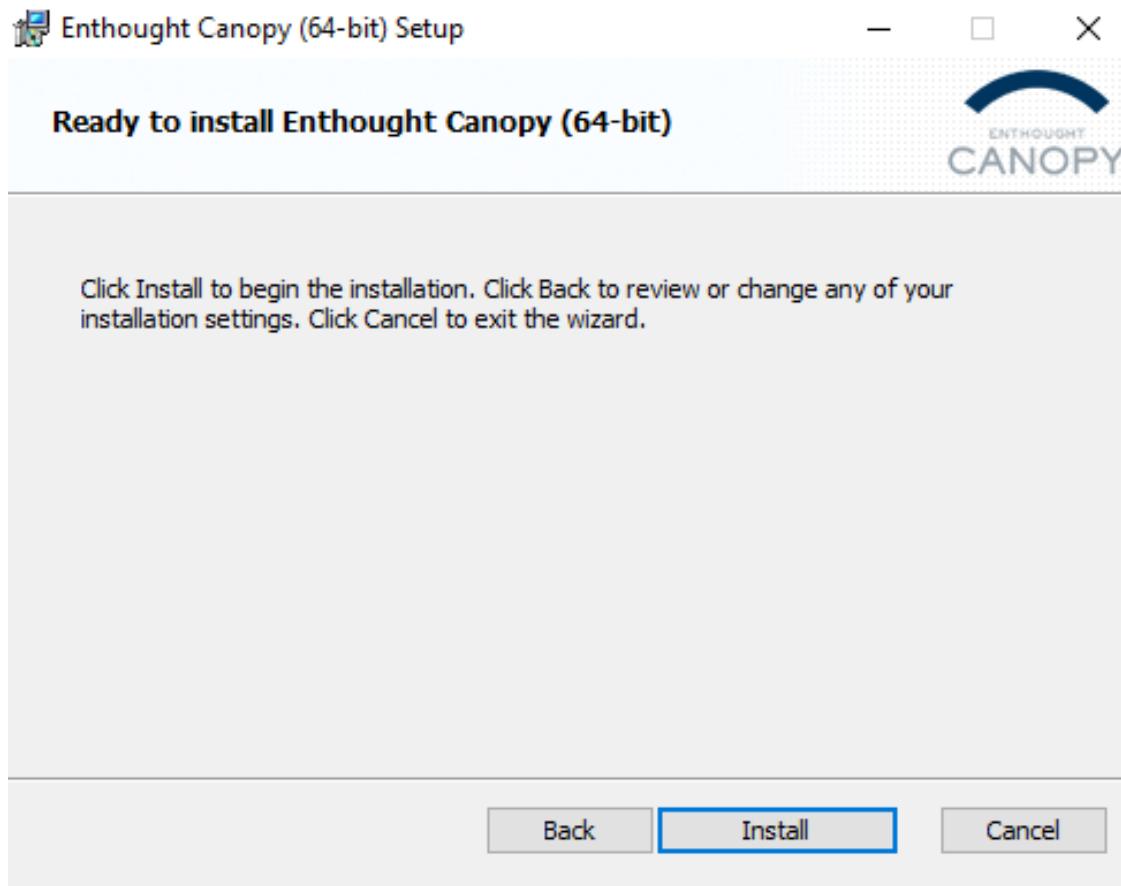
Platform	Python	Released	Size	MD5
Linux [64-bit]	2.7	<a href="#">download</a>	2017-06-16	697.8 MB
Linux [64-bit]	3.5	<a href="#">download</a>	2017-06-16	574.8 MB
macOS [64-bit]	2.7	<a href="#">download</a>	2017-06-16	572.1 MB
macOS [64-bit]	3.5	<a href="#">download</a>	2017-06-16	464.0 MB
Windows [64-bit]	2.7	<a href="#">download</a>	2017-06-16	513.8 MB
Windows [32-bit]	2.7	<a href="#">download</a>	2017-06-16	420.9 MB
Windows [64-bit]	3.5	<a href="#">download</a>	2017-06-16	431.3 MB
Windows [32-bit]	3.5	<a href="#">download</a>	2017-06-16	550.2 MB



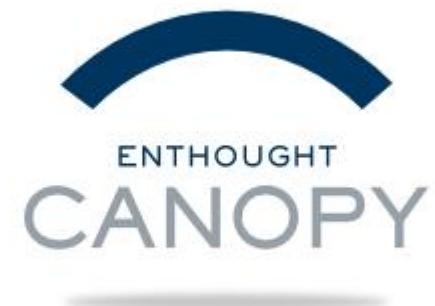
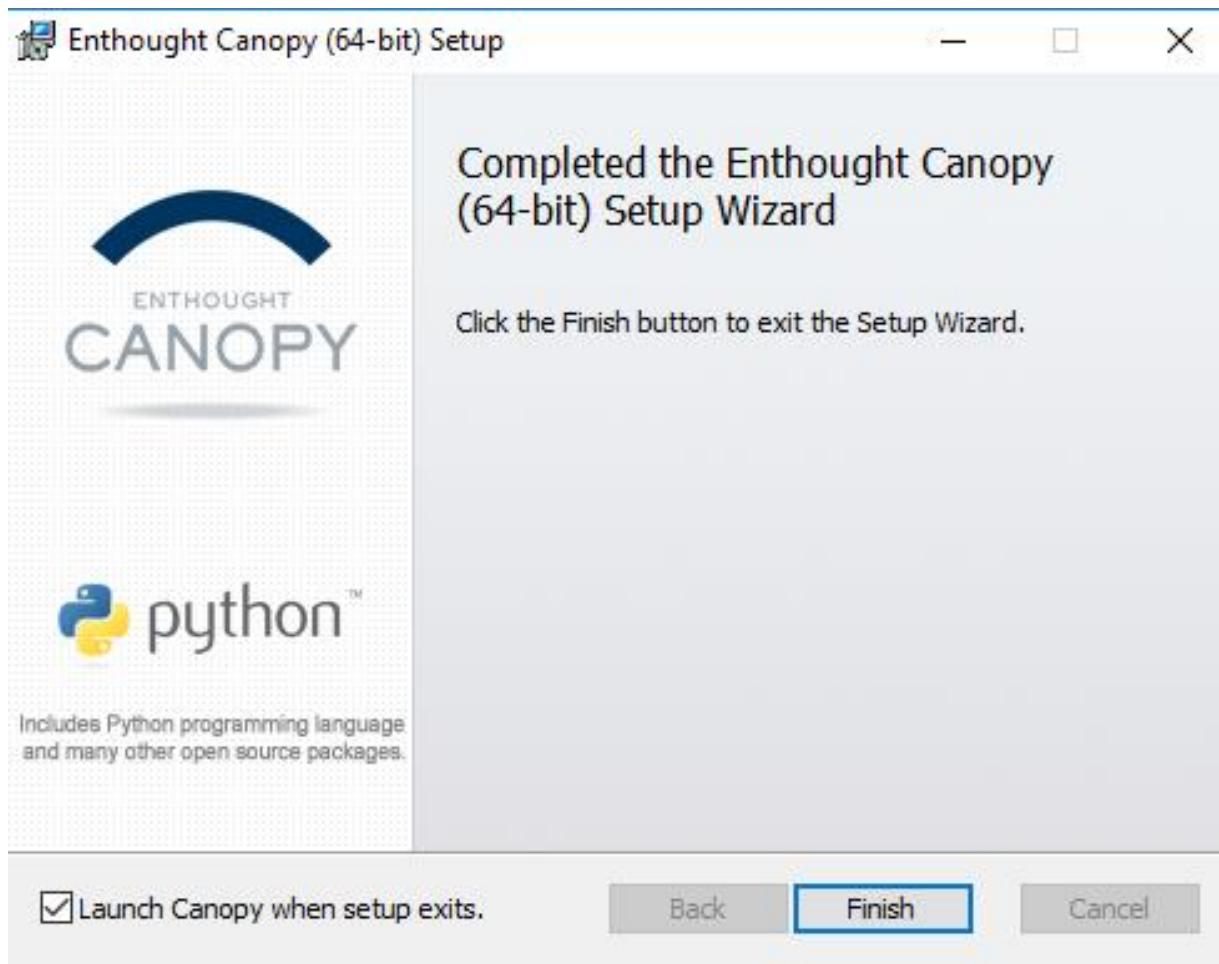
# Enthought Canopy (Cont.)



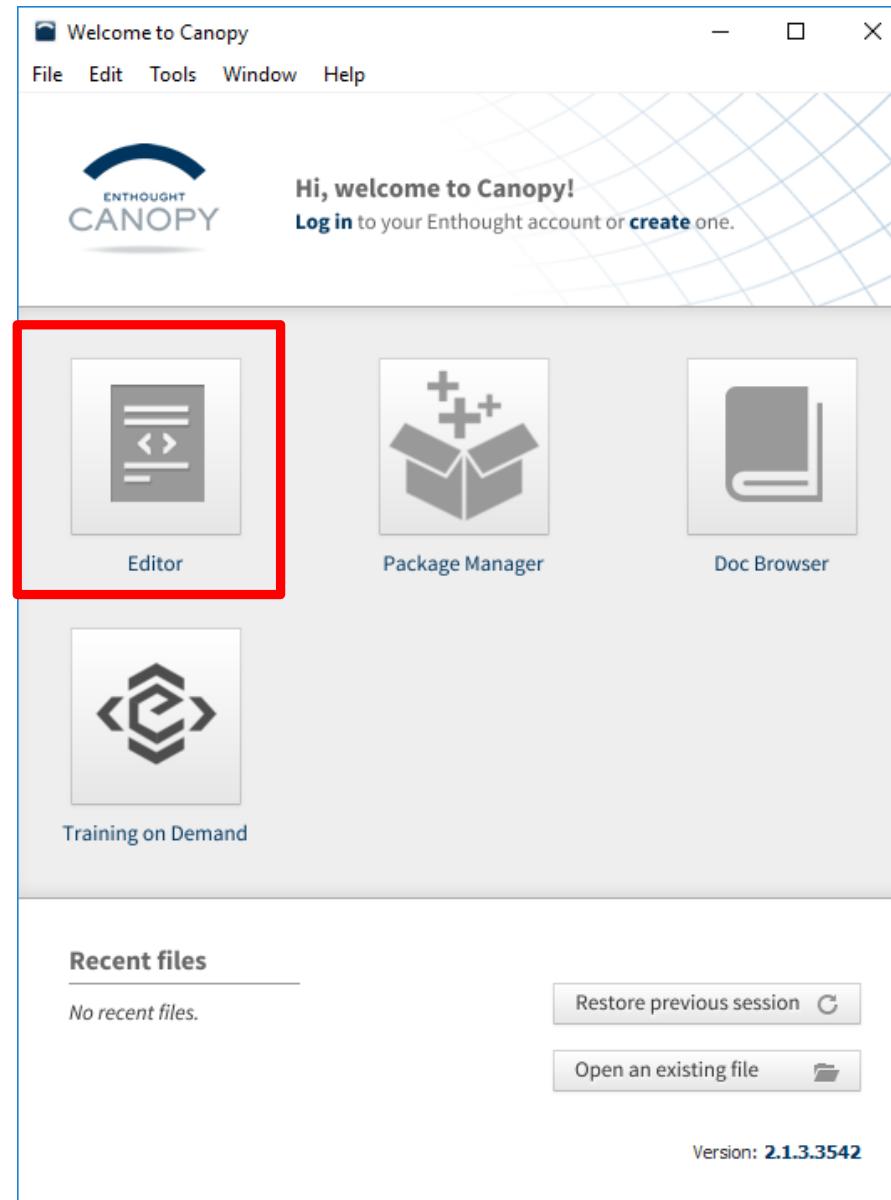
# Enthought Canopy (Cont.)



# Enthought Canopy (Cont.)



# Enthought Canopy (Cont.)



# Eclipse & PyDev

- Eclipse (<http://www.eclipse.org/>) – Freeware

The screenshot shows the Eclipse PyDev interface. In the top left, the title bar reads "Python Home - 0823/hello.py - Eclipse". The menu bar includes File, Edit, Refactoring, Source, Navigate, Search, Project, Pydev, Run, Window, Help. The toolbar has various icons for file operations. The left sidebar shows a project tree with a folder "0823" containing "hello.py" and "python (C:\Program Files\Python36)". The main editor window displays the following Python code:

```
1 import sys
2 print(sys.version)
3
4 print ("Hello, World")
5
6 print (sys.version_info)
```

Below the editor is a "Console" tab showing the output of running the script:

```
<terminated> hello.py [C:\Program Files\Python36\python.exe]
3.6.2 (v3.6.2:5fd33b5, Jul  8 2017, 04:57:36) [MSC v.1900 64 bit (AMD64)]
Hello, World
sys.version_info(major=3, minor=6, micro=2, releaselevel='final', serial=0)
```

The status bar at the bottom indicates "Writable" and "Insert" modes, with a character count of "7:1".



# Eclipse & PyDev (Cont.)

## 1. Google Search for **jre download 1.8**



# Eclipse & PyDev (Cont.)

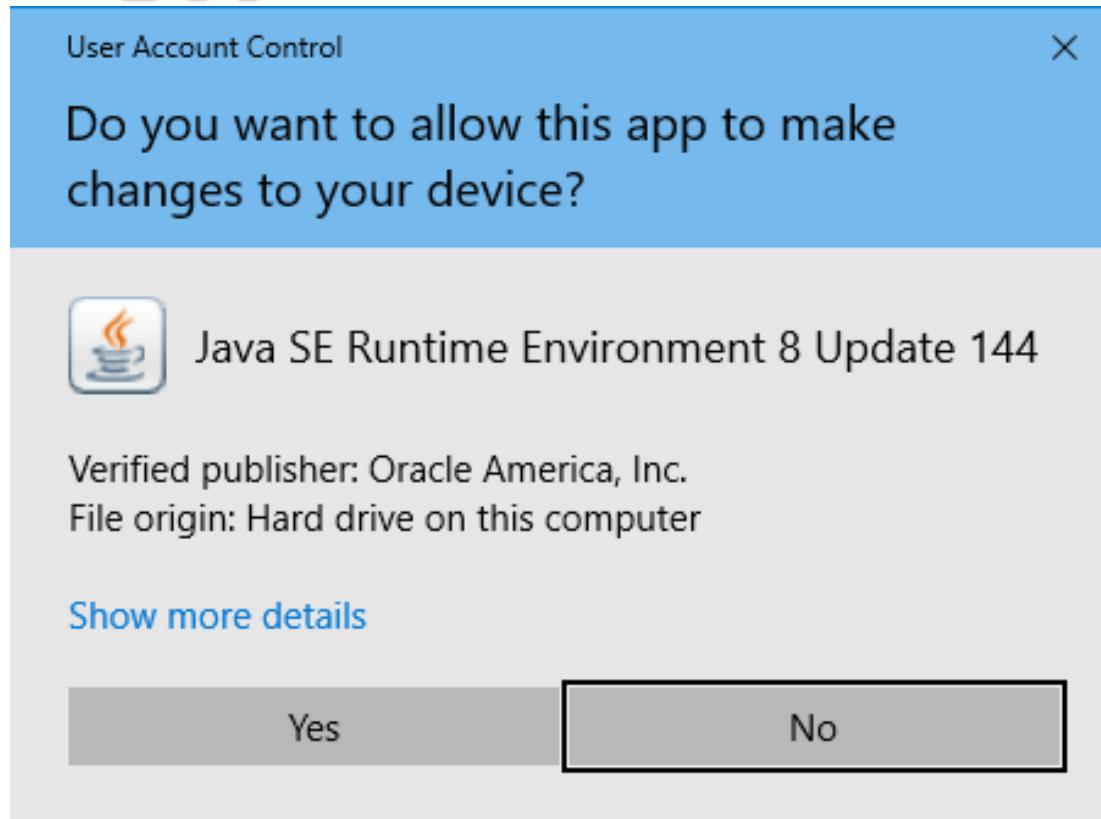
## 2. Click to Windows x64 Offline

The screenshot shows a web browser displaying the Oracle Java SE Runtime Environment 8 Downloads page. The URL in the address bar is [www.oracle.com/technetwork/java/javase/downloads/jre8-downloads-2133155.html](http://www.oracle.com/technetwork/java/javase/downloads/jre8-downloads-2133155.html). The page title is "Java SE Runtime Environment 8 Downloads". On the left, there's a sidebar with links for Java SE, Java EE, Java ME, Java SE Support, Java SE Advanced & Suite, Java Embedded, Java DB, Web Tier, Java Card, Java TV, New to Java, Community, and Java Magazine. The main content area has tabs for Overview, Downloads (which is selected), Documentation, Community, Technologies, and Training. Below these tabs, a section titled "Java SE Runtime Environment 8u144" contains a note about accepting the Oracle Binary Code License Agreement. A table lists various download options, with the "Windows x64 Offline" row highlighted by a red box. The table columns are Product / File Description, File Size, and Download.

Product / File Description	File Size	Download
Linux x86	59.13 MB	<a href="#">jre-8u144-linux-i586.rpm</a>
Linux x86	75.01 MB	<a href="#">jre-8u144-linux-i586.tar.gz</a>
Linux x64	56.48 MB	<a href="#">jre-8u144-linux-x64.rpm</a>
Linux x64	72.41 MB	<a href="#">jre-8u144-linux-x64.tar.gz</a>
Mac OS X	63.94 MB	<a href="#">jre-8u144-macosx-x64.dmg</a>
Mac OS X	55.56 MB	<a href="#">jre-8u144-macosx-x64.tar.gz</a>
Solaris SPARC 64-bit	52.12 MB	<a href="#">jre-8u144-solaris-sparcv9.tar.gz</a>
Solaris x64	49.95 MB	<a href="#">jre-8u144-solaris-x64.tar.gz</a>
Windows x86 Online	0.7 MB	<a href="#">jre-8u144-windows-i586-iftw.exe</a>
Windows x86 Offline	54.57 MB	<a href="#">jre-8u144-windows-i586.exe</a>
Windows x86	60.2 MB	<a href="#">jre-8u144-windows-i586.tar.gz</a>
Windows x64 Offline	62.34 MB	<a href="#">jre-8u144-windows-x64.exe</a>
Windows x64	65.55 MB	<a href="#">jre-8u144-windows-x64.tar.gz</a>

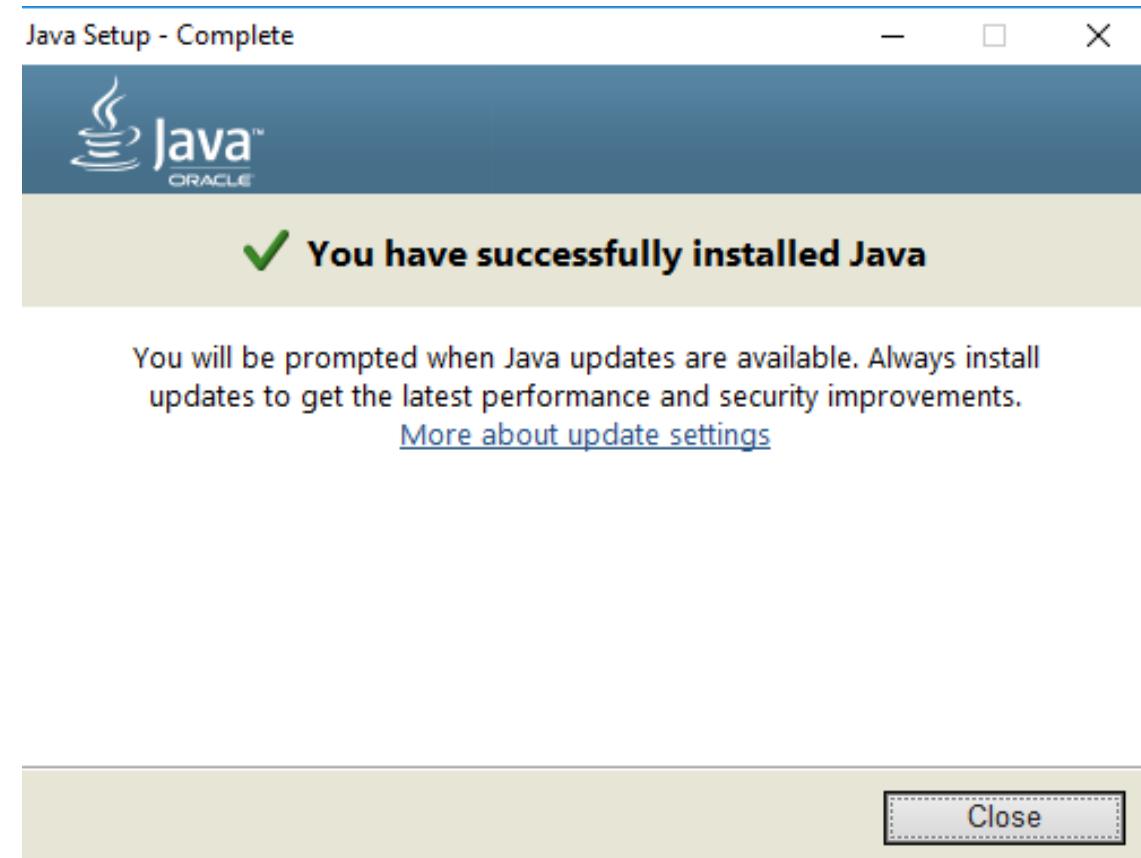
# Eclipse & PyDev (Cont.)

## 3. Install Java SE Runtime Environment 8 Update 144



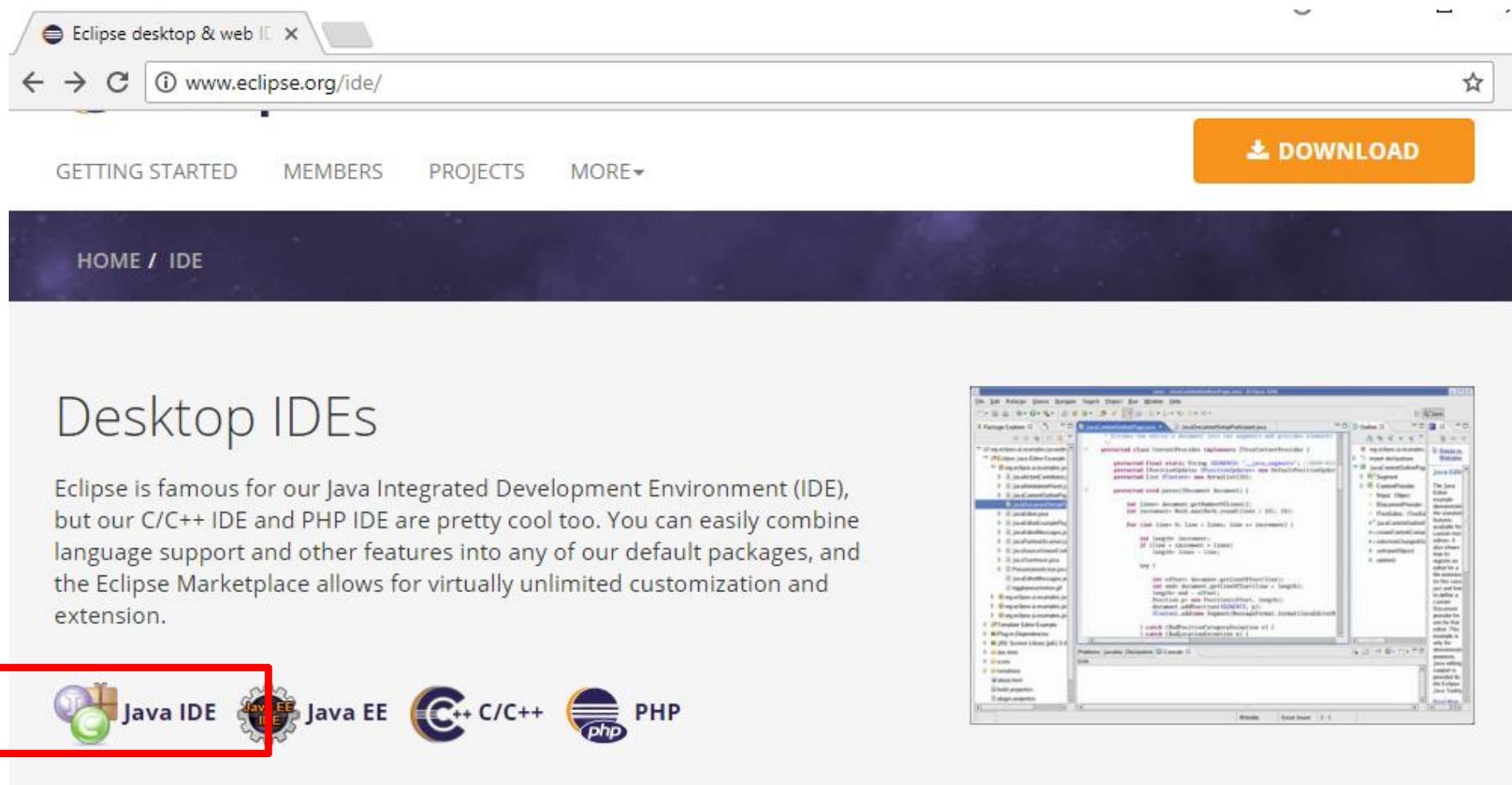
# Eclipse & PyDev (Cont.)

## 3. Install Java SE Runtime Environment 8 Update 144 (Cont.)



# Eclipse & PyDev (Cont.)

## 4. Visit <http://www.eclipse.org/ide>



The screenshot shows the official Eclipse website at [www.eclipse.org/ide](http://www.eclipse.org/ide). The top navigation bar includes links for "GETTING STARTED", "MEMBERS", "PROJECTS", and "MORE". A prominent orange "DOWNLOAD" button is on the right. Below the navigation, a large banner features the text "HOME / IDE" and "Desktop IDEs". The main content area discusses the Java IDE, mentioning support for Java, C/C++, and PHP, and highlights the Eclipse Marketplace for customization. At the bottom, there are icons for Java IDE (with a red border), Java EE, C/C++ (with a blue gear icon), and PHP.

Java IDE

Java EE

C/C++

PHP

# Eclipse & PyDev (Cont.)

## 5. Downloads Eclipse for Windows 64-bit

The screenshot shows the Eclipse IDE for Java Developers download page. At the top, there's a browser header with the URL [www.eclipse.org/downloads/packages/eclipse-ide-java-developers/oxygenr](http://www.eclipse.org/downloads/packages/eclipse-ide-java-developers/oxygenr). Below the header, the Eclipse logo is displayed. The main navigation menu includes links for GETTING STARTED, MEMBERS, PROJECTS, and MORE. A Google Custom Search bar is present. A prominent orange "DOWNLOAD" button is located on the right. The page title is "Eclipse IDE for Java Developers". The breadcrumb navigation shows: HOME / DOWNLOADS / PACKAGES / ECLIPSE IDE FOR JAVA DEVELOPERS. On the left, a sidebar titled "RELEASES" lists various Eclipse packages: Oxygen Packages, Neon Packages, Mars Packages, Luna Packages, Kepler Packages, Juno Packages, Indigo Packages, Helios Packages, Galileo Packages, Ganymede Packages, and All Releases. The main content area features a "Package Description" section with a brief overview of the essential tools for Java developers. It also lists "This package includes:" with a bulleted list of features: Git integration for Eclipse, Eclipse Java Development Tools, Maven Integration for Eclipse, Mylyn Task List, Code Recommenders Tools for Java Developers, and Eclipse XML Editors and Tools. A "Download Links" section provides links for Windows 32-bit, Windows 64-bit (which is highlighted with a red box), Mac OS X (Cocoa) 64-bit, bit, Linux 32-bit, and Linux 64-bit. Below this, it says "Downloaded 327,089 Times" and has a "Checksums..." link. At the bottom, there's a "Detailed features list" link.

# Eclipse & PyDev (Cont.)

## 5. Downloads Eclipse for Windows 64-bit (Cont.)

The screenshot shows a web browser displaying the Eclipse Downloads page at [www.eclipse.org/downloads/download.php?file=/technology/epp/downloads/release/oxygen/R/eclipse-java-oxygen-R-win32-x86\\_64.zip](http://www.eclipse.org/downloads/download.php?file=/technology/epp/downloads/release/oxygen/R/eclipse-java-oxygen-R-win32-x86_64.zip). The page features the Eclipse logo and navigation links for Getting Started, Members, Projects, and More. A banner at the top reads "HOME / DOWNLOADS / ECLIPSE DOWNLOADS - SELECT A MIRROR". Below the banner, a note states: "All downloads are provided under the terms and conditions of the [Eclipse Foundation Software User Agreement](#) unless otherwise specified." A large orange "DOWNLOAD" button is prominently displayed. To the right, there is a sidebar for "yatta" with options like "TEAM SETTINGS", "PLUGINS", "PROJECTS", "UPDATE SITES", "WORKING SETS", and "REPOSITORIES", along with a "DOWNLOAD LAUNCHER" button.

Eclipse downloads - Select a mirror

www.eclipse.org/downloads/download.php?file=/technology/epp/downloads/release/oxygen/R/eclipse-java-oxygen-R-win32-x86\_64...

Create account Log in

Google Custom Search

eclipse

GETTING STARTED MEMBERS PROJECTS MORE

HOME / DOWNLOADS / ECLIPSE DOWNLOADS - SELECT A MIRROR

All downloads are provided under the terms and conditions of the [Eclipse Foundation Software User Agreement](#) unless otherwise specified.

**DOWNLOAD**

Download from: Japan - Japan Advanced Institute of Science and Technology (<http://>)

File: **eclipse-java-oxygen-R-win32-x86\_64.zip** [SHA-512](#)

>> Select Another Mirror

yatta INSTALL, LAUNCH, AND SHARE ECLIPSE

TEAM SETTINGS PLUGINS PROJECTS

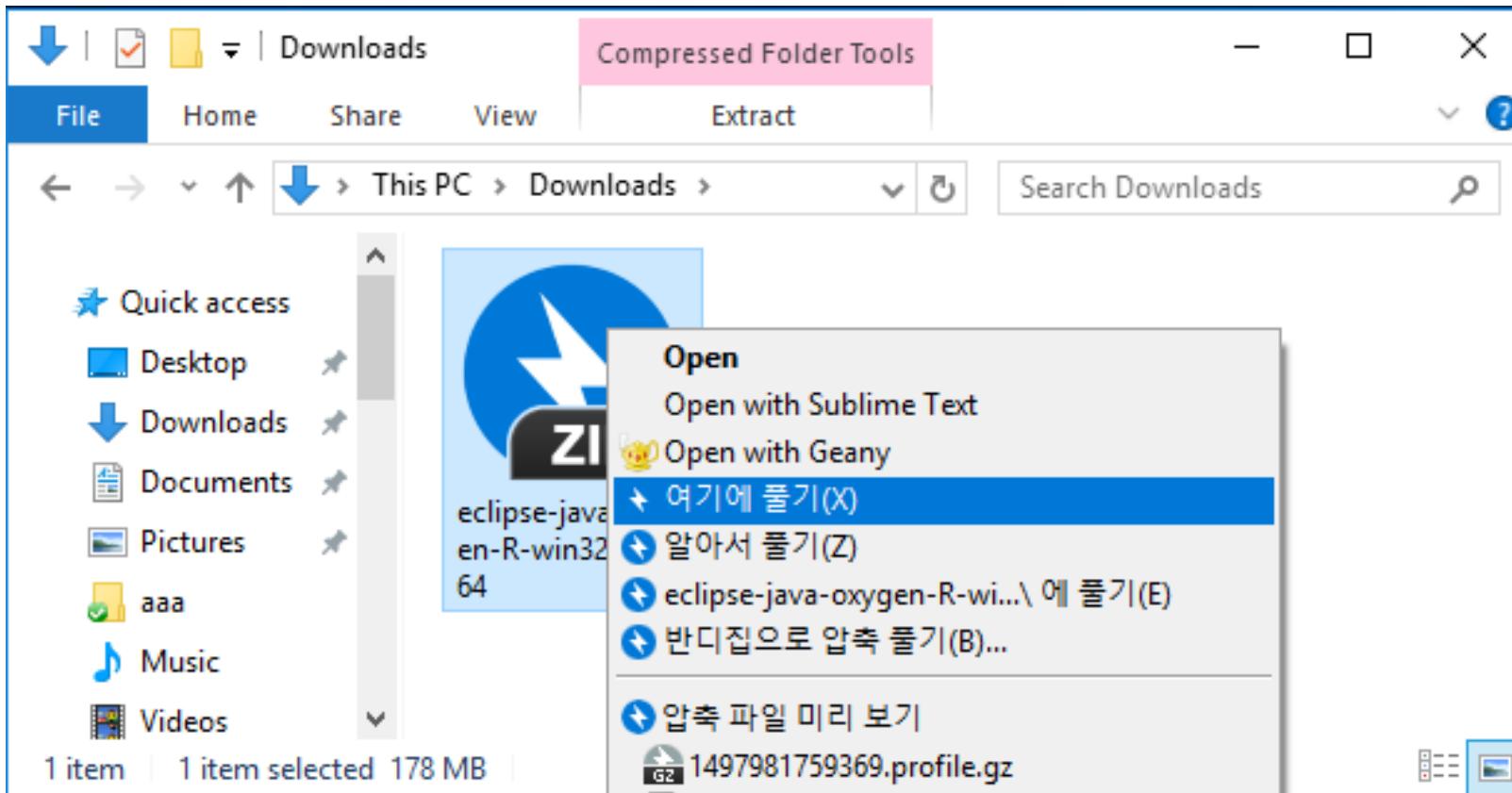
UPDATE SITES WORKING SETS REPOSITORIES

**DOWNLOAD LAUNCHER**

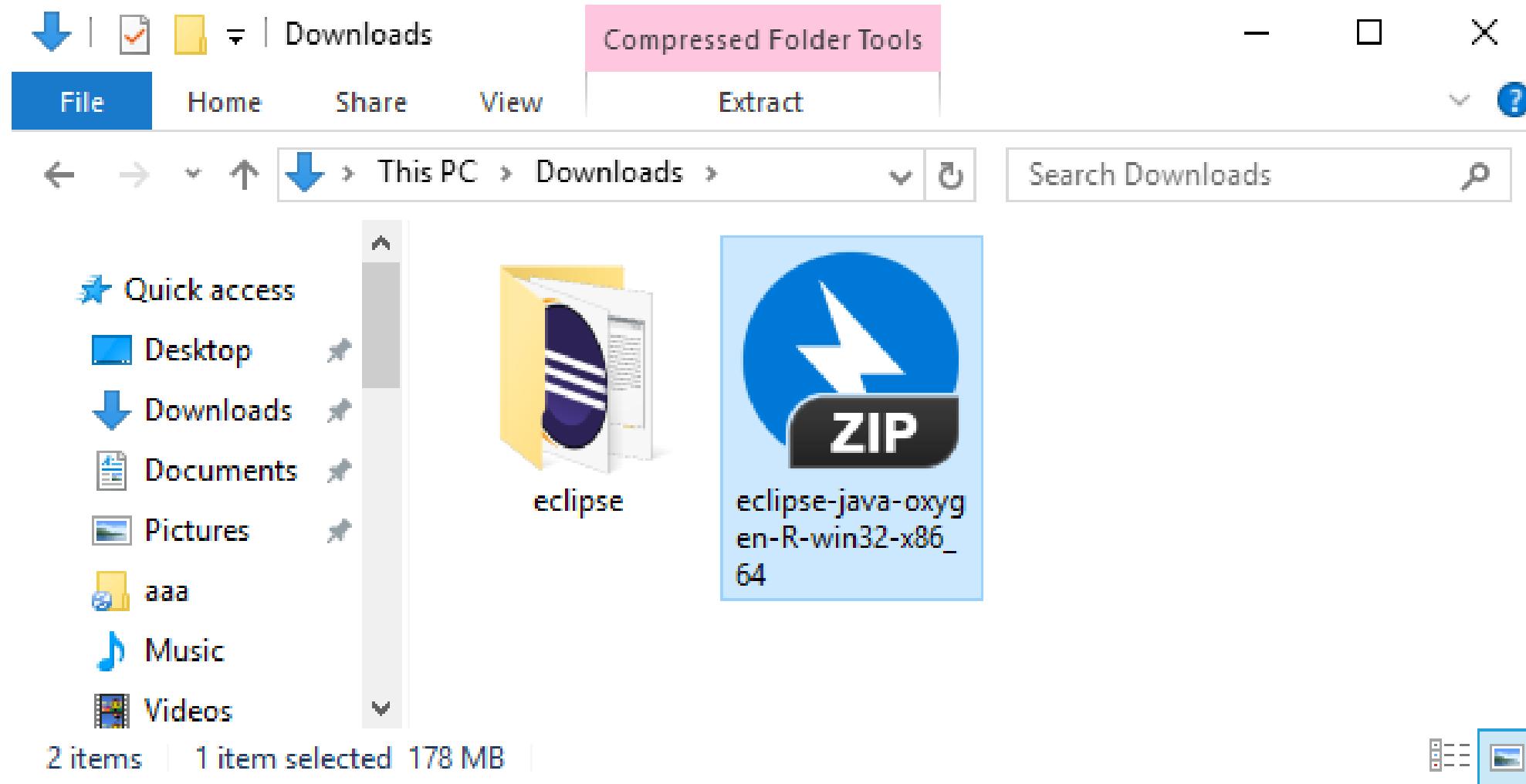
OTHER OPTIONS FOR

# Eclipse & PyDev (Cont.)

## 6. Uncompress **eclipse-java-\*\*.zip**

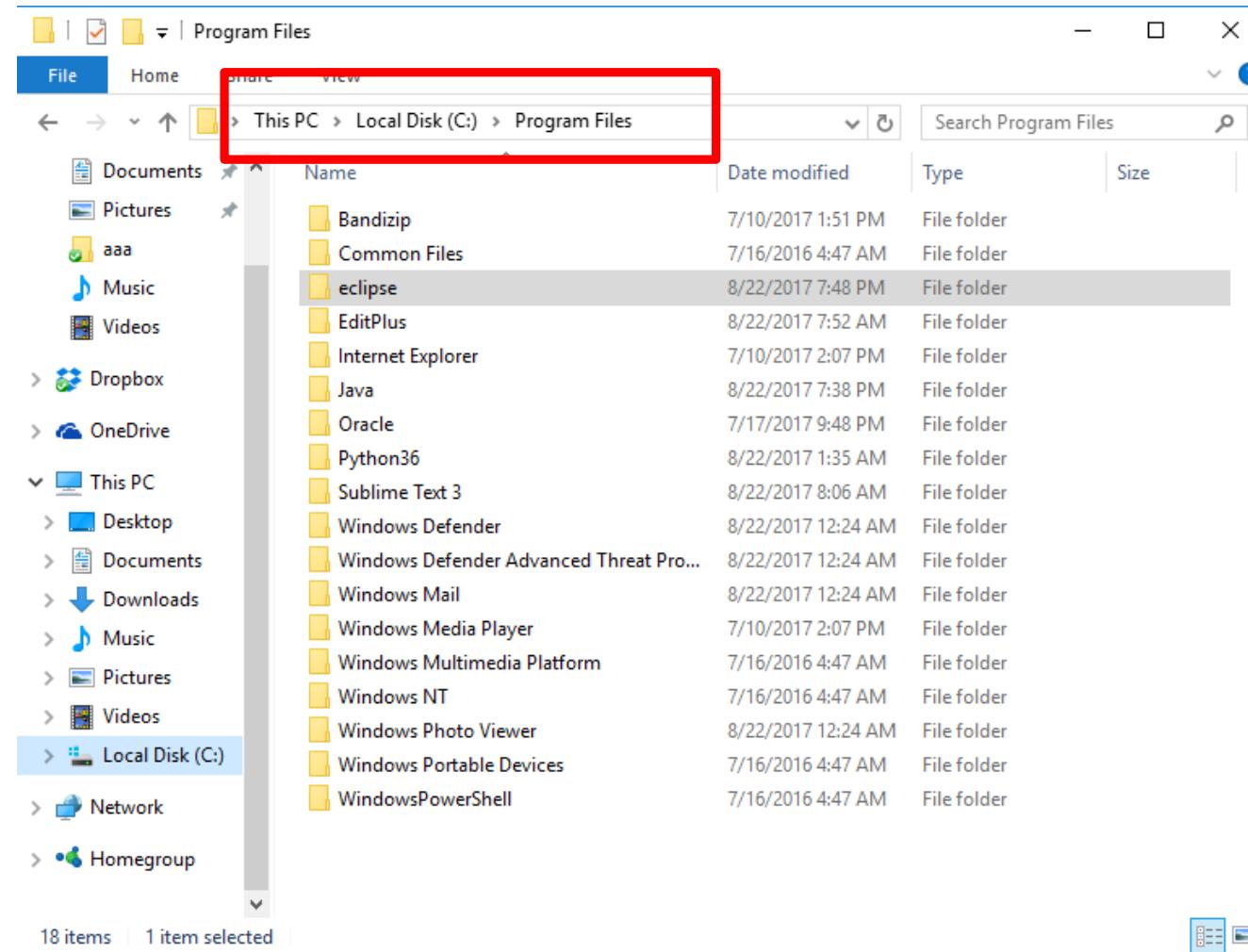


# Eclipse & PyDev (Cont.)



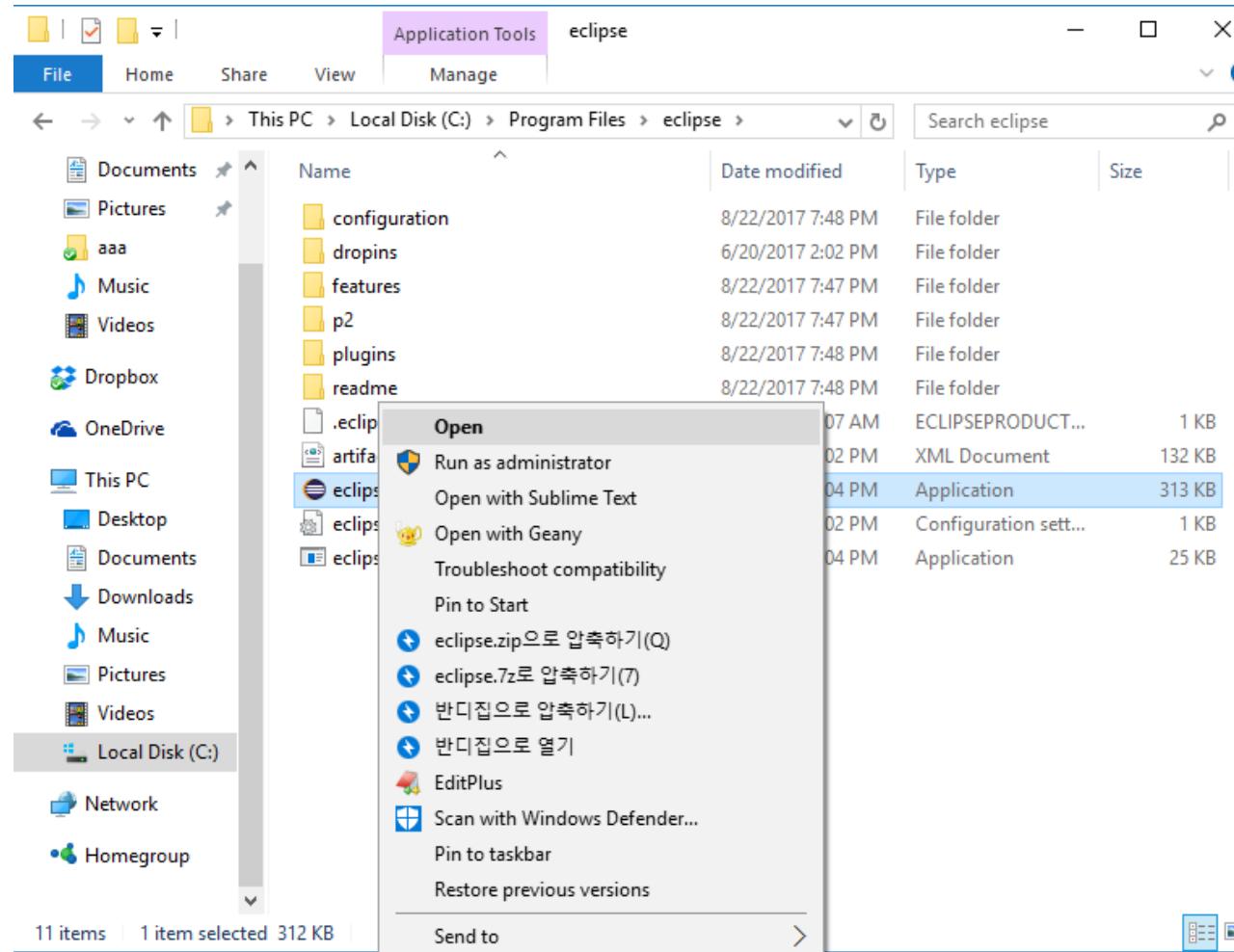
# Eclipse & PyDev (Cont.)

## 7. Move uncompressed **eclipse** into **Program Files**



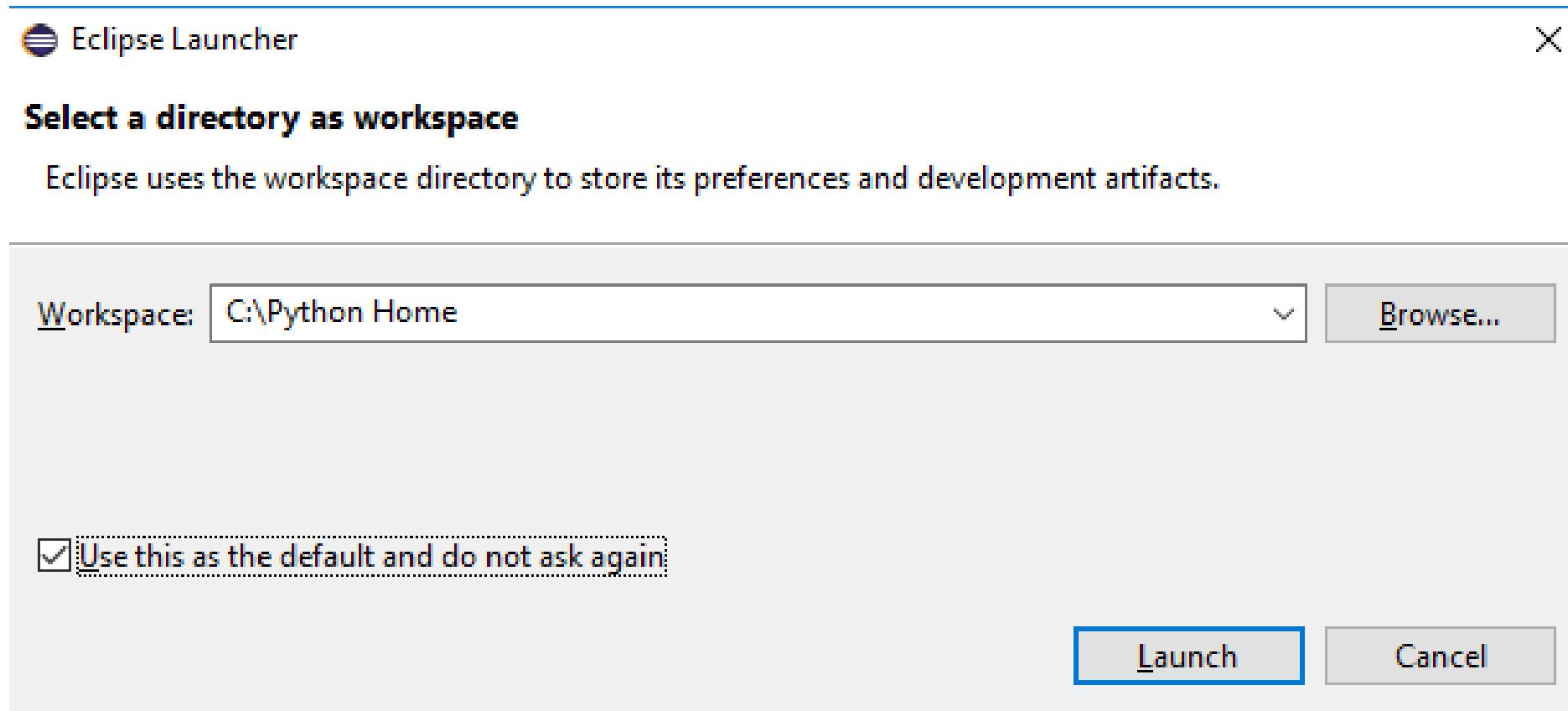
# Eclipse & PyDev (Cont.)

## 8. Execute `eclipse`

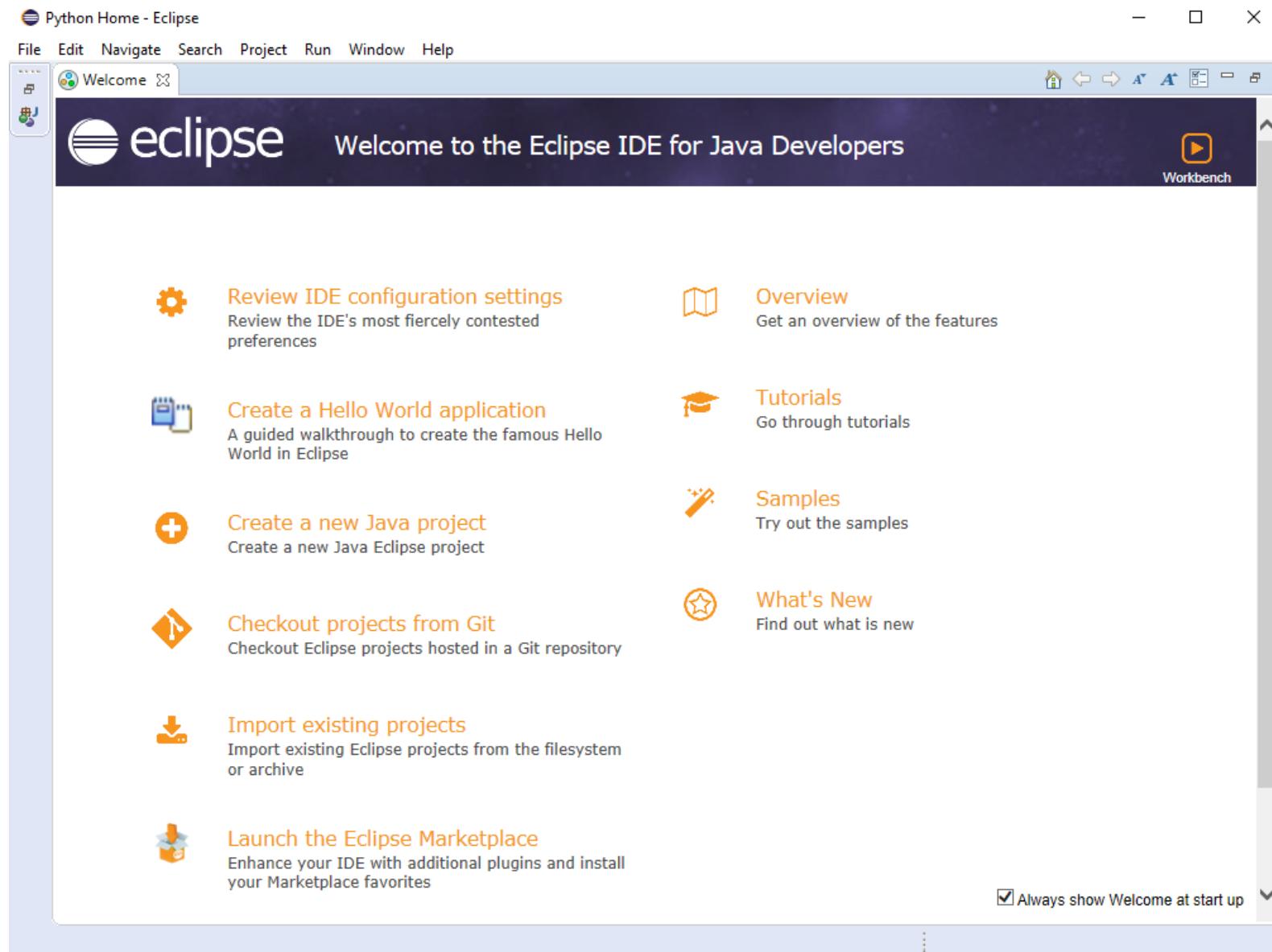


# Eclipse & PyDev (Cont.)

## 9. Select **workspace** for python code.

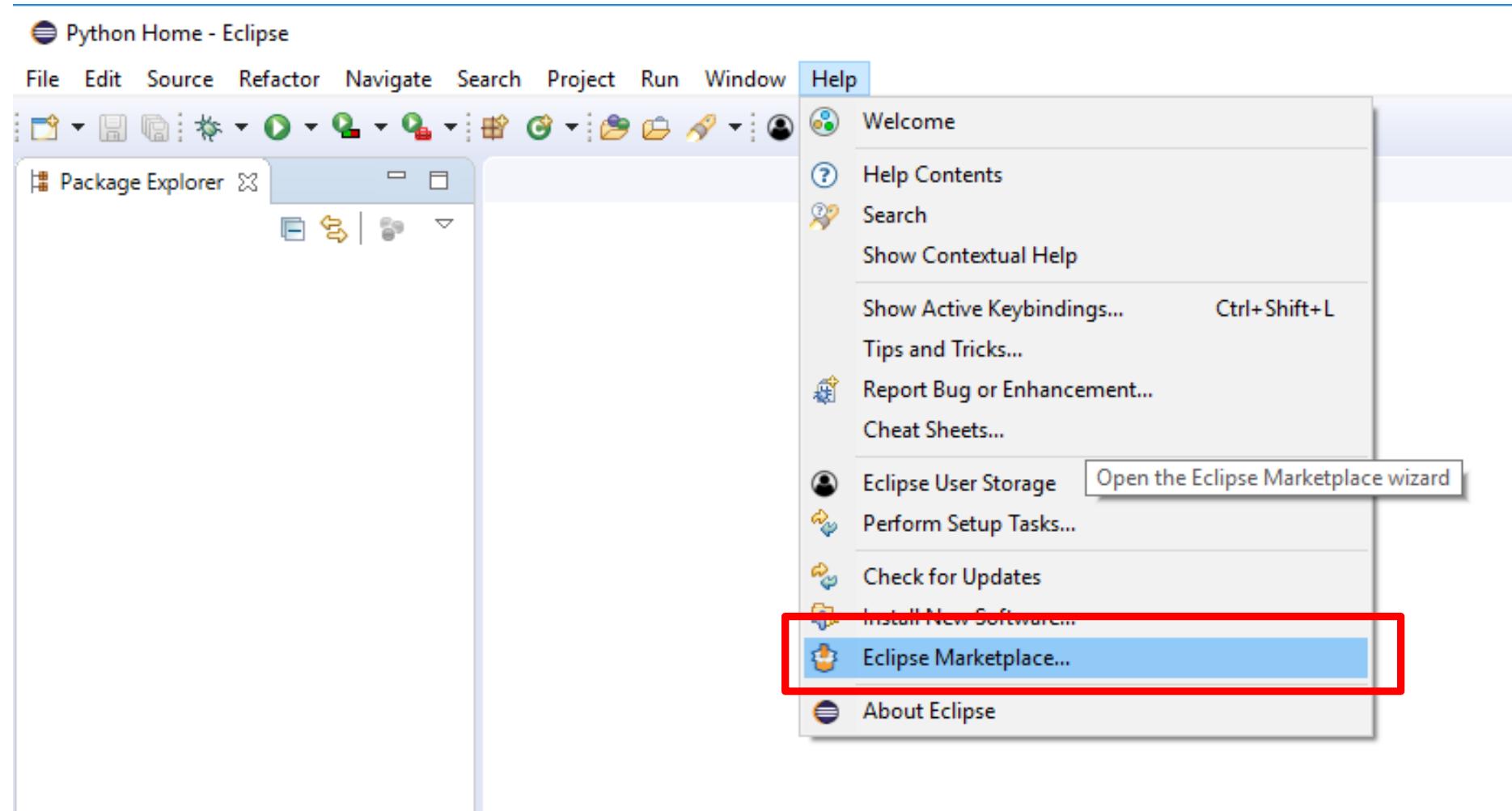


# Eclipse & PyDev (Cont.)



# Eclipse & PyDev (Cont.)

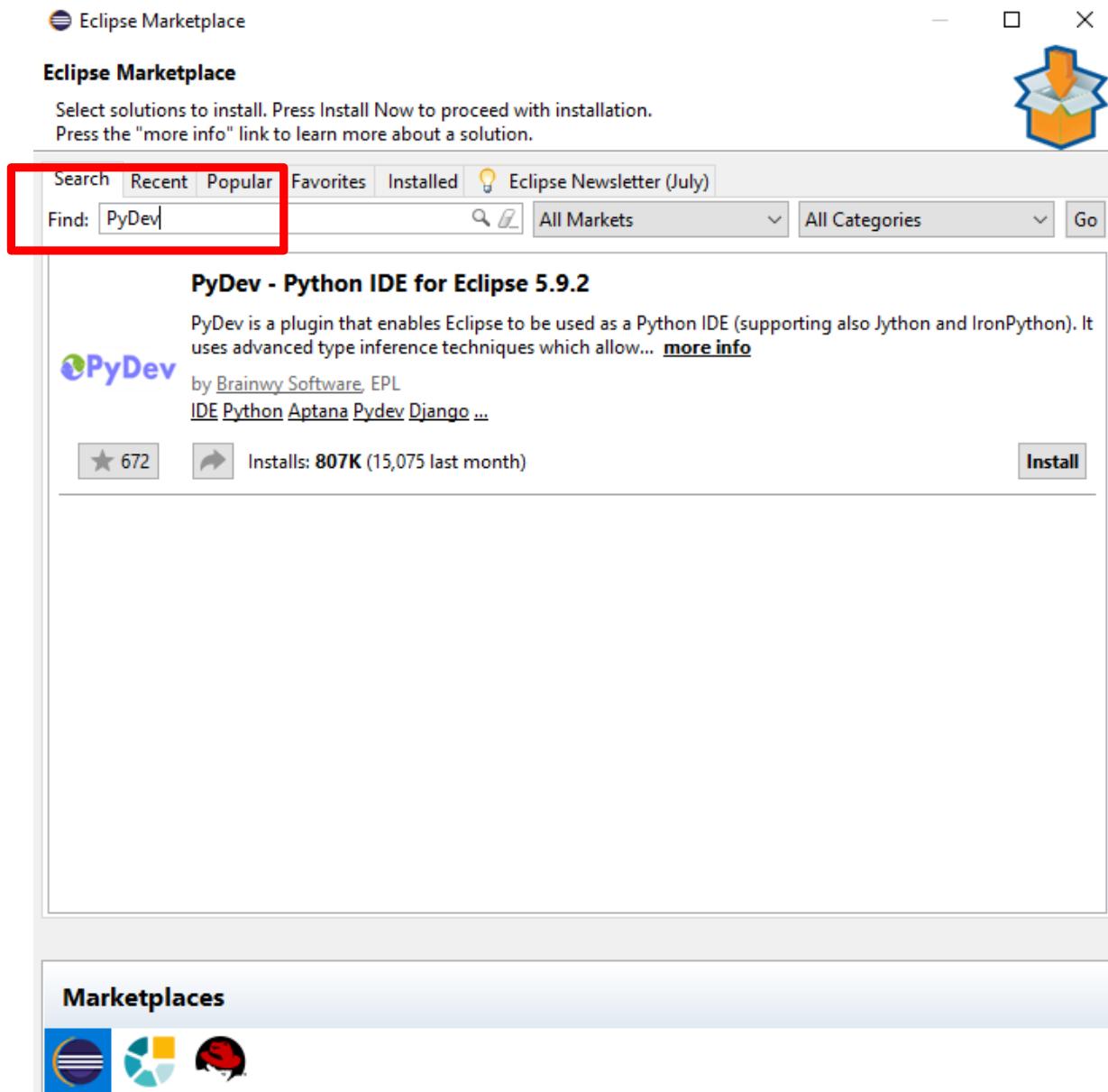
10. Click to **Help** > **Eclipse Marketplace...**



# Eclipse & PyDev (Cont.)

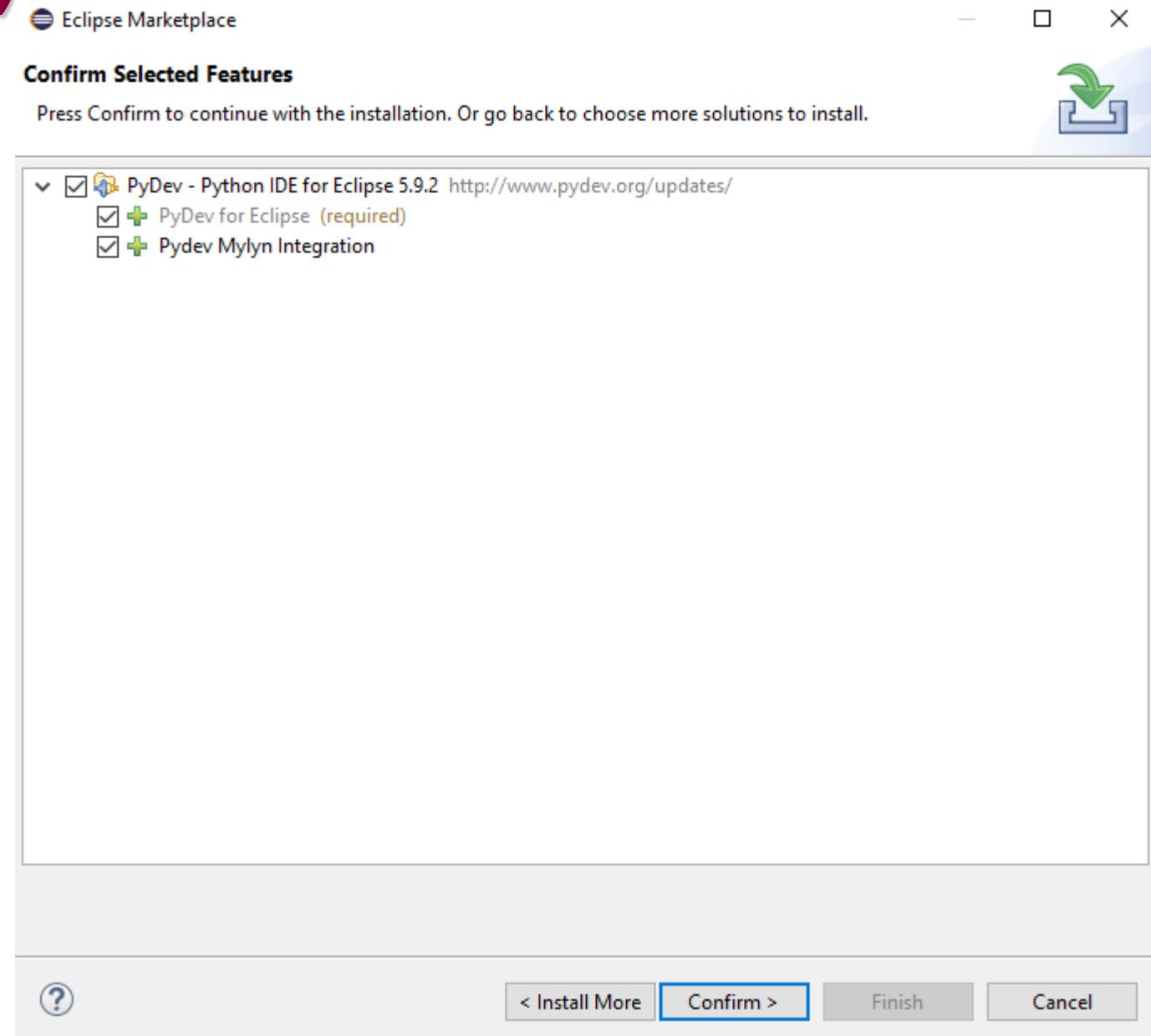
11. Search for **PyDev**

12. Click **Install**



# Eclipse & PyDev (Cont.)

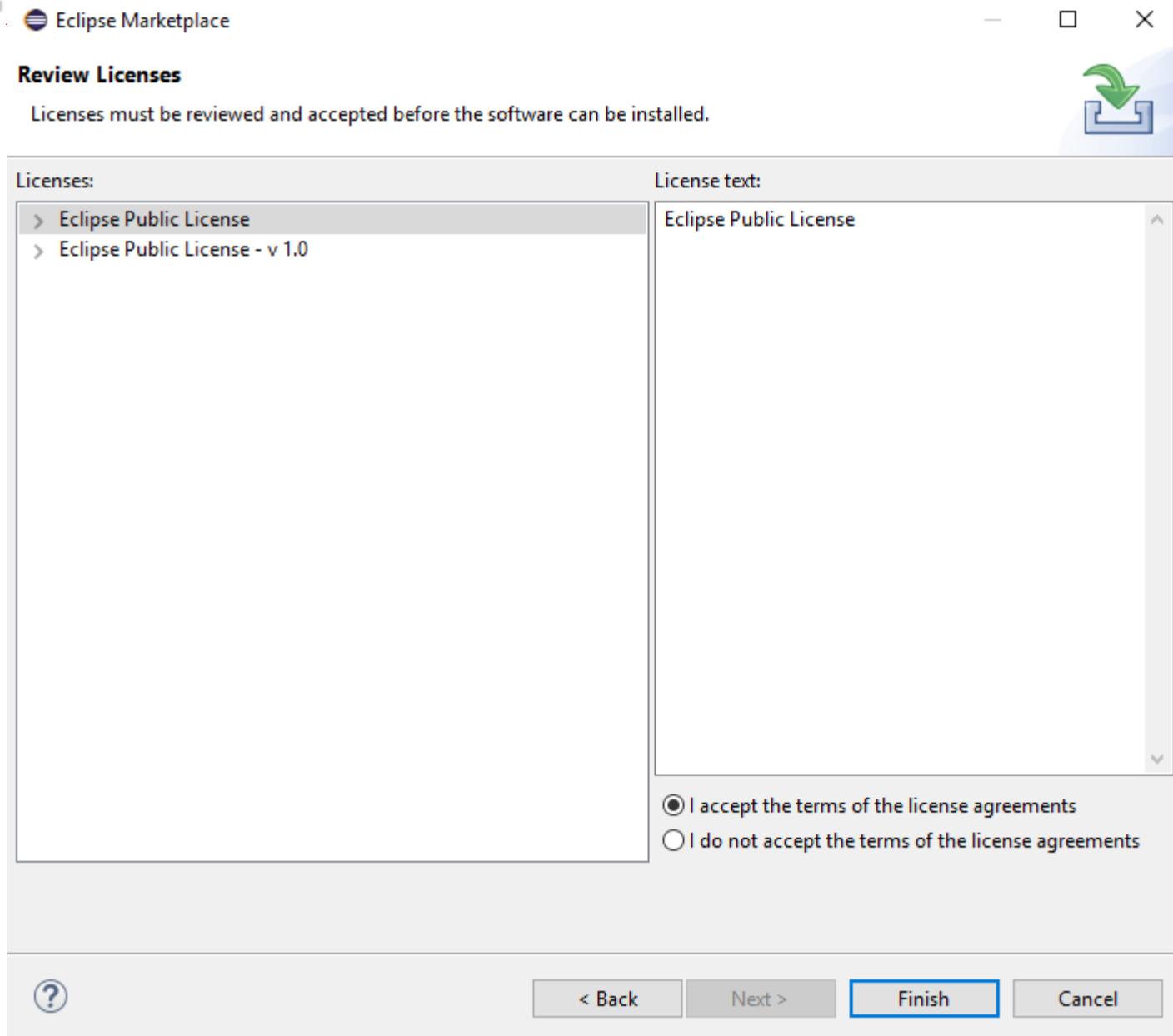
## 13. Click Confirm



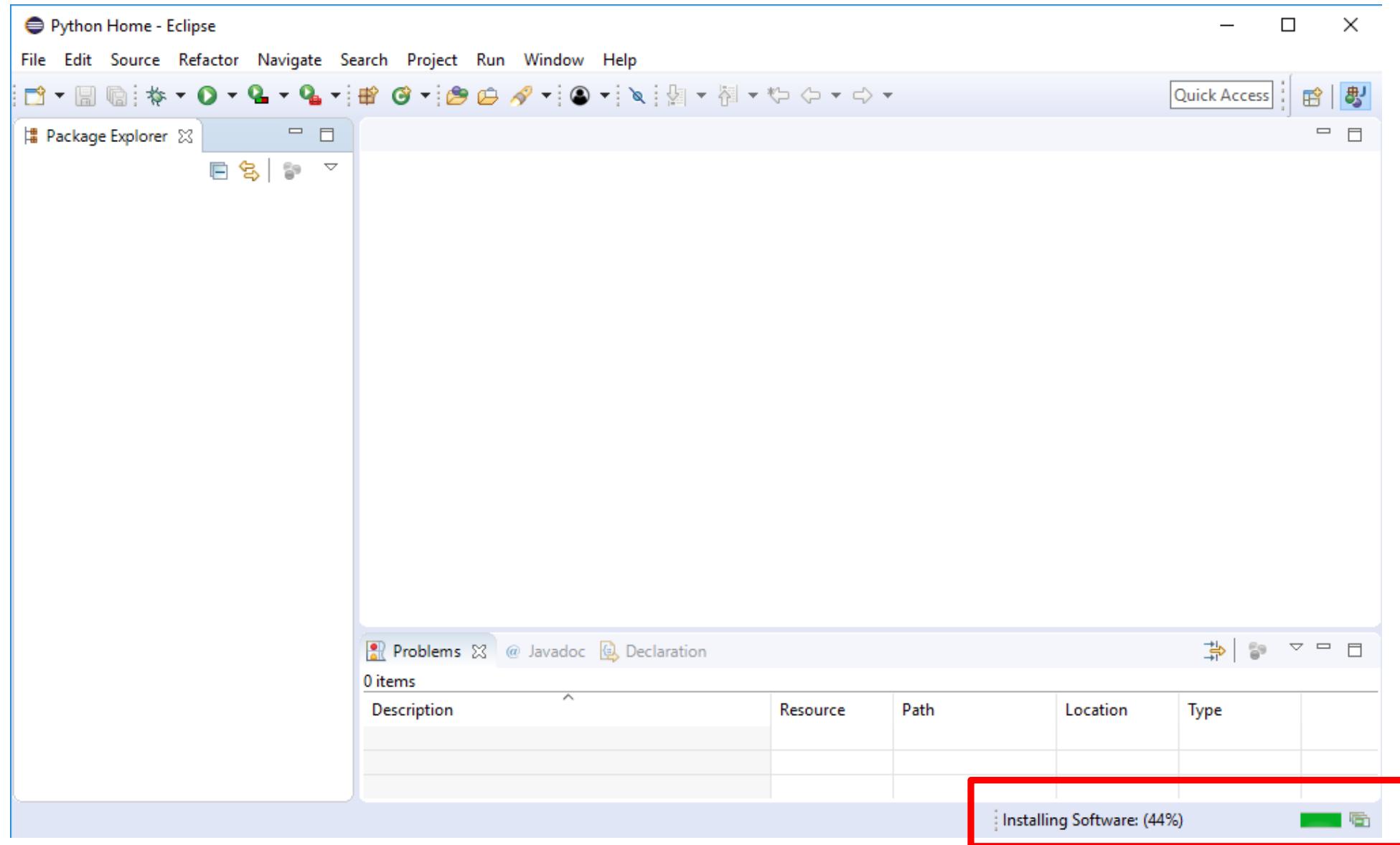
# Eclipse & PyDev (Cont.)

14. Select **I accept..**

15. Click **Finish**

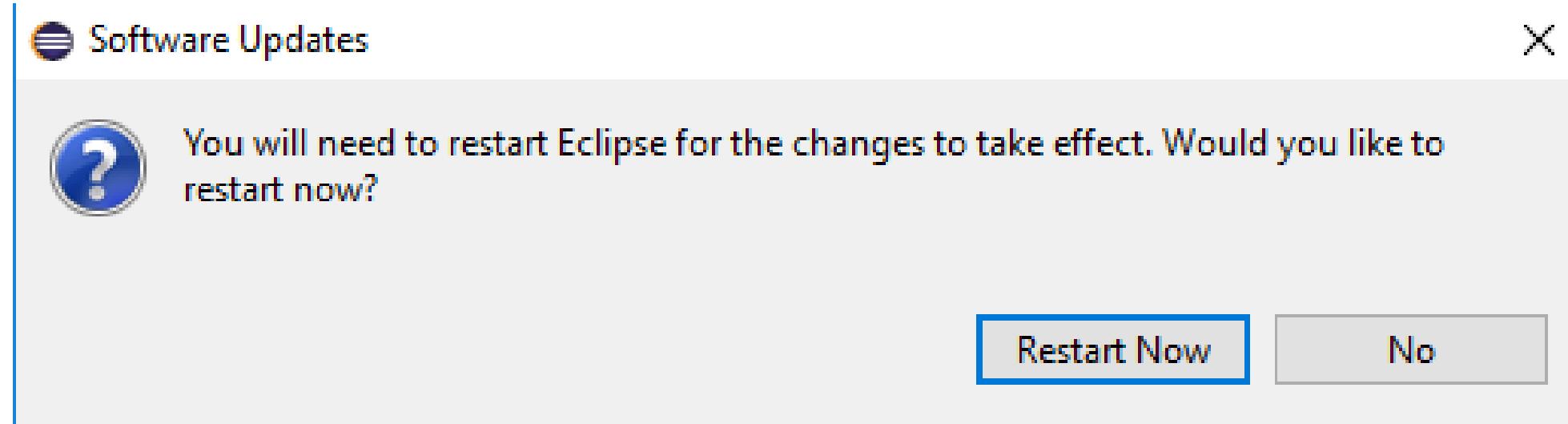


# Eclipse & PyDev (Cont.)



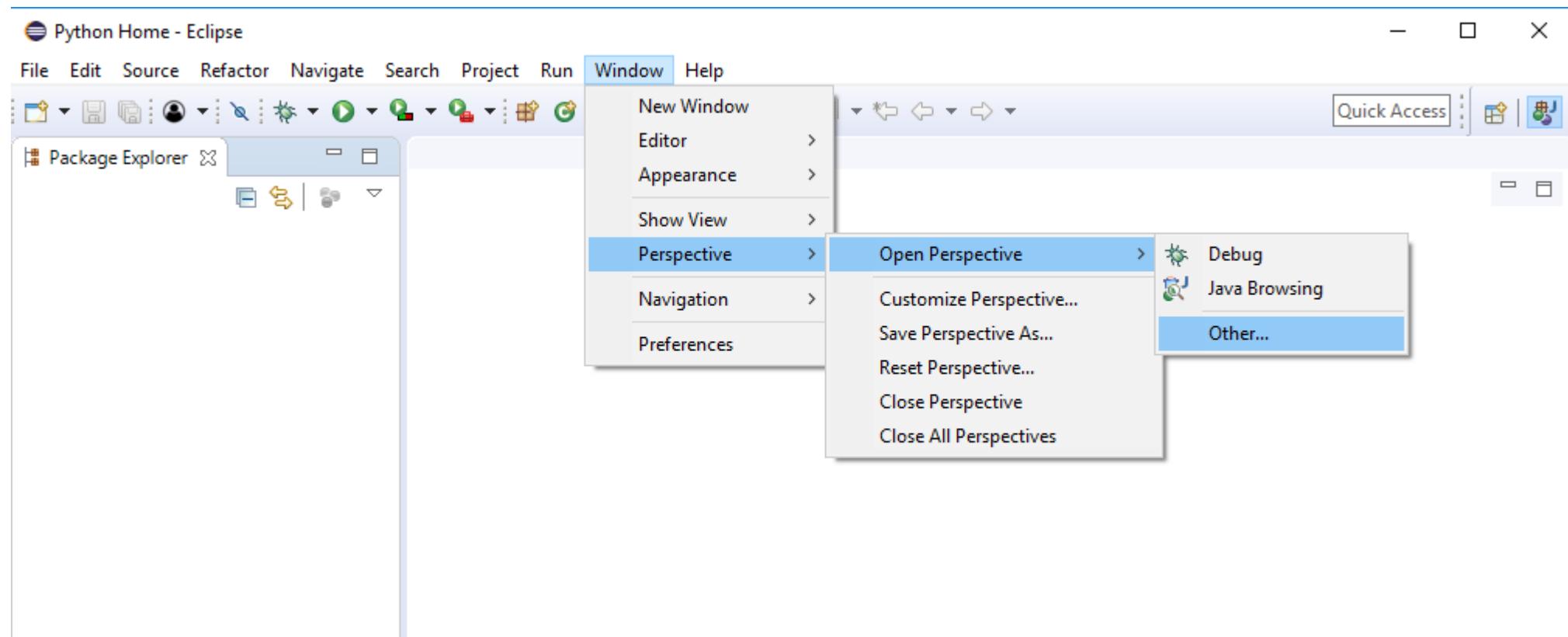
# Eclipse & PyDev (Cont.)

## 16. Click **Restart Now**



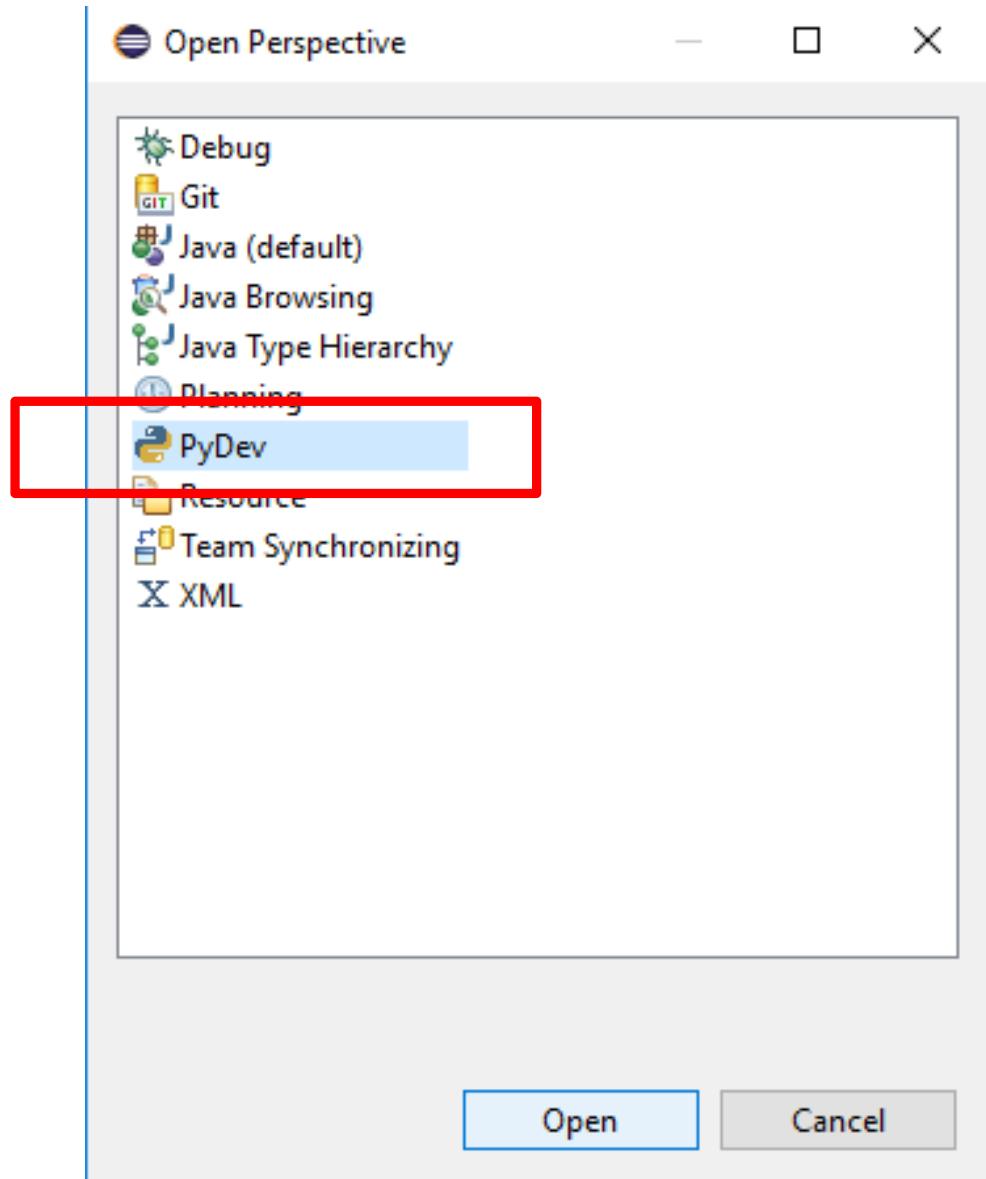
# Eclipse & PyDev (Cont.)

17. Click **Window > Perspective > Open Perspective > Other...**

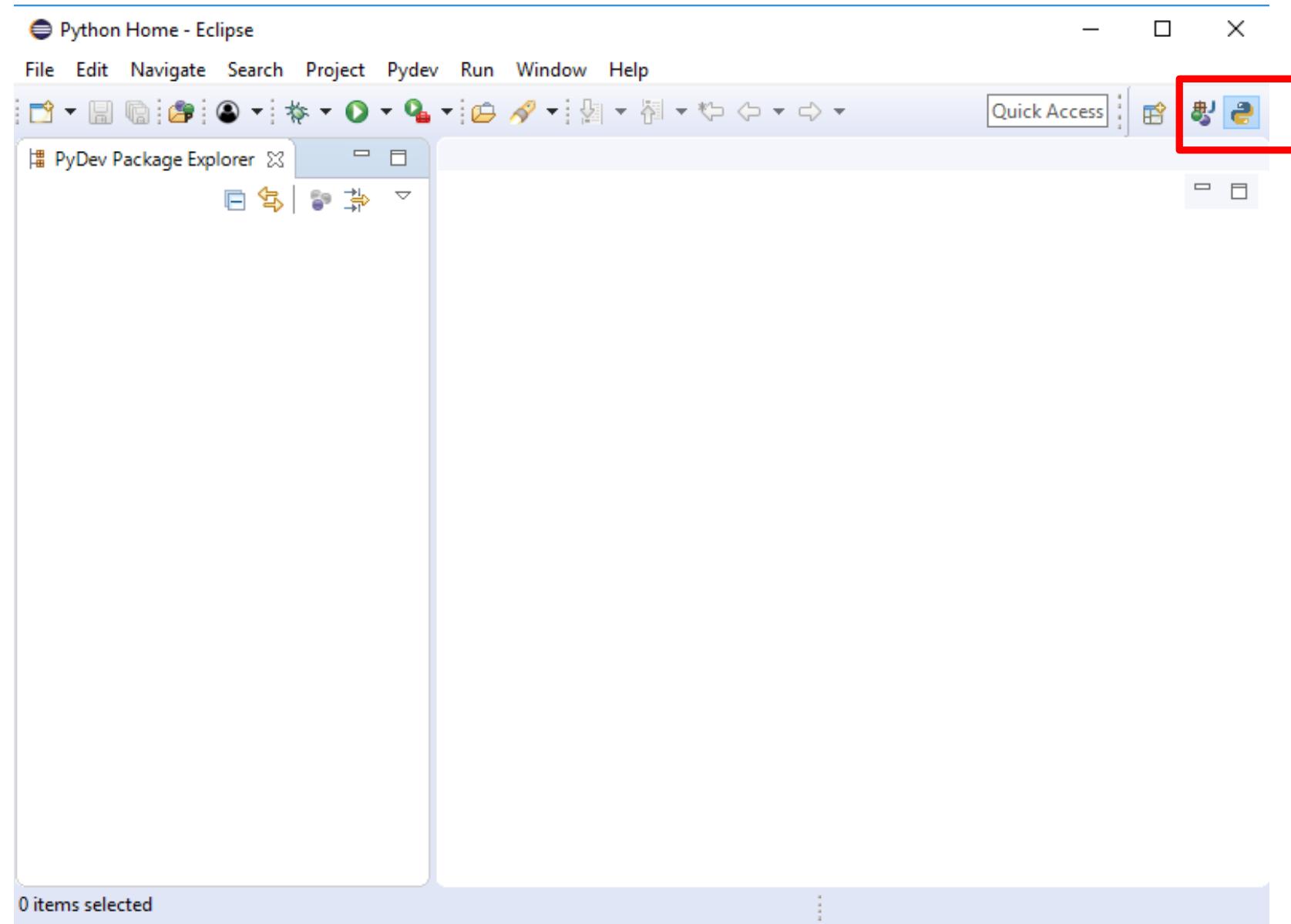


# Eclipse & PyDev (Cont.)

18. Select **PyDev** and Click **Open** button.

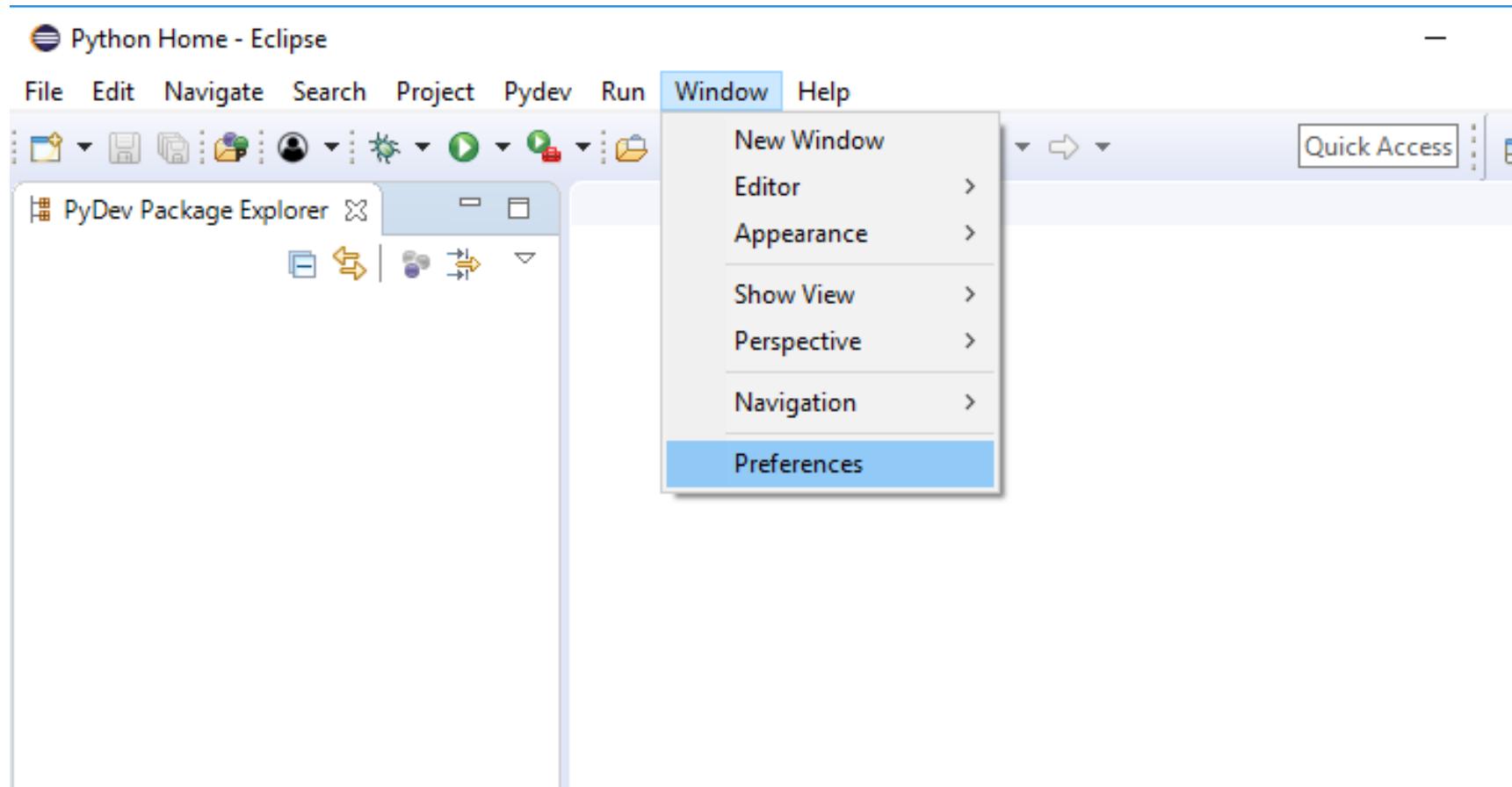


# Eclipse & PyDev (Cont.)



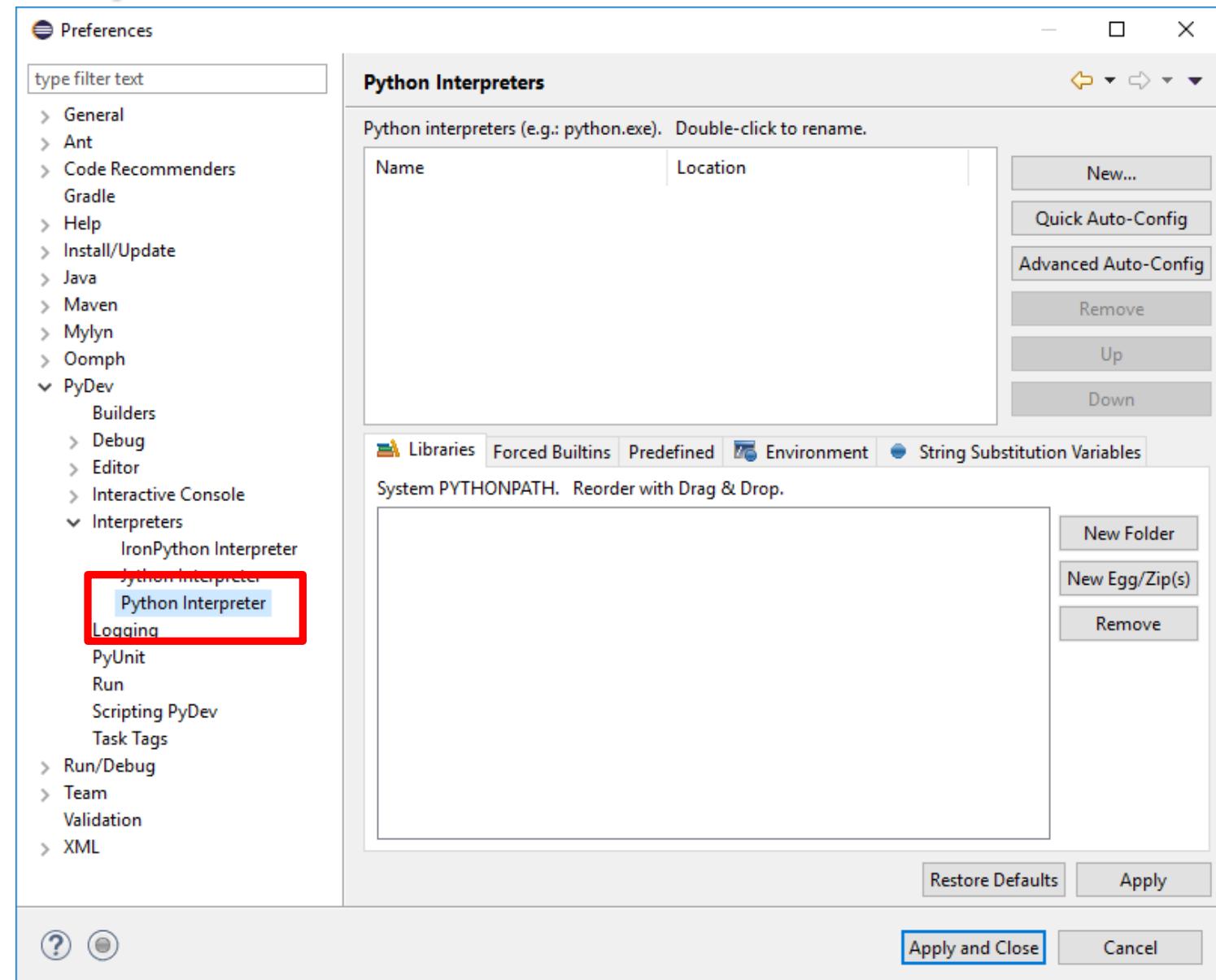
# Eclipse & PyDev (Cont.)

19. Click **Window > Preferences**



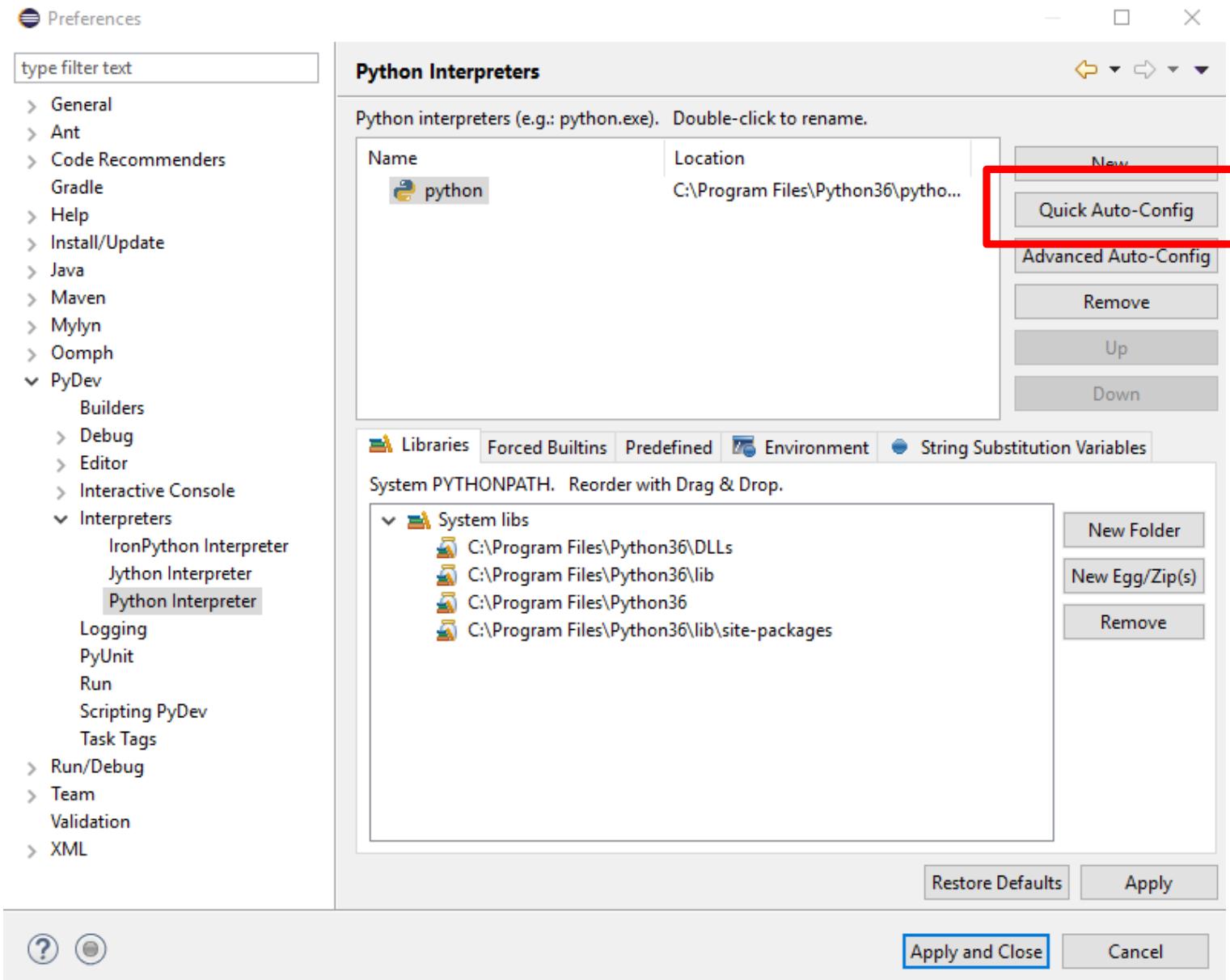
# Eclipse & PyDev (Cont.)

20. Click **PyDev** >  
**Interpreters** >  
**Python**  
**Interpreter**



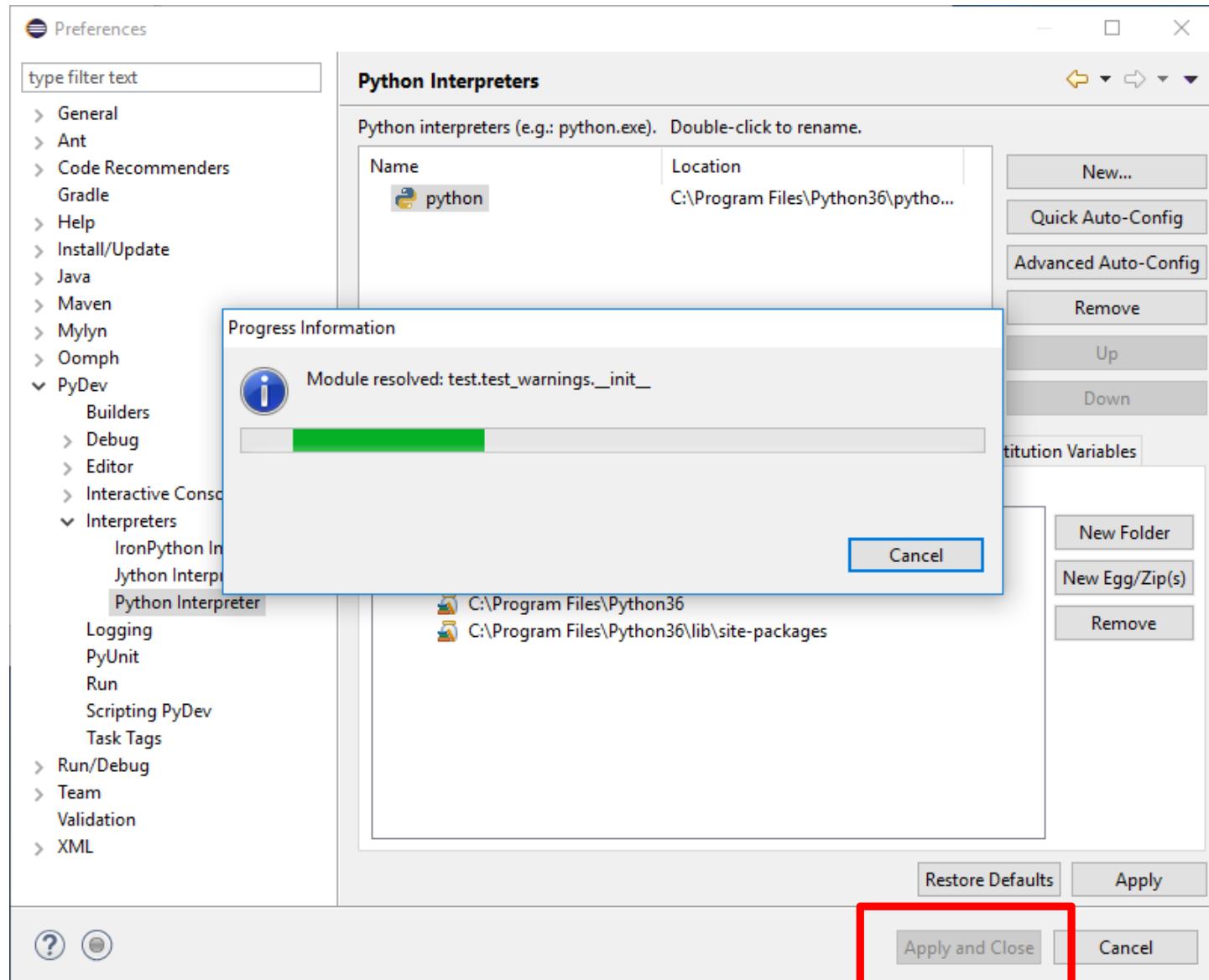
# Eclipse & PyDev (Cont.)

21. Click **Quick Auto-Config** button.



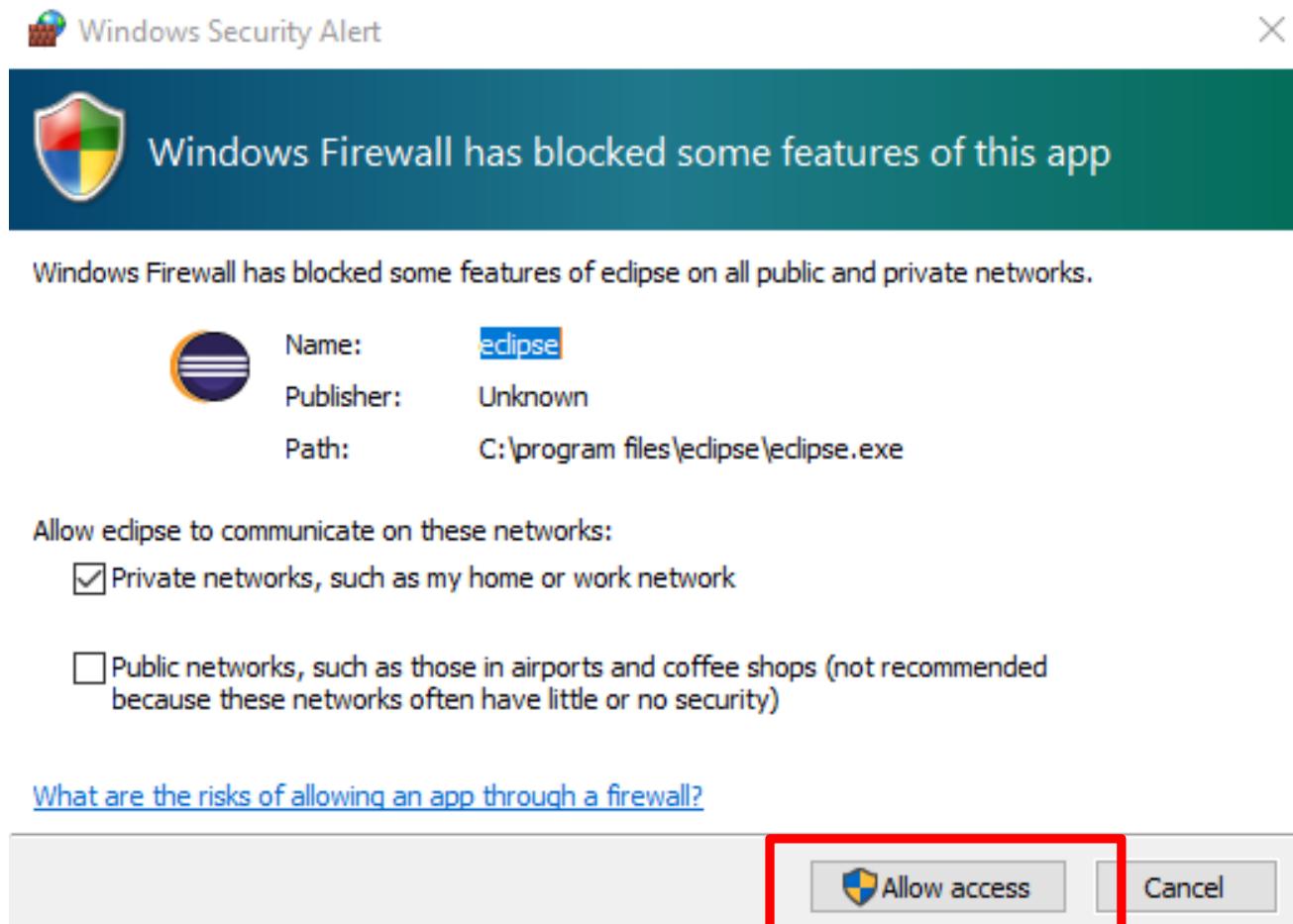
# Eclipse & PyDev (Cont.)

22. Click **Apply** and **Close** button.



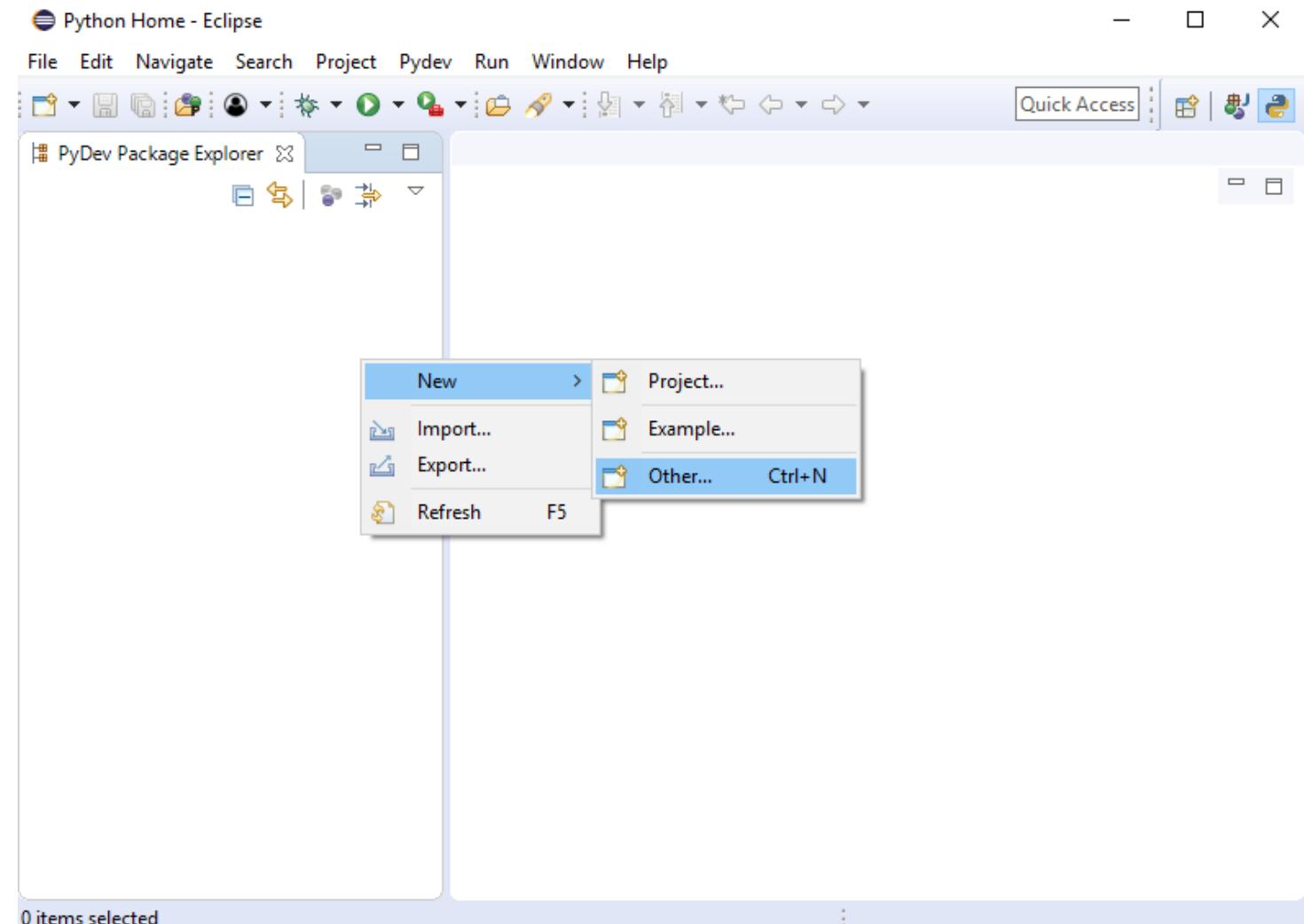
# Eclipse & PyDev (Cont.)

23. Click **Allow access** button.



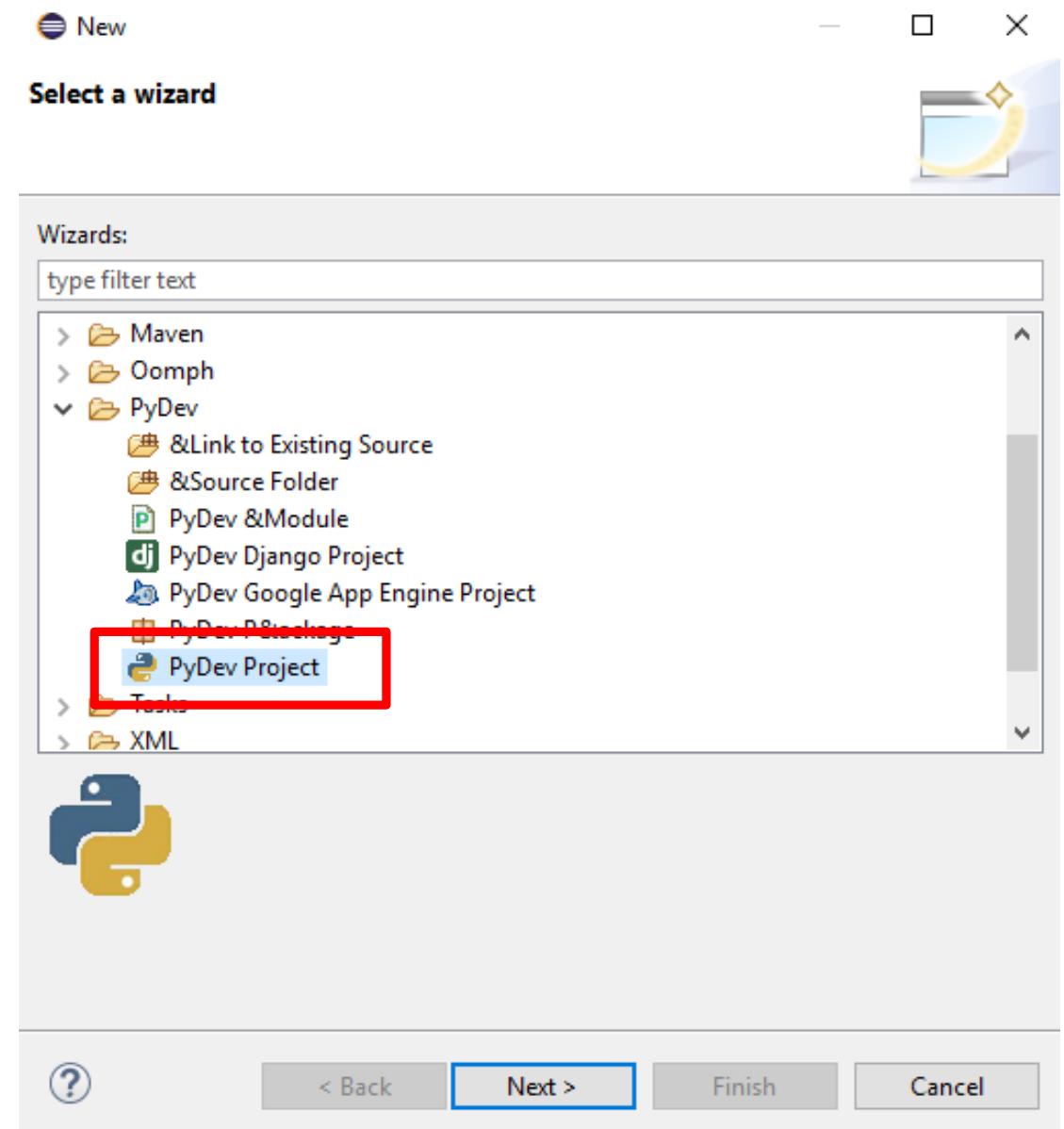
# Eclipse Hello World Project

1. In PyDev Package Explorer > right-click >  
New > Other...



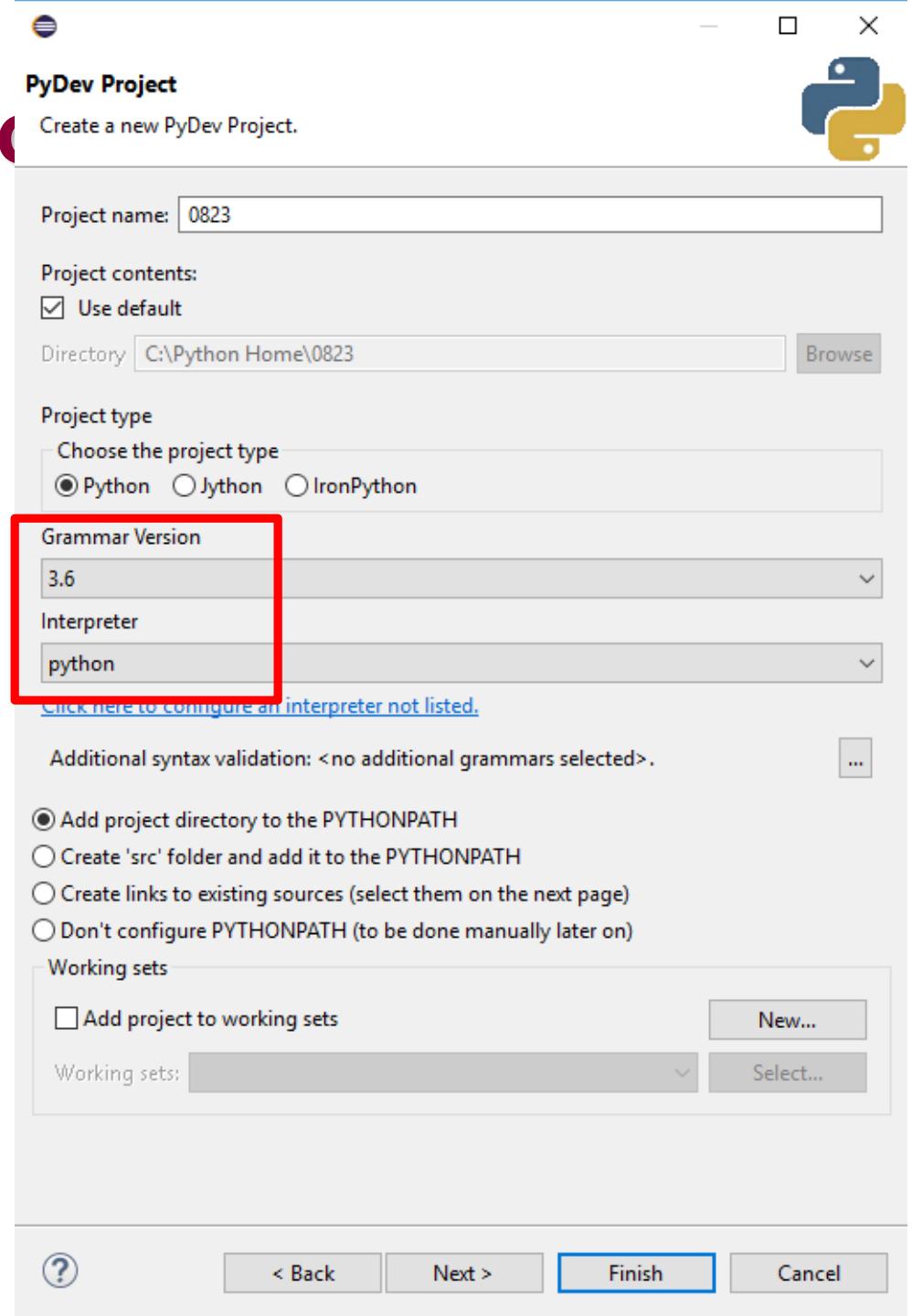
# Eclipse Hello World Project (Cont.)

2. Click **PyDev > PyDev Project**
3. Click **Next** button.



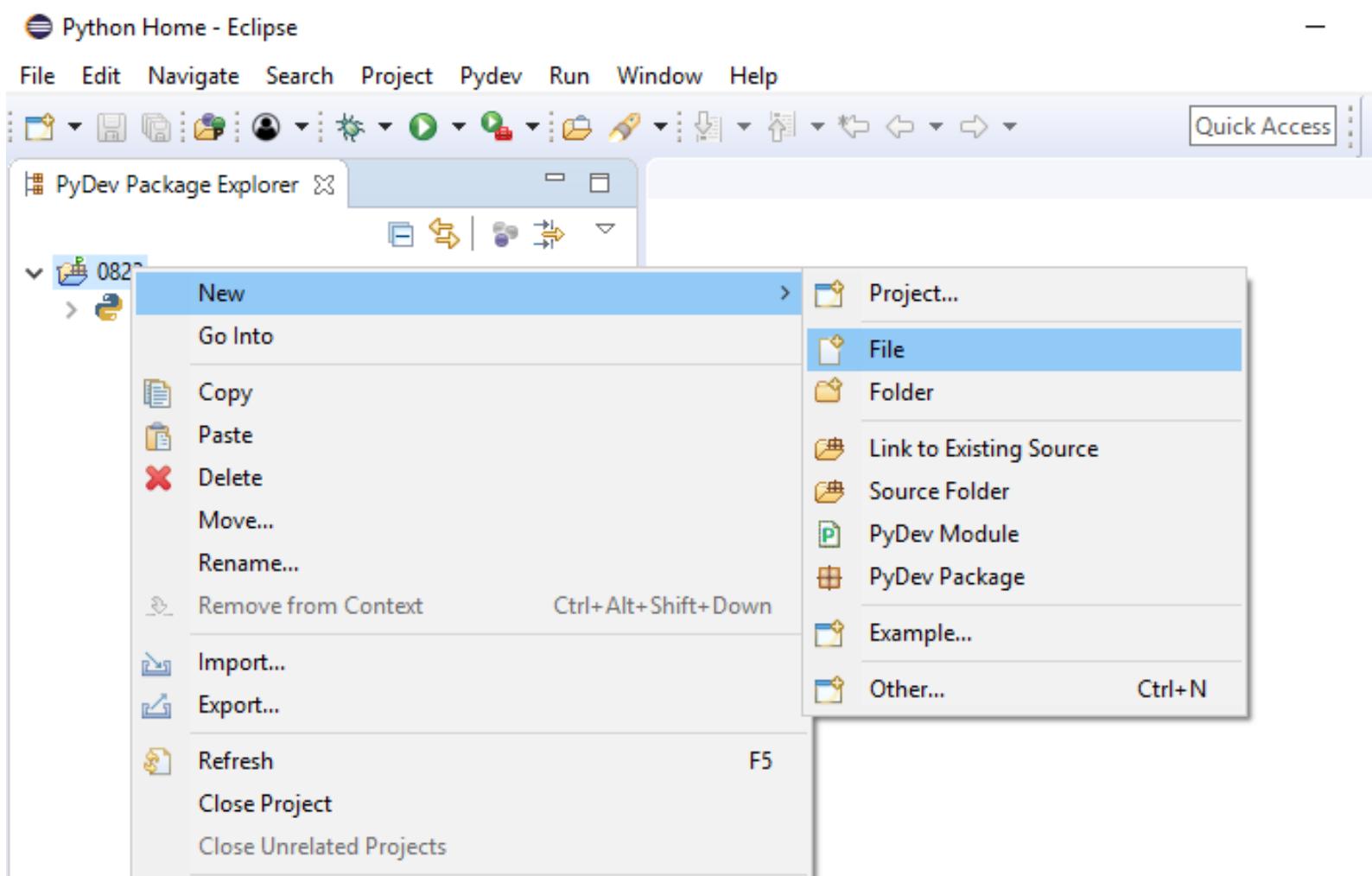
# Eclipse Hello World Project (Create)

4. Project name :
5. Grammar Version : 3.6
6. Interpreter : python
7. Click **Finish** button.



# Eclipse Hello World Project (Cont.)

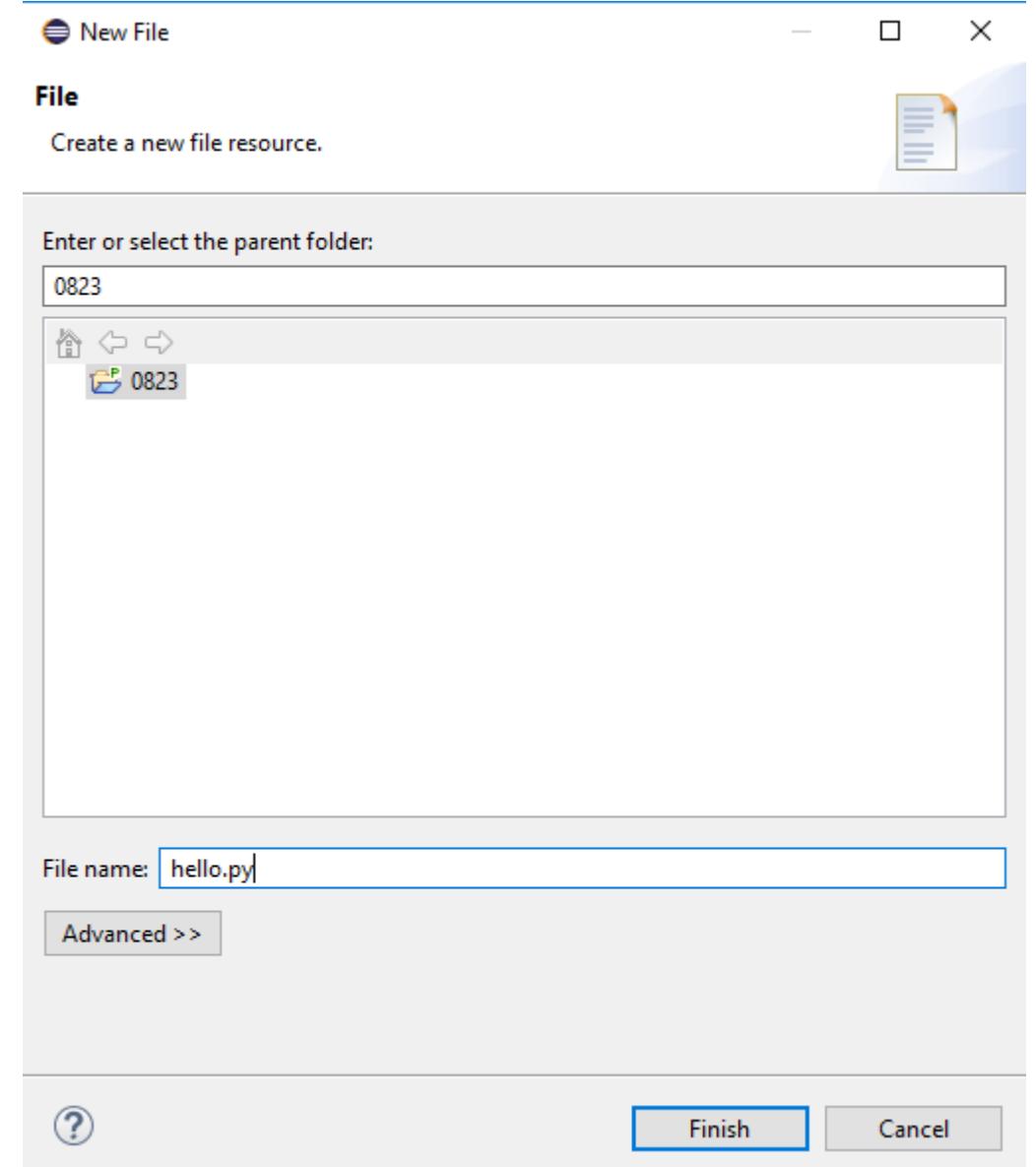
8. In Project name > **right-click** > **New** > **File**



# Eclipse Hello World Project (Cont.)

9. File name :

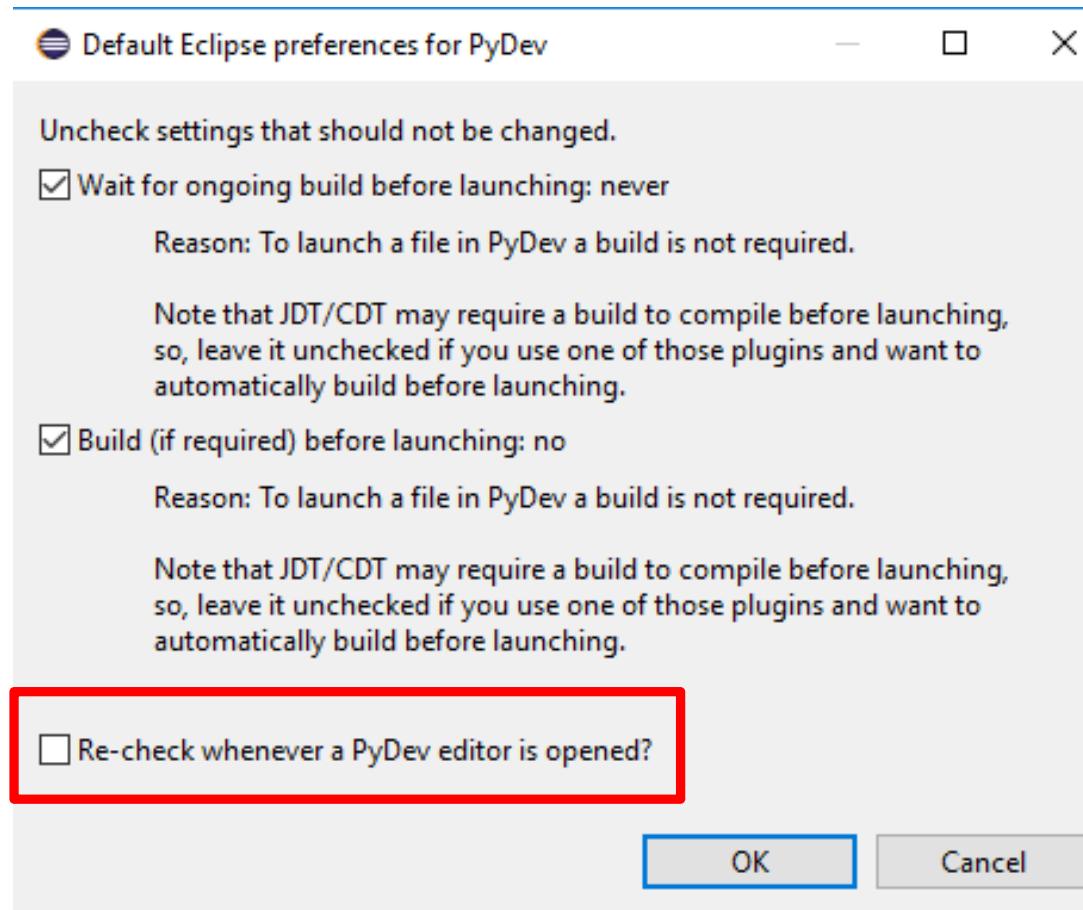
10. Click **Finish** button.



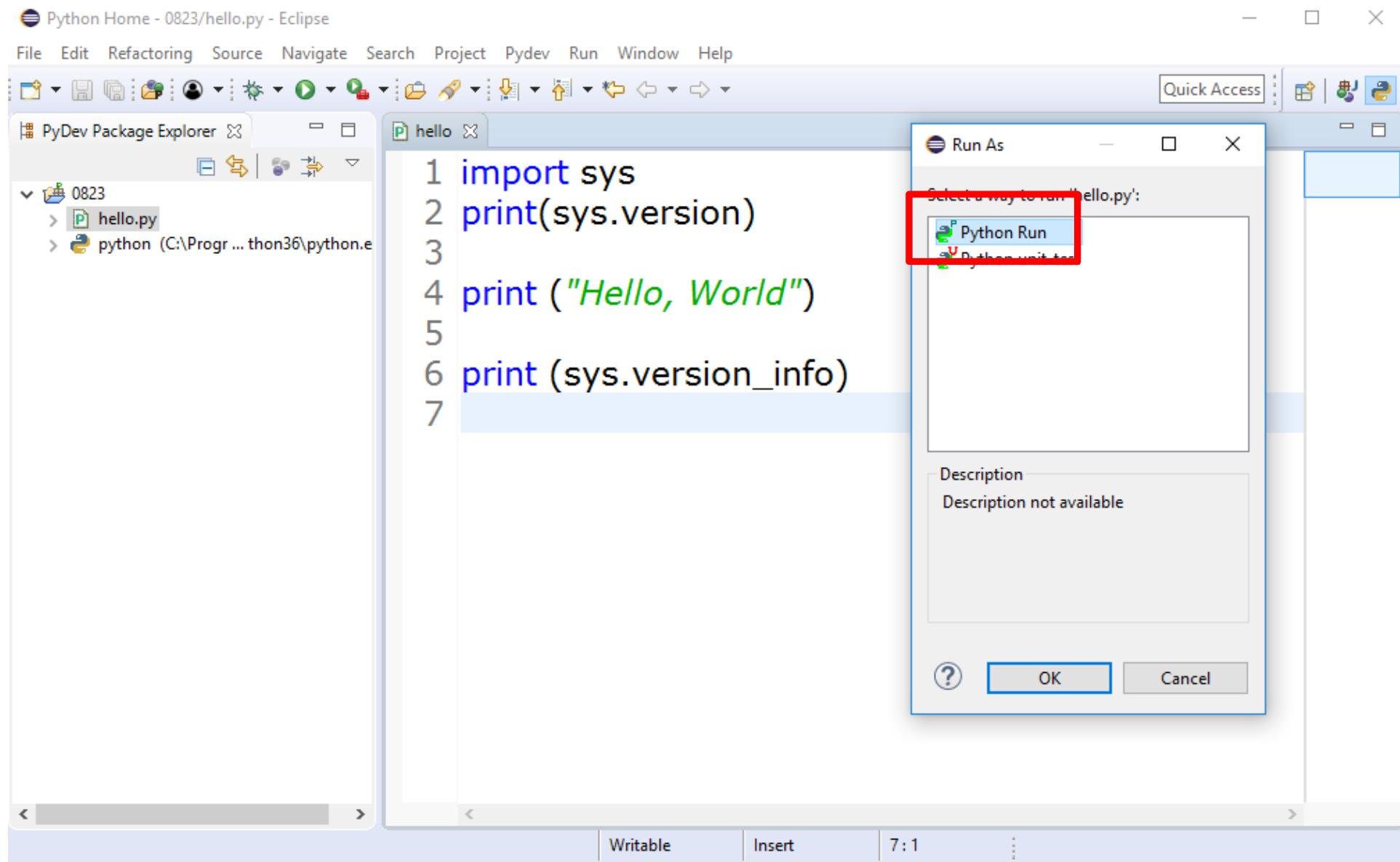
# Eclipse Hello World Project (Cont.)

11. Uncheck **Re-check whenever...**

12. Click **OK** button.



# Eclipse Hello World Project (Cont.)



# Eclipse Hello World Project (Cont.)

The screenshot shows the Eclipse PyDev interface with a Python project named '0823' containing a file 'hello.py'. The code in 'hello.py' is:

```
1 import sys
2 print(sys.version)
3
4 print ("Hello, World")
5
6 print (sys.version_info)
7
```

The 'Console' view shows the output of running the script:

```
<terminated> hello.py [C:\Program Files\Python36\python.exe]
3.6.2 (v3.6.2:5fd33b5, Jul  8 2017, 04:57:36) [MSC v.1900 64 bit (AMD64)]
Hello, World
sys.version_info(major=3, minor=6, micro=2, releaselevel='final', serial=0)
```

The status bar at the bottom indicates the code is 'Writable' and has a line count of '7:1'.

# Eclipse Hello World Project (Cont.)

```
C:\Python Home\0823>dir  
Volume in drive C has no label.  
Volume Serial Number is 6015-352D
```

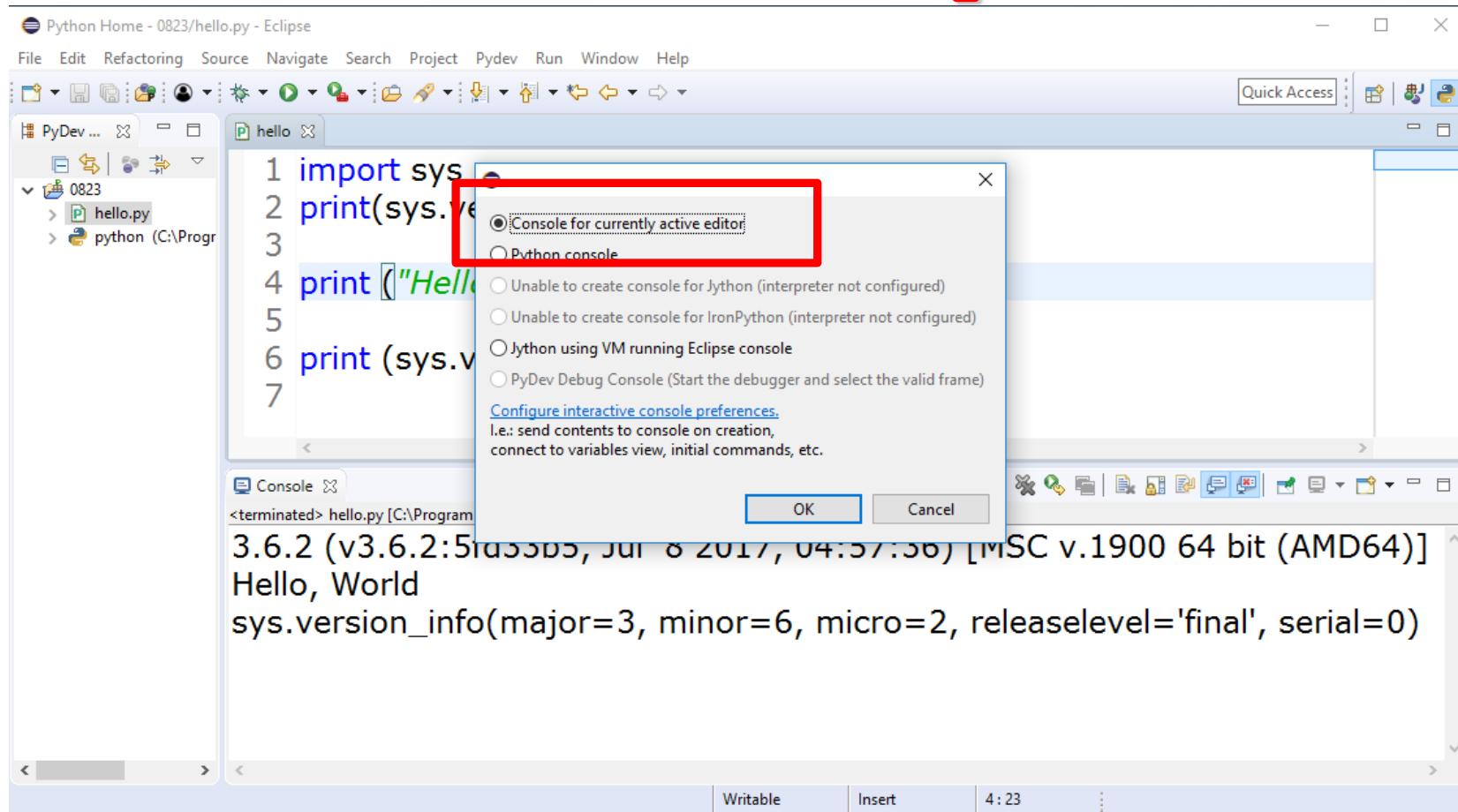
Directory of C:\Python Home\0823

08/22/2017	08:08 PM	<DIR>	.
08/22/2017	08:08 PM	<DIR>	..
08/22/2017	08:07 PM		375 .project
08/22/2017	08:07 PM		430 .pydevproject
08/22/2017	08:11 PM		86 hello.py
		3 File(s)	891 bytes
		2 Dir(s)	30,374,715,392 bytes free

```
C:\Python Home\0823>python hello.py  
3.6.2 (v3.6.2:5fd33b5, Jul  8 2017, 04:57:36) [MSC v.1900 64 bit (AMD64)]  
Hello, World  
sys.version_info(major=3, minor=6, micro=2, releaselevel='final', serial=0)
```

# PyDev Interactive Console

1. Type **F2**.
2. Select **Console for currently active editor**



# PyDev Interactive Console (Cont.)

The screenshot shows the Eclipse PyDev IDE interface. The title bar reads "Python Home - 0823/hello.py - Eclipse". The menu bar includes File, Edit, Refactoring, Source, Navigate, Search, Project, Pydev, Run, Window, and Help. The toolbar has various icons for file operations like Open, Save, and Run. The left sidebar shows a project tree with "PyDev ...", a folder icon, and a file icon for "0823". Inside "0823", there is a file named "hello.py" and a folder named "python (C:\Program". The main editor window titled "hello" contains the following Python code:

```
1 import sys
2 print(sys.version)
3
4 print ("Hello, World")
5
6 print (sys.version_info)
7
```

Below the editor is a "Console" window titled "PyDev Console [0]". It displays the output of running the script:

```
C:\Program Files\Python36\python.exe 3.6.2 (v3.6.2:5fd33b5, Jul 8 2017, 04^
PyDev console: starting.
>>>
>>> print (4 + 5)
9
>>> |
```

# Python Coding using Web

## ■ Codepad(<http://codepad.org>)

The image shows two side-by-side screenshots of the Codepad web interface.

**Left Screenshot:** The main page of codepad.org. It features a title bar with the site's logo and a toolbar above the content area. The content area includes a brief introduction, a language selection dropdown (set to Python), and a code editor containing the Python code `print ('Hello, World')`. Below the code editor are three buttons: "Private" (unchecked), "Run code" (checked), and "Submit". To the right of the code editor is a sidebar with links to "Recent Pastes", "Get a Project Page", "Hello World Examples", "FizzBuzz", "Vim Plugin", and "Emacs Integration". A note about the creator, Steven Hazel, is also present.

**Right Screenshot:** A screenshot of the same page after the code has been run. The URL in the address bar is now [codepad.org/h8HBfQal](http://codepad.org/h8HBfQal). The "Run code" button is checked. The "Output" section displays the result of the code execution: "Hello, World". The "New paste" section at the bottom contains the same Python code: `print ('Hello, World')`, with a language dropdown set to "Python".

# Python Coding using Web

## ■ Paiza.io(<https://paiza.io>)

Just write and run code online !

paiza.IO is web-based coding environment.  
Java, Ruby, Python, PHP, Perl,... More than 20 languages are supported.  
You can use for learn programming, scrape web sites, write batch, etc...

**Start coding ( Free )**

Featured codes

```
<!DOCTYPE html>
<html>
```

Leave a message

Swift

main.swift

```
1 // Here your code !
2
3 print("Hello, World")
4
```

Success

Run (Ctrl-Enter)

Output: Hello, World

Input: Comments (0)

Leave a message

# Python Coding using Web

- runnable(<http://code.runnable.com>)

