

# Installation Instructions for Introduction to Python (Python, PyCharm and pygame)

## Microsoft Windows 10

Fall 2017

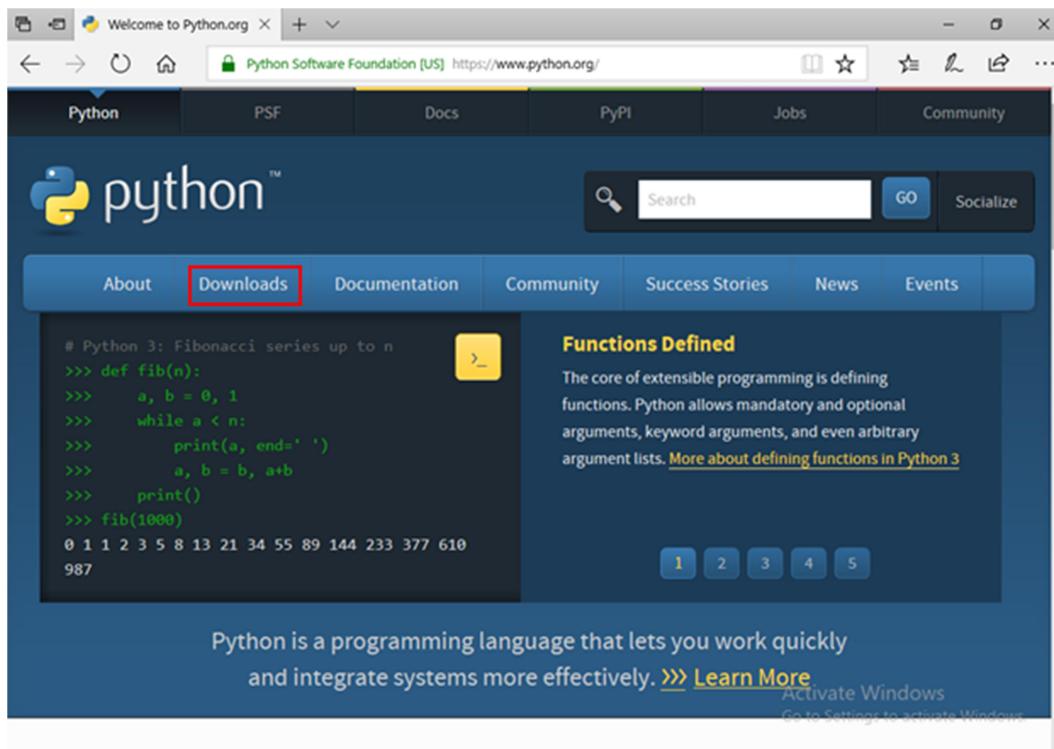
This document will cover the steps required to install the software used in XModus' Introduction to Python Programming class on a PC running Microsoft Windows 10. These instructions include installing Python 3.6, Jet Brain's PyCharm Community Edition editor and the Python gaming library pygame version 1.9.3.

### Step 1. Install Python 3

We must begin by first installing the Python 3 programming language onto your computer.

Go to <https://www.python.org> to download the Python 3 installation program.

On the Python home page click the “Downloads” link at the top of the page (highlighted in red).



On the “Download the latest version for Windows” page click the “Download Python 3.6.3” (note: if you visit this page in the future you will find a version higher than 3.6.3 – go ahead and download the higher 3.x.x version).

The screenshot shows the Python Software Foundation website at https://www.python.org/downloads/. The main heading is "python™". Below it is a navigation bar with links: About, Downloads, Documentation, Community, Success Stories, News, and Events. A large banner features the text "Download the latest version for Windows" and two yellow buttons: "Download Python 3.6.3" and "Download Python 2.7.14". Below the banner, there's a note about the difference between Python 2 and 3, and links for Python on other platforms like Linux/UNIX, Mac OS X, and Others. To the right of the banner is an illustration of two boxes descending from the sky on parachutes. At the bottom left, there's a link "Looking for a specific release?" and a note about activating Windows. On the right, there's a link "Activate Windows" and a note to go to Settings to activate Windows.

Once the download is complete visit your “Downloads” folder and find the “python-3.6.3” Application file and double click on it to start the installation program.

The screenshot shows the Windows File Explorer interface with the title bar "File Downloads". The left sidebar shows "This PC" selected, with icons for Quick access, Desktop, Downloads, Documents, Pictures, Music, Videos, OneDrive, Network, and Homegroup. The main area displays a list of files in the "Downloads" folder. The file "pycharm-community-2017.2.4" is listed first, and the file "python-3.6.3" is highlighted with a red box. The file details are: Name: python-3.6.3, Date modified: 2017-11-22 9:12 AM, Type: Application, Size: 29,868 KB.

When the installer first appears check the “Install launcher for all users (recommended)” and then choose the “Customize installation” option at the bottom (highlighted in red).

## Install Python 3.6.3 (32-bit)

Select Install Now to install Python with default settings, or choose Customize to enable or disable features.

### Install Now

C:\Users\Chris\AppData\Local\Programs\Python\Python36-32

Includes IDLE, pip and documentation  
Creates shortcuts and file associations

→ Customize installation  
Choose location and features

Install launcher for all users (recommended)

Add Python 3.6 to PATH

Cancel

Leave the “Optional Features” page as-is and click the “Next” button to continue.

## Optional Features

Documentation

Installs the Python documentation file.

pip

Installs pip, which can download and install other Python packages.

tcl/tk and IDLE

Installs tkinter and the IDLE development environment.

Python test suite

Installs the standard library test suite.

py launcher  for all users (requires elevation)

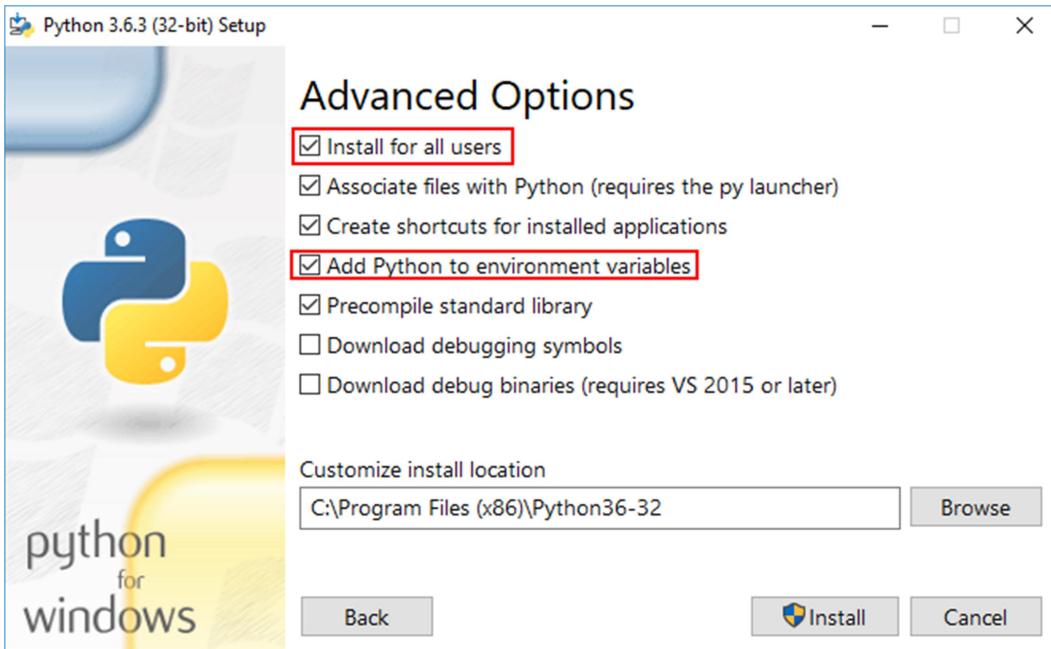
Installs the global 'py' launcher to make it easier to start Python.

Back

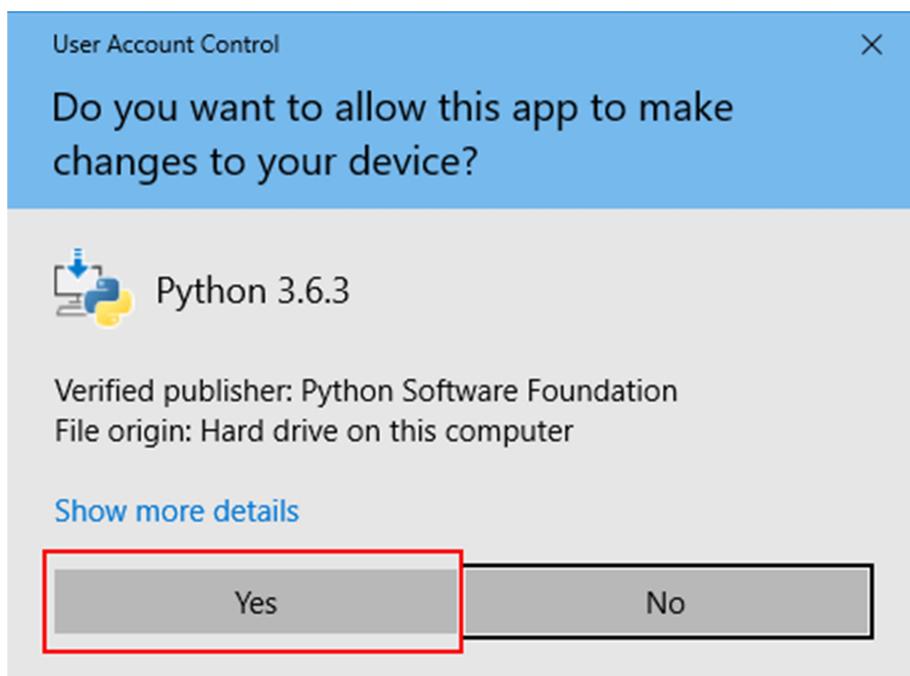
Next

Cancel

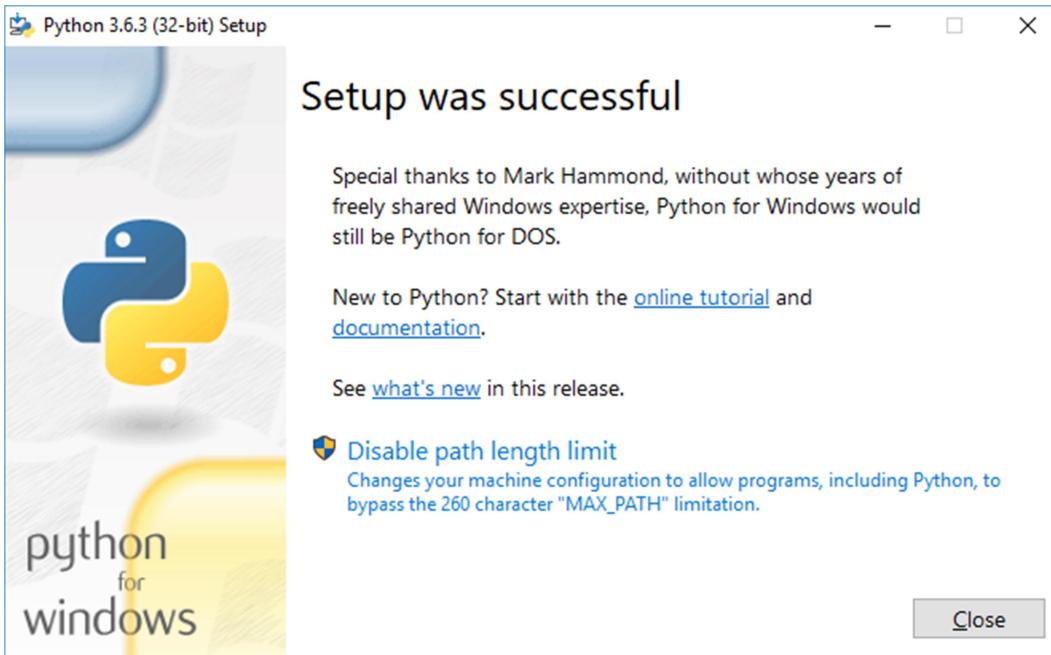
On the “Advanced Options” page check the “Install for all users” option and the “Add Python to environment variables” option as well and then click the “Install” button to start the installation.



Microsoft Windows will pop up a User Account Control dialog box (not shown) requesting your permission to install the application. You must click the "Yes" button to start the installer.



Once the installation is complete you should see the following "Setup was successful" page.

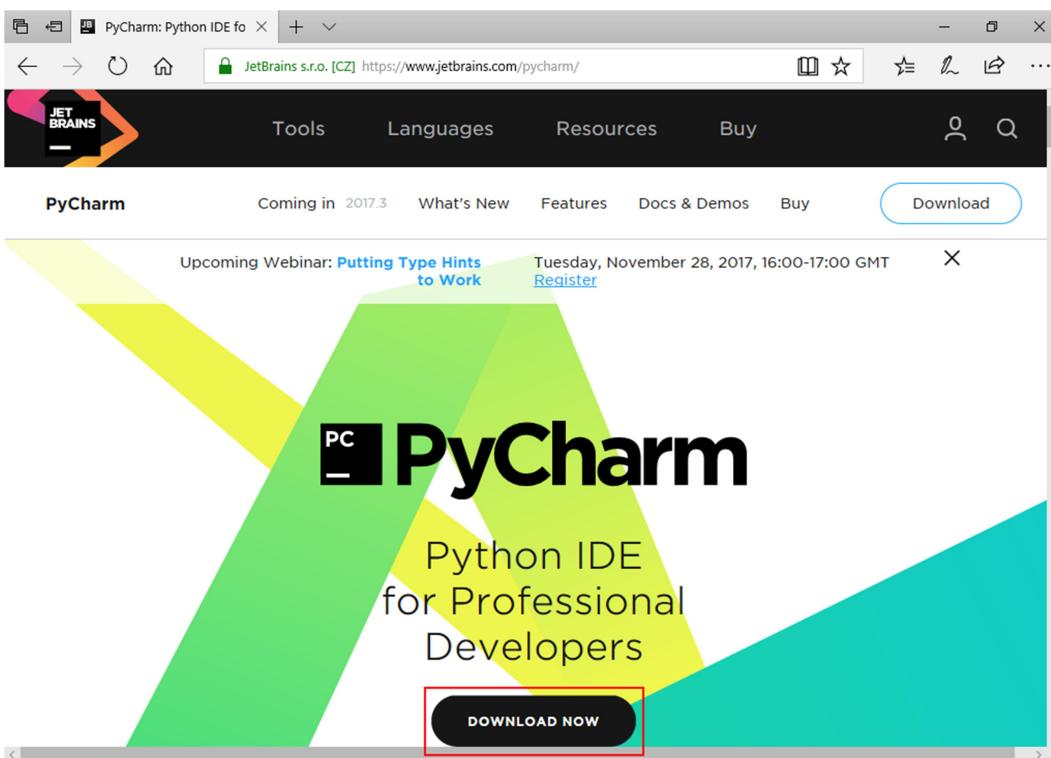


Python is now installed and so we'll next install the PyCharm Python editor.

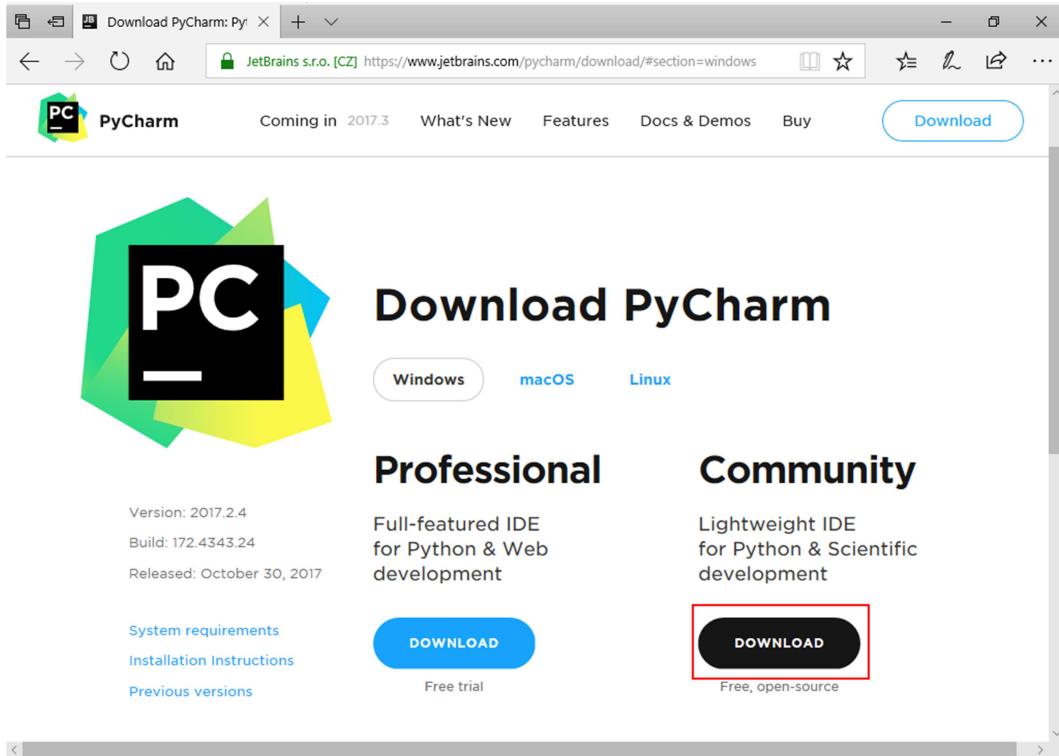
## Step 2. Install Jet Brain's PyCharm Community Edition

Go to <https://www.jetbrains.com/pycharm/>

On the Jet Brain's PyCharm web page click the "DOWNLOAD NOW" button.



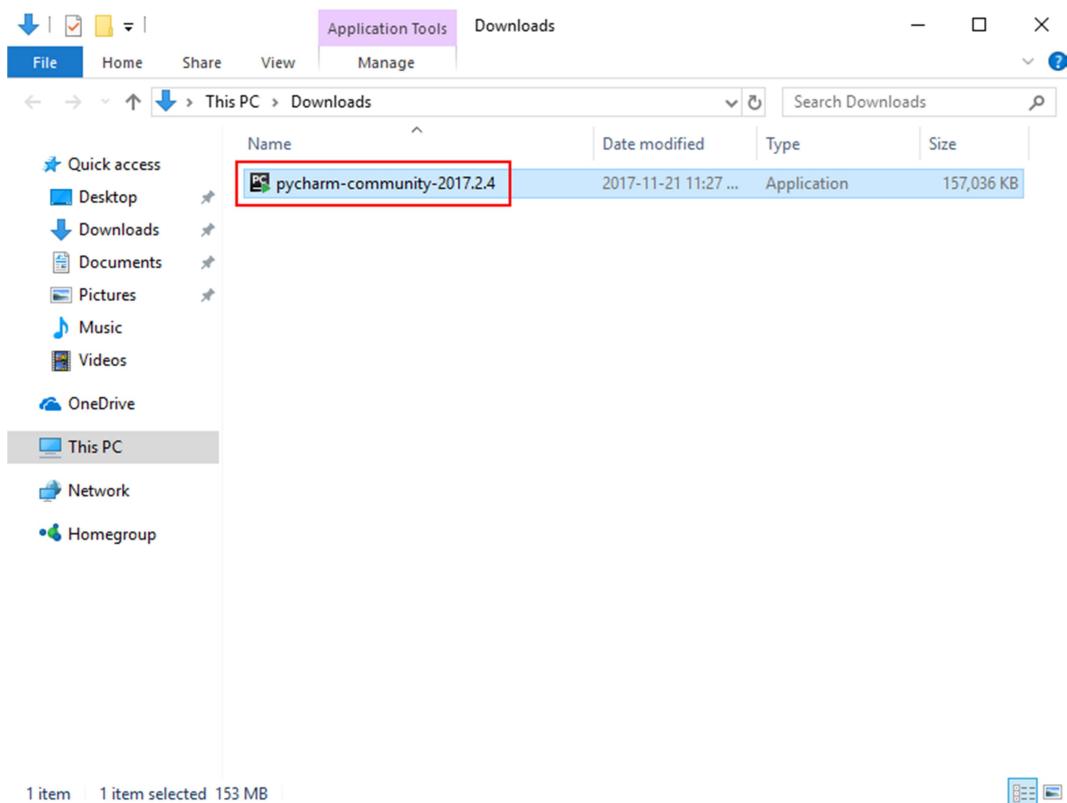
On the Download PyCharm web page click the “DOWNLOAD” button located under the Community column (this is for the free community edition of the editor).



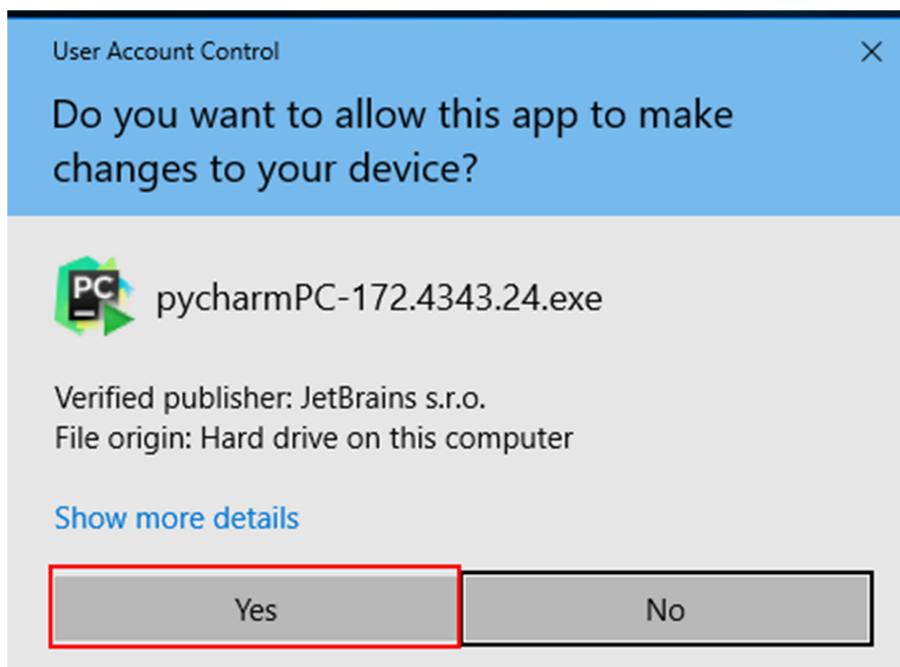
Once you click the “DOWNLOAD” button the download should start and the installation file should be placed in your “Downloads” folder.

Go to your “Downloads” directory by clicking the “View Downloads” or “Visit Folder” link or button (depending on which web browser you are using) and once you locate it you should see a file named something like “pycharm-community-2017.x.x”. The numbers following the “2017” in the filename will vary depending on what date you download the program and will soon be “2018”.

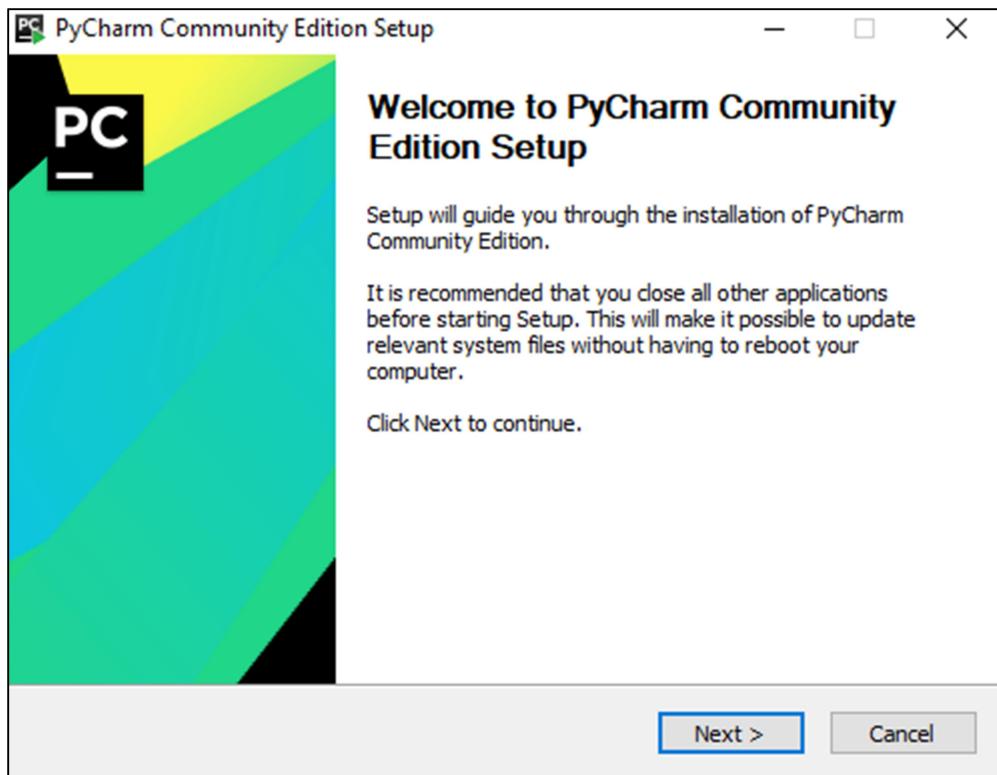
Once you locate the installation program double click on it to run it and start the installation.



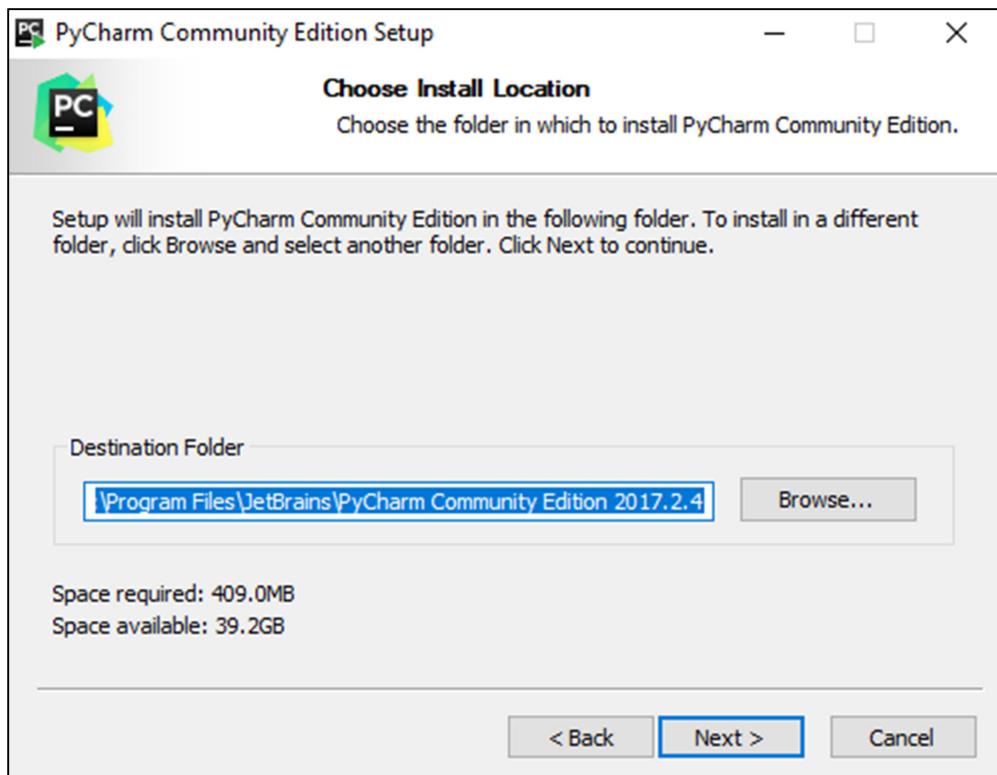
Once you click the PyCharm installation program Windows will pop up a User Account Control which requires you to click the “Yes” button to allow the installer to run.



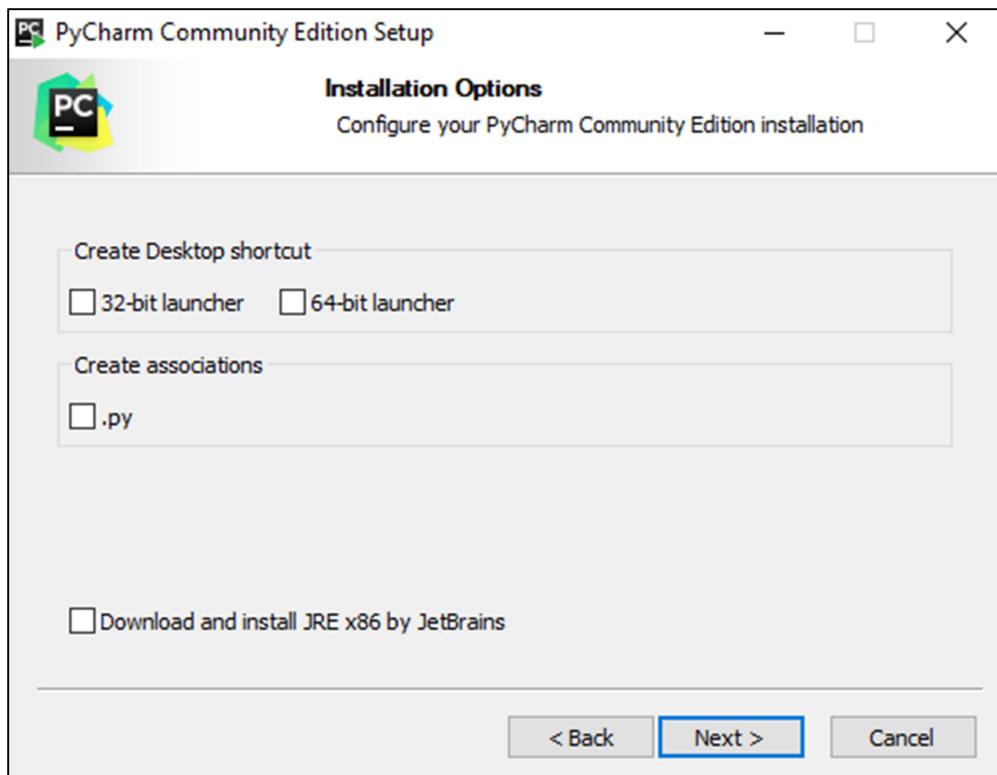
Once the installer starts click the “Next” button on the “Welcome to PyCharm Community Edition Setup” page.



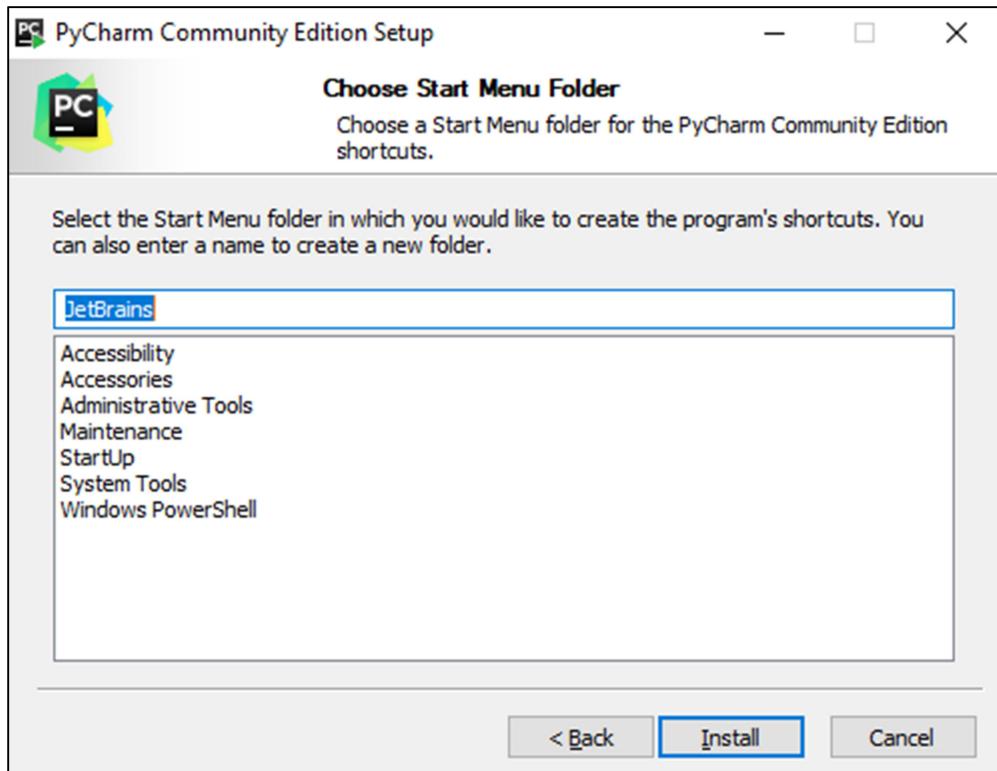
You can leave the default “Destination Folder” (unless you need or want it in a different directory) and simply click the “Next” button to continue.



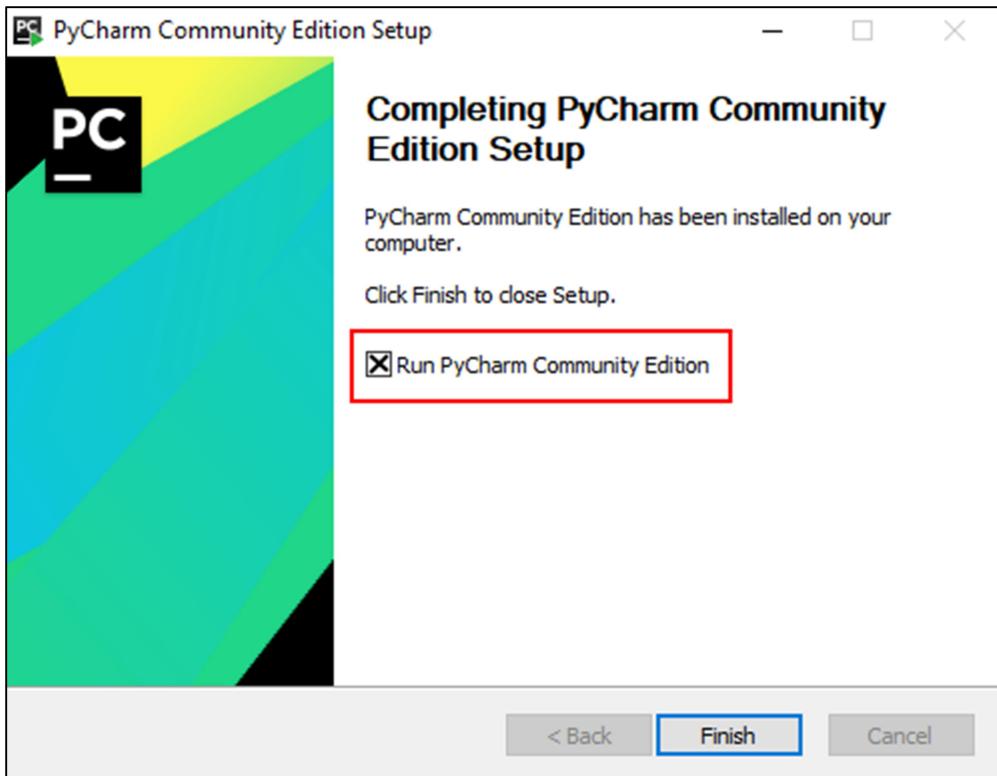
Nothing needs to be changed on the “Installation Options” page (you can choose any of these options if you wish as they won’t impact the program just how it is launched) so just click the “Next” button to continue.



For this installation on the “Choose Start Menu Folder” I have chosen to create a new “JetBrains” menu in the Windows start menu and thus will leave the default and start the installer by clicking the “Install” button.



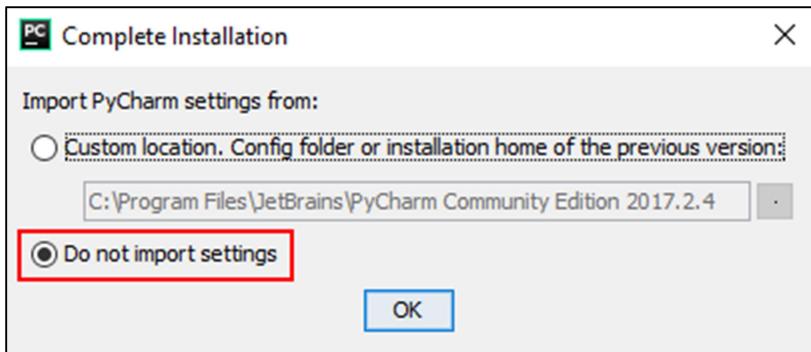
Once the installation is complete you should see a “Completing PyCharm Community Edition Setup” page. Check the “Run PyCharm Community Edition” checkbox to start PyCharm and then click the “Finish” button.



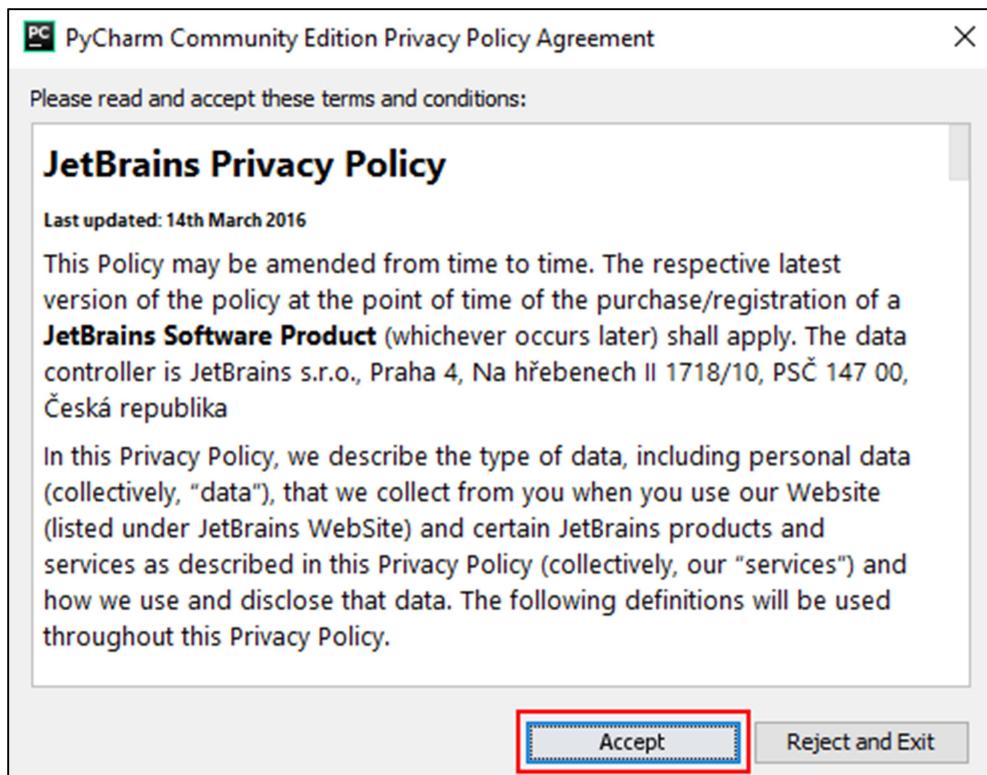
Once the installation is complete we will run PyCharm for the first time to set up the environment and write and run a quick test program to ensure everything is working and then we'll install pygame to complete this guide.

Because we checked the "Run PyCharm Community Edition" checkbox PyCharm will launch and present the following first-time configuration options.

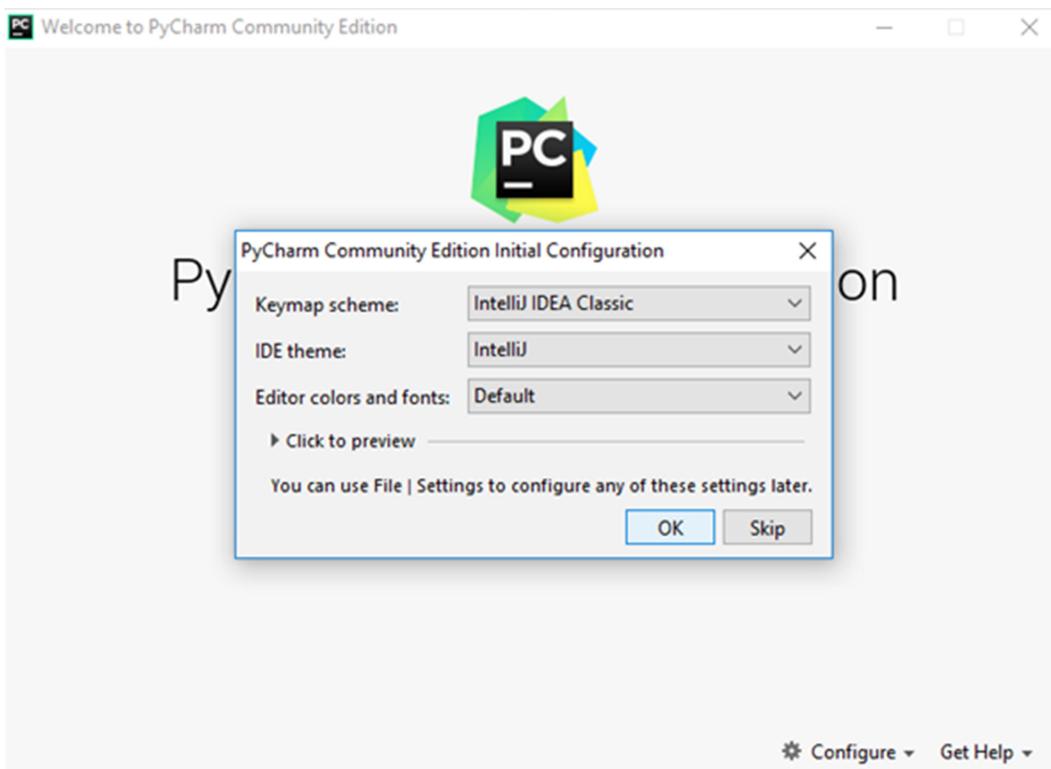
For the first option we can leave the "Do not import settings" radio button selected and click the "OK" button to continue.



Next you will be presented with the privacy policy which you should review and then click the "Accept" button to continue.

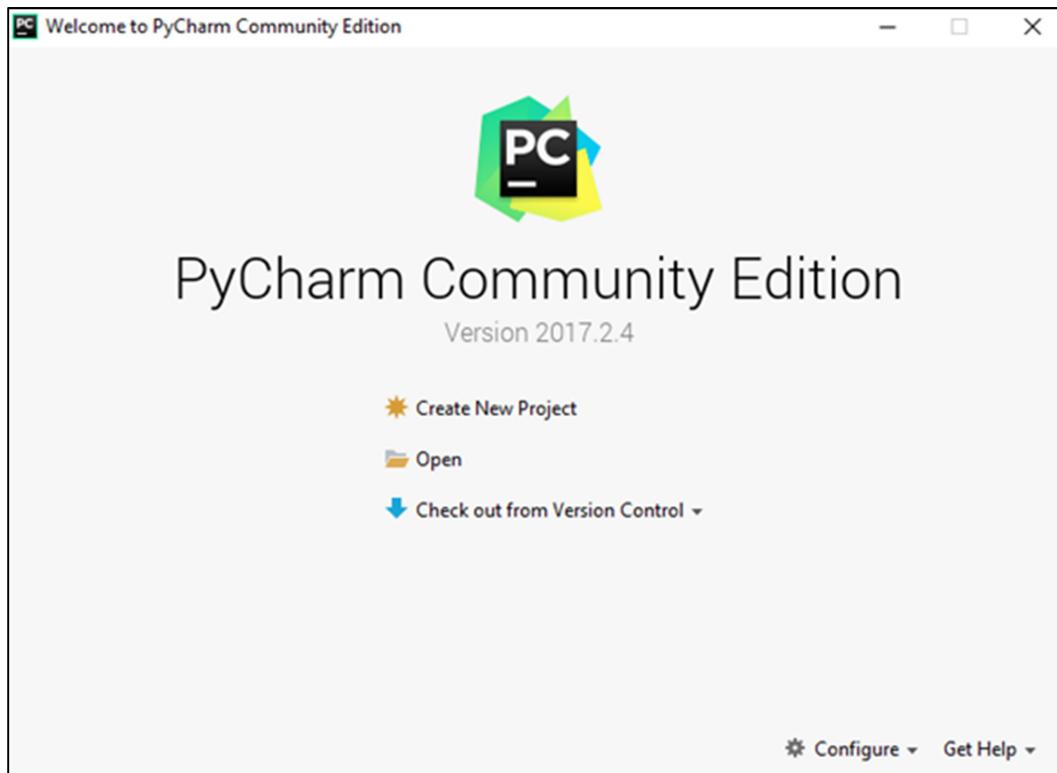


After accepting the privacy notice PyCharm will ask you to select your initial application configuration settings. We will stick with the default settings shown below but you are welcome to change these if you wish. Click the “OK” button to continue to PyCharm.

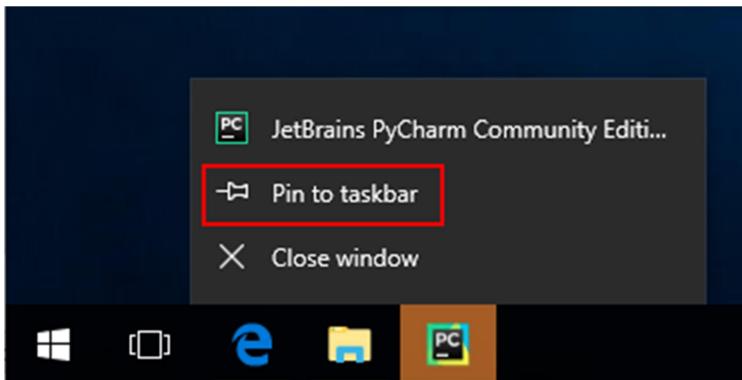


The PyCharm Community Edition main page will appear and before we start using the editor I would suggest, and this is optional, that we pin PyCharm to the Windows Taskbar to make it easier to launch each time. If you choose not to do

this you can always find PyCharm under the “JetBrains” folder in the Windows start menu or you can press the Windows start button and type “pyc” to find PyCharm and click to run it there.



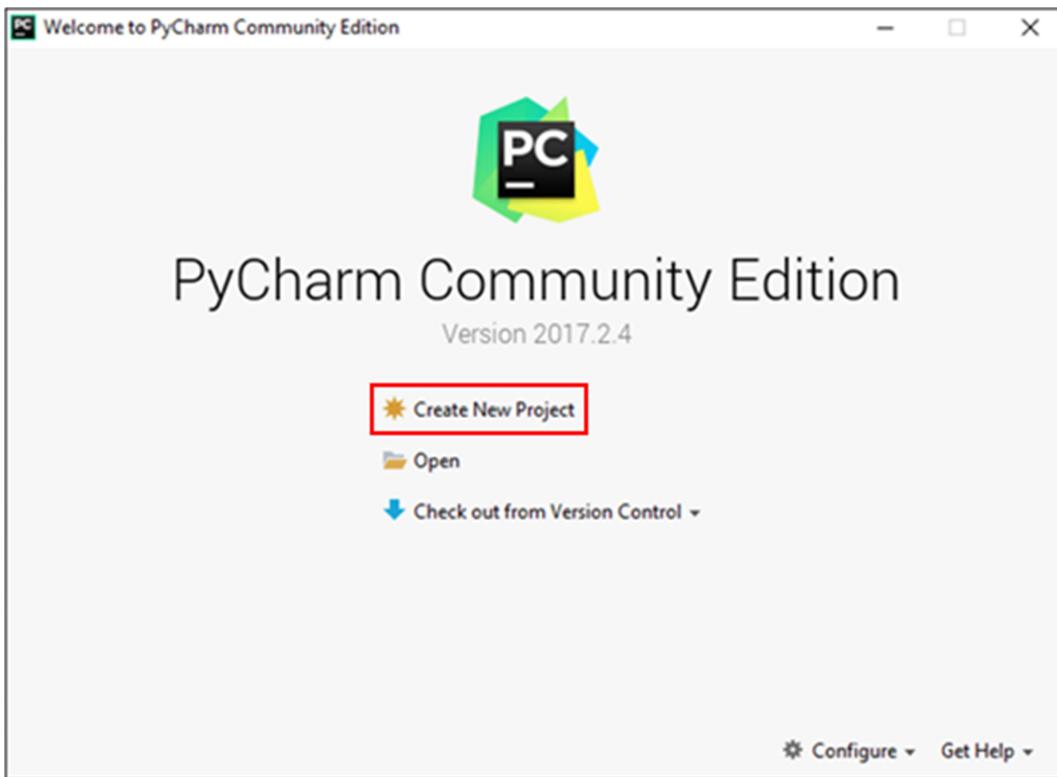
To pin it to the Taskbar start by right-clicking the “PC” (PyCharm) icon on the Taskbar and then left-clicking the “Pin to taskbar” option, as shown below.



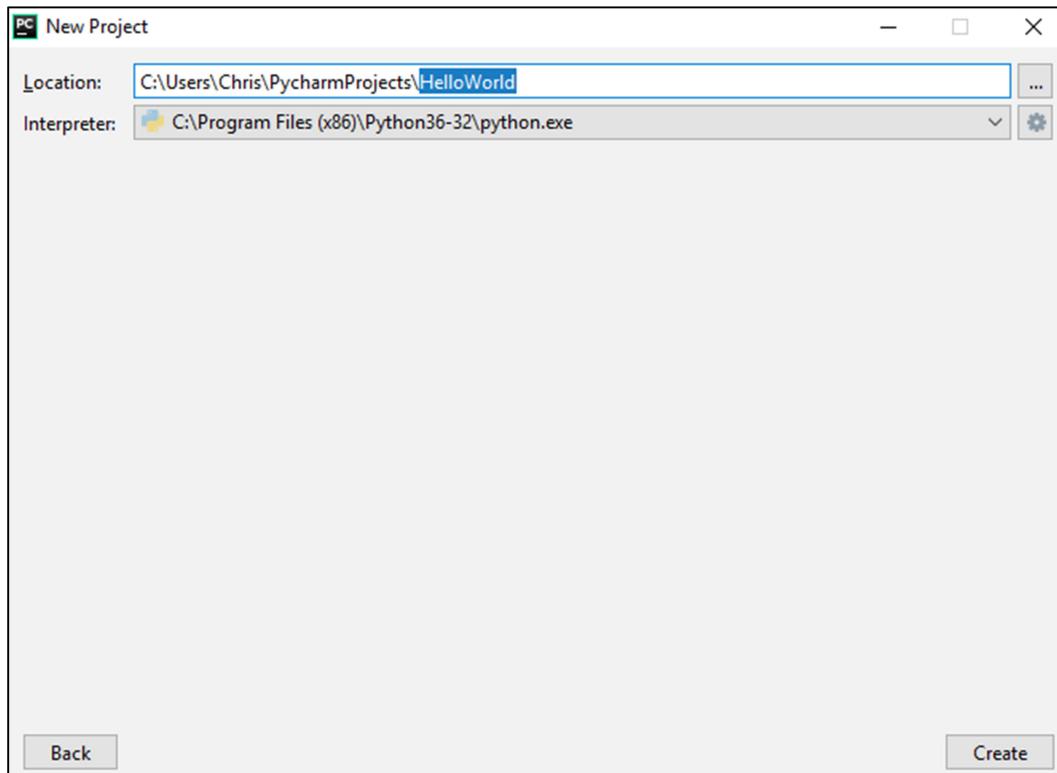
### Step 3: First Test Program (Hello World)

Now that we have Python and PyCharm installed we will write a very simple single line program in PyCharm to help us configure the editor and ensure that Python is working as expected.

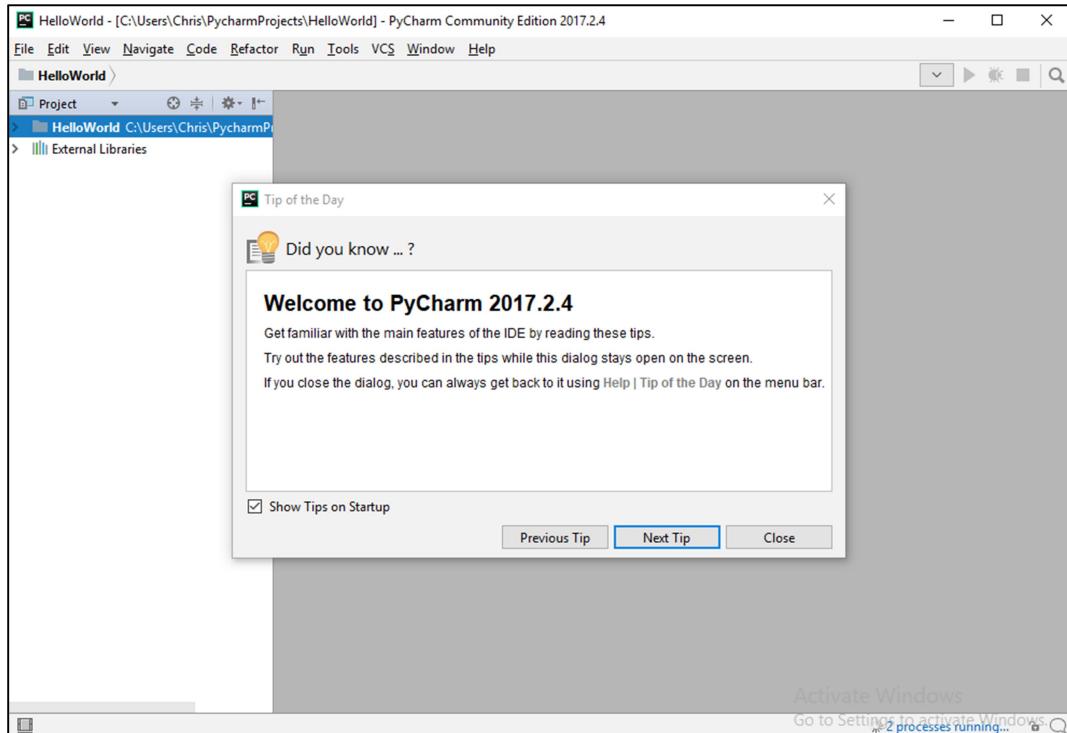
Since this is our first time using PyCharm it will ask if we wish to create a new project, open an existing project or check out a project from version control. We will start by choosing “Create New Project” as we will (and this is optional but recommended) create a simple Python “hello world” project to verify that the editor is working as expected.



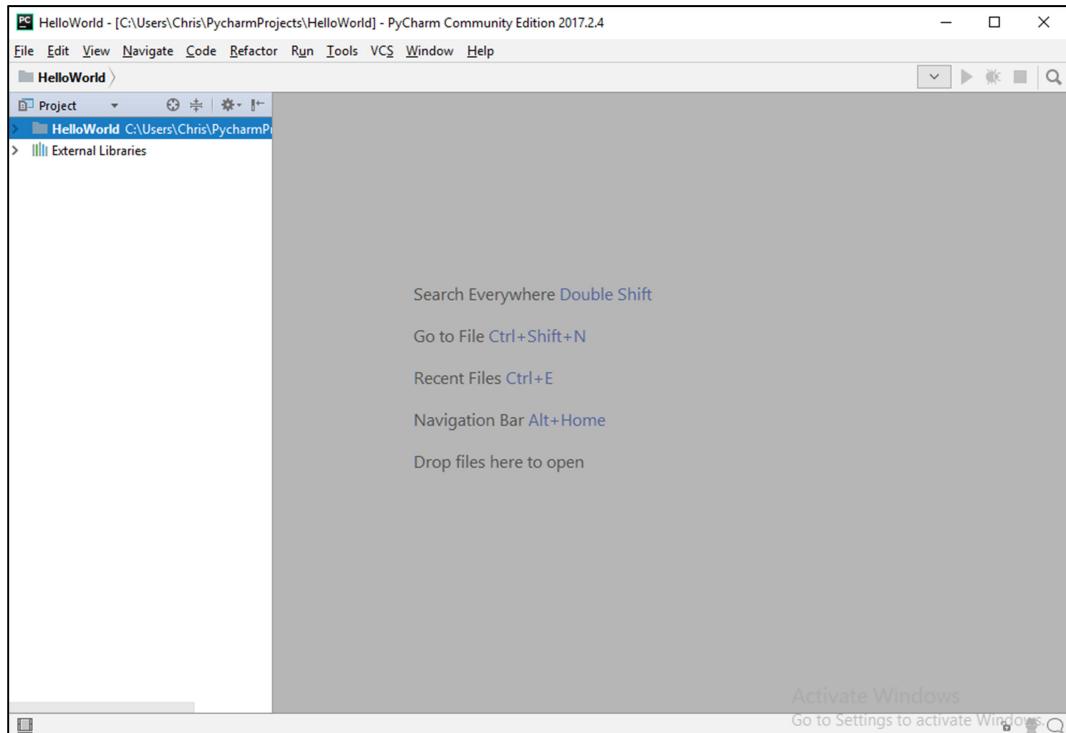
We will call this project “HelloWorld” as shown below and then click the “Create” button. Note that since this is my computer the full path has “Chris” in the name but your computer will most likely have a different name in the “Location”. You only need to add the “HelloWorld” to the end of the Location and do not need to copy the whole path exactly as is shown below.



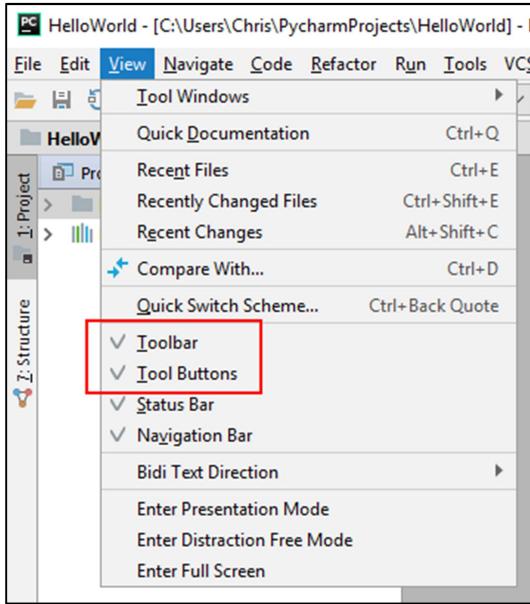
After clicking “Create” PyCharm will create the new HelloWorld project and start the main PyCharm editor. The first time the editor runs it will display a “Tip of the Day” dialog, as shown below and you can click “Close” to close it but if you don’t want it to return again you can uncheck the “Show Tips on Startup” checkbox first.



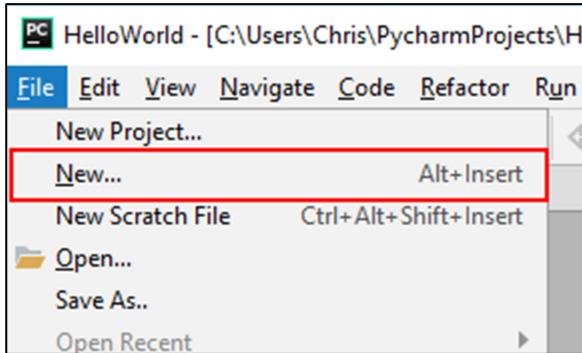
Once you close the “Tip of the Day” dialog box you will be presented with a blank PyCharm and before we start programming I would suggest making a few setting changes.



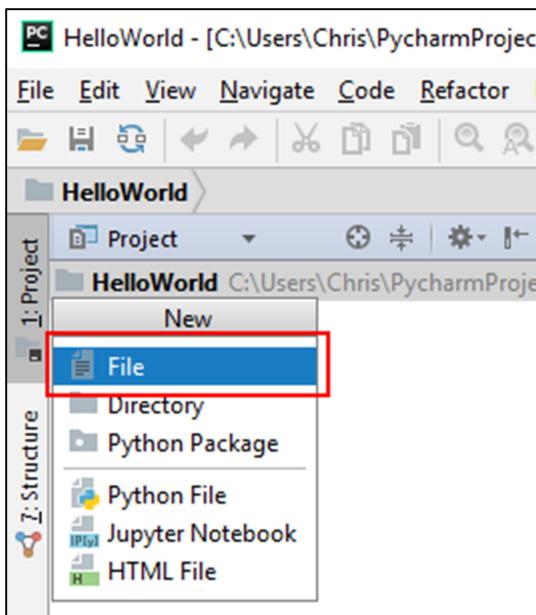
First click the “View” menu and select the “Toolbar” and “Tool Buttons” options so they are checked. These will add the toolbar with the green run button that we will use to run our programs.



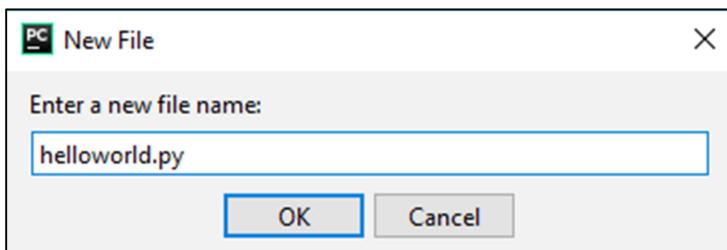
Now that our editor is ready let's create a simple “Hello World” program to verify that Python is installed and working. Start by selecting “New...” from the “File” menu.



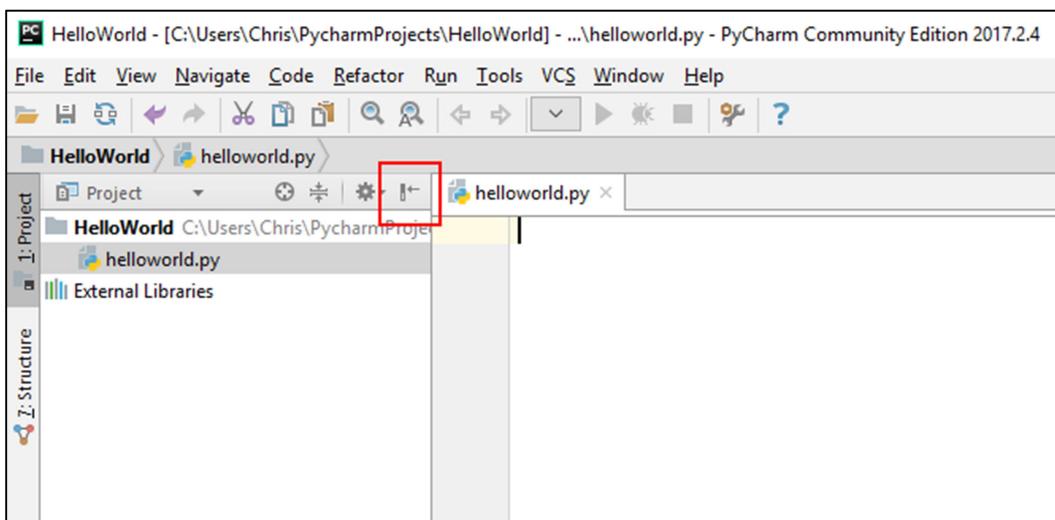
This will cause a small “New” window to appear and within this little pop up window you want to click the “File” option (highlighted in red below).



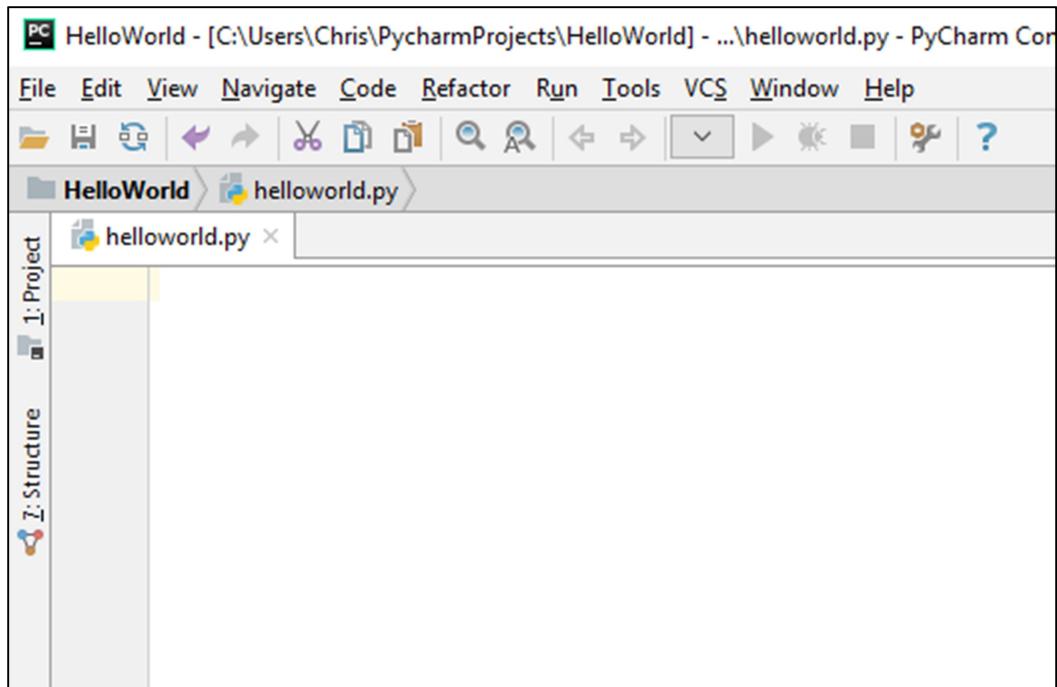
Once you click the new file option from the pop up menu a “New File” dialog will appear and ask you to enter a new file name. Enter “helloworld.py” (note: no spaces and all lower case), as shown below and click the “OK” button to create the new file.



The new file will appear in the right side of the editor with the title “helloworld.py” and the left side will have the project files and “External Libraries”. You can collapse the left side by clicking the icon highlighted below with the arrow pointing to the left.

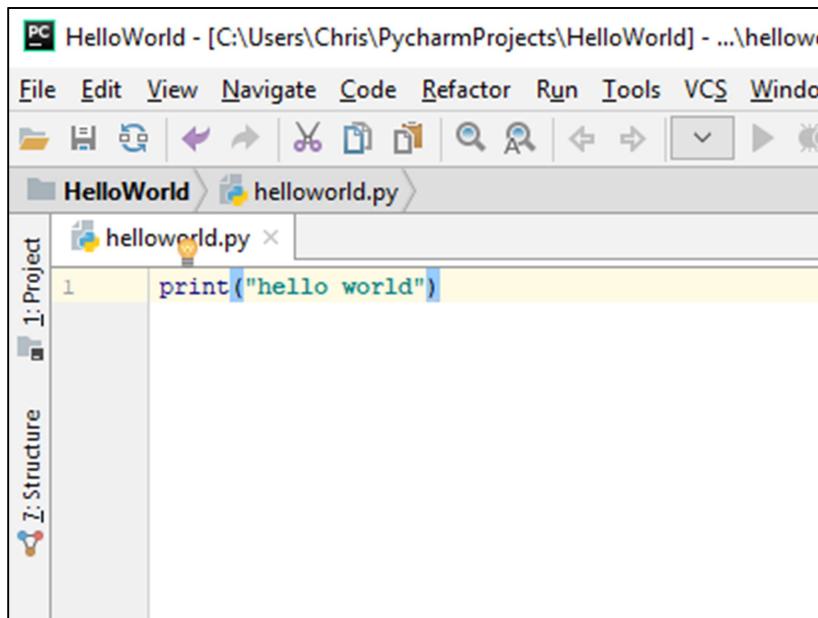


Okay, now our editor is ready – you should have a blank “helloworld.py” just like below.

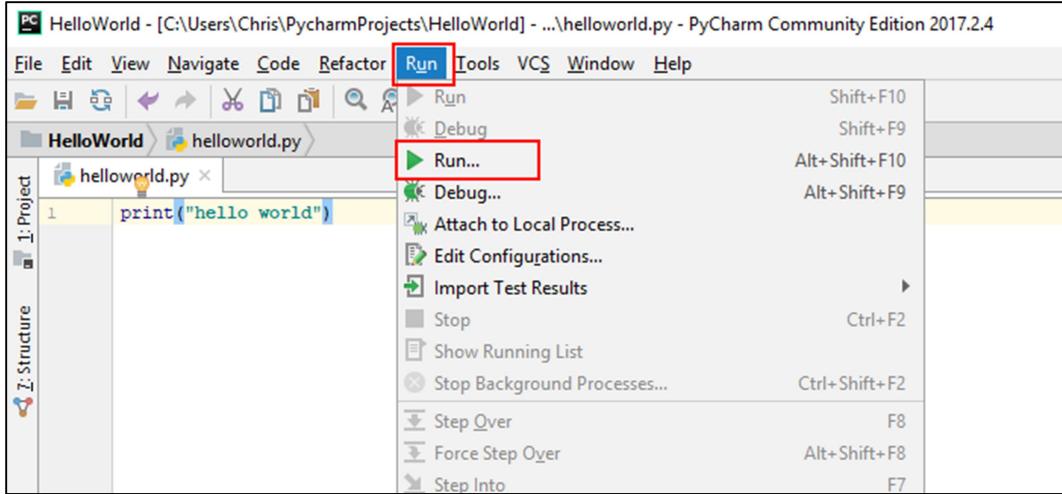


Our test program is a single print statement:

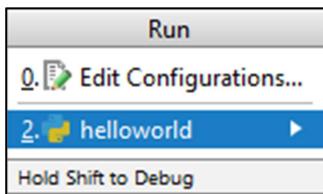
```
print("hello world")
```



Yes, you are welcome to change the text from hello world to whatever you want. Once you have this line input into the editor click the “Run” menu and choose the “Run...” menu option.



The first time you try and run helloworld.py a small “Run” menu will appear and “helloworld” will be selected as shown below. Click the selected “helloworld” project to run the new helloworld.py script.



If everything is configured and your print-statement is valid you should see your text, “hello world” in the example below, displayed in the output window at the bottom of the PyCharm editor. If this is what you see then Python 3 is working and PyCharm is configured correctly as well – good job.

The screenshot shows the PyCharm interface. The top bar displays the project name "HelloWorld" and the file "helloworld.py". The toolbar includes standard icons for file operations like Open, Save, and Find. The main window has a "Project" view on the left showing the file "helloworld.py". The code editor shows the single line of code: `print("hello world")`. The bottom panel is the "Run" tool window, which shows the command being run: `"C:\Program Files (x86)\Python36-32\python.exe" C:/Users/Chris/PycharmProjects/HelloWorld/helloworld.py`. The output pane displays the result: `hello world`, indicating the program has run successfully.

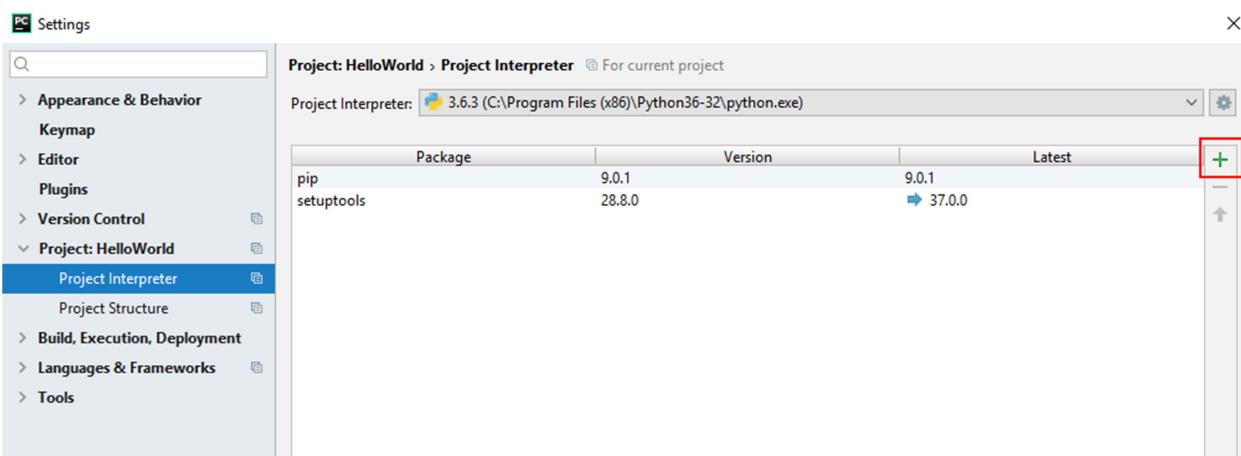
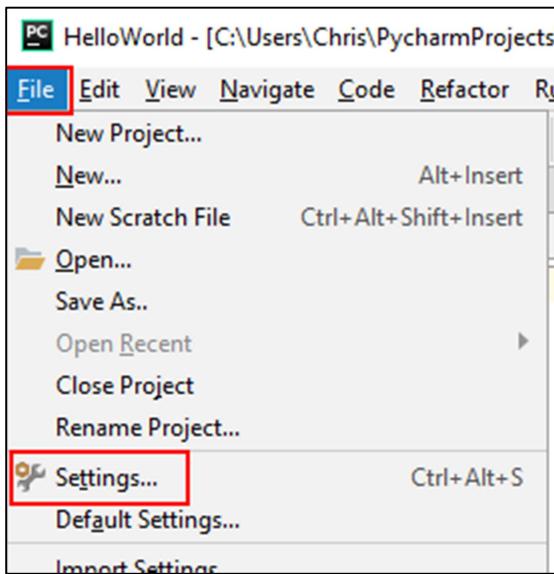
Note that once you have run your `helloworld.py` program the first time and told PyCharm what to run you can press the green “run arrow” in the toolbar any time you want to run the script again.

This screenshot is identical to the one above, showing the PyCharm interface with the "HelloWorld" project and the "helloworld.py" file containing the print statement. The difference is that the green "run arrow" icon in the toolbar has been highlighted with a red box, drawing attention to it as the key indicator for running the script again.

## Step 4: Installing pygame using PyCharm

Now that we have Python 3 and PyCharm installed, configured and verified we will install the pygame Python library so we can make some games!

Start by opening PyCharm, if it's not already open, and click the "File" menu option and choose the "Settings" option, as shown in red below.



Available Packages

Q pygame

Category	Name
JSTPyGame	JSTPyGame
Pygame	Pygame
PygameGUICLib	PygameGUICLib
SimpleGUICS2Pygame	SimpleGUICS2Pygame
pygame-anisprite	pygame-anisprite
pygame-assets	pygame-assets
pygame-music-grid	pygame-music-grid
pygame_camera	pygame_camera
pygame_cffi	pygame_cffi
pygame_fpak	pygame_fpak
pygame_loaders	pygame_loaders
pygame_sdl2	pygame_sdl2
pygame_toolbox	pygame_toolbox
pygame_vkeyboard	pygame_vkeyboard
pygameday	pygameday
pygameoflife	pygameoflife
pygammess	pygammess
pygametemplate	pygametemplate
pygametmp	pygametmp
pygameui	pygameui
pygameweb	pygameweb
pyviewx.pygame	pyviewx.pygame
sge-pygame	sge-pygame
spygame	spygame
vext.pygame	vext.pygame
wxPyGameVideoPlayer	wxPyGameVideoPlayer

Description

Python Game Development

Version

1.9.3

Author

Pete Shinners, Rene Dudfield, Marcus von Appen, Bob Pendleton, others...

<mailto:pygame@seul.org>  
<http://www.pygame.org>

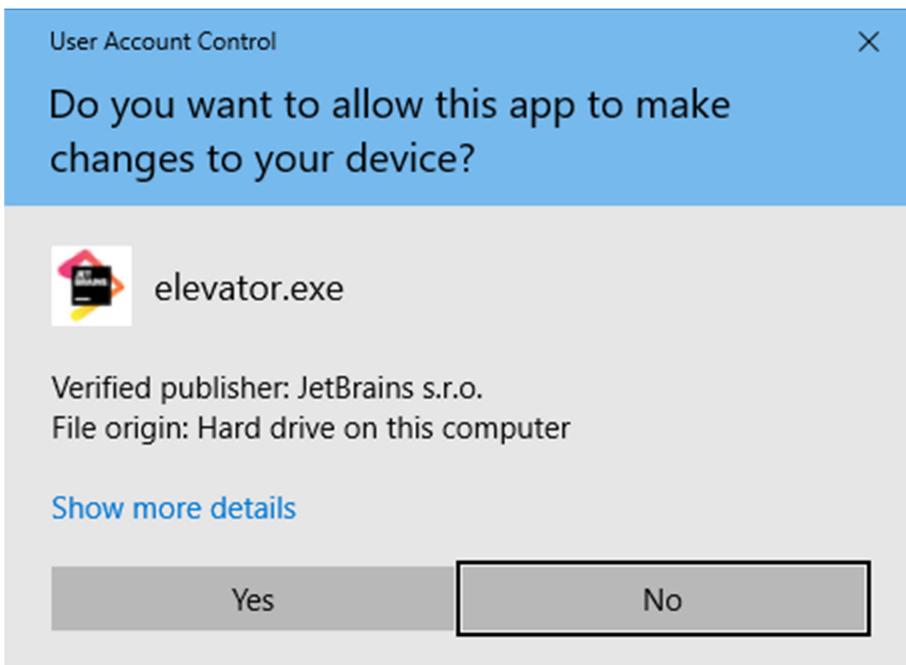
Specify version 1.9.3

Options

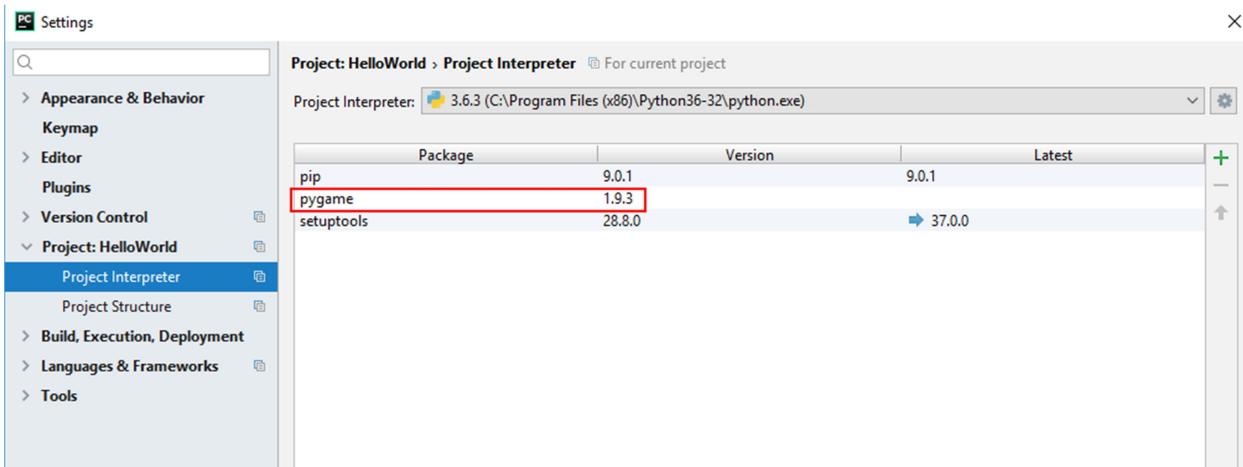
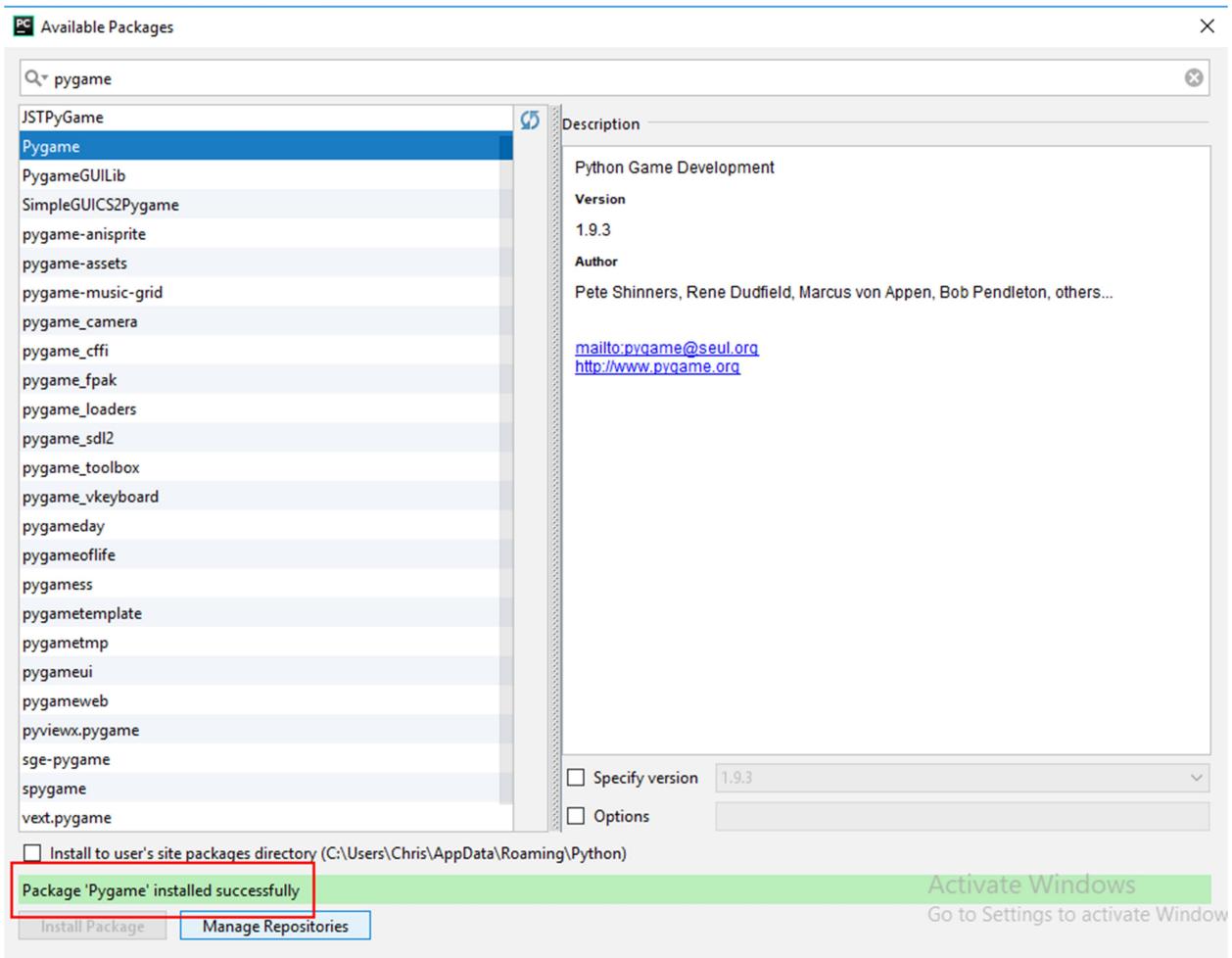
Install to user's site packages directory (C:\Users\Chris\AppData\Roaming\Python)

Activate Windows  
Go to Settings to activate Window

Install Package Manage Repositories



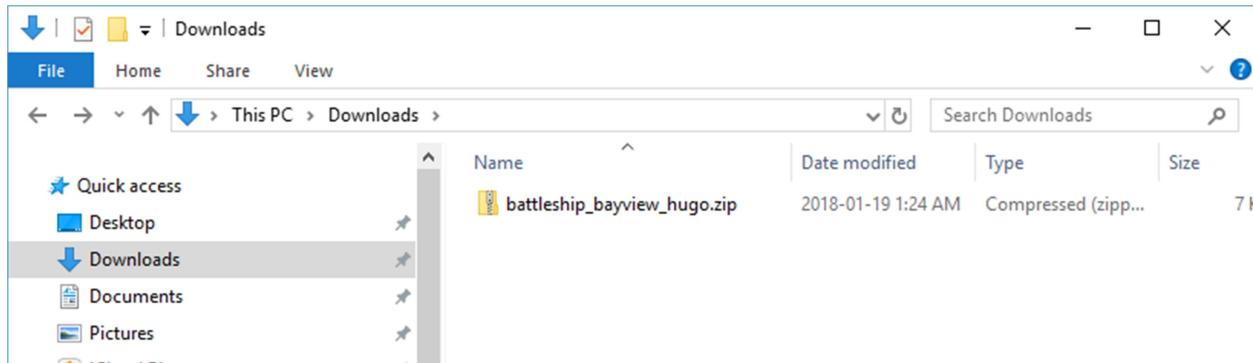
... wait for the installing message and spinner to finish...



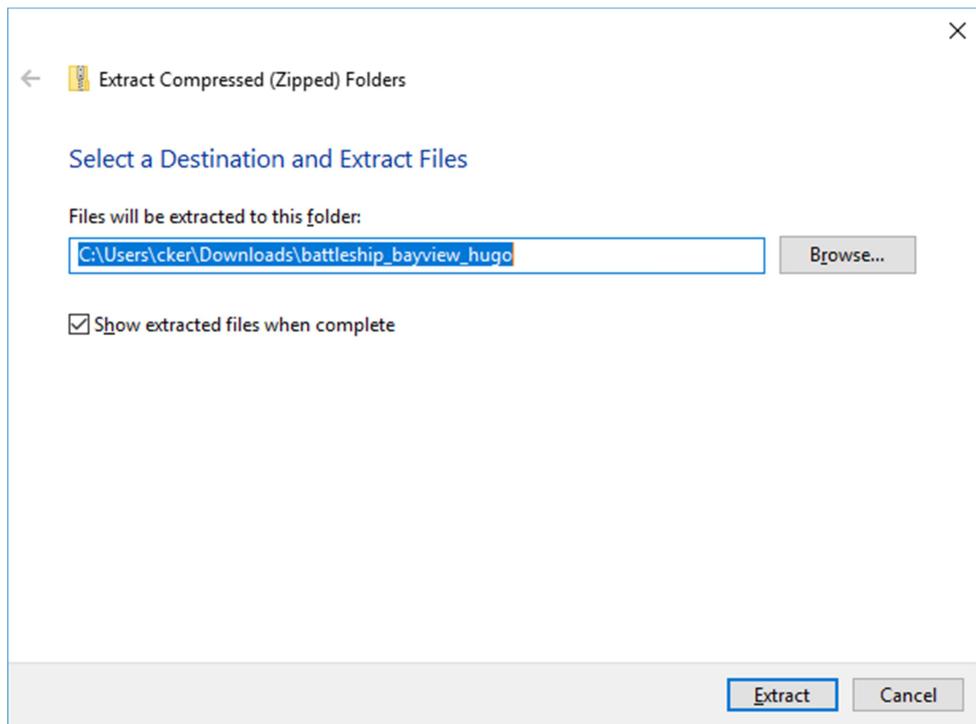
## Step 4 Download your Python project from XModus.com

Once you have Python and PyCharm installed you can download your Python project from my class. For Battleship (Fall 2017) go to [www.xmodus.com/programs-python-fall-2017.html](http://www.xmodus.com/programs-python-fall-2017.html) and locate your project file. Each project is named something like “battleship\_bayview\_hugo.zip” – replace “bayview” with your school name and “hugo” with your own name, unless you are Hugo from Bayview.

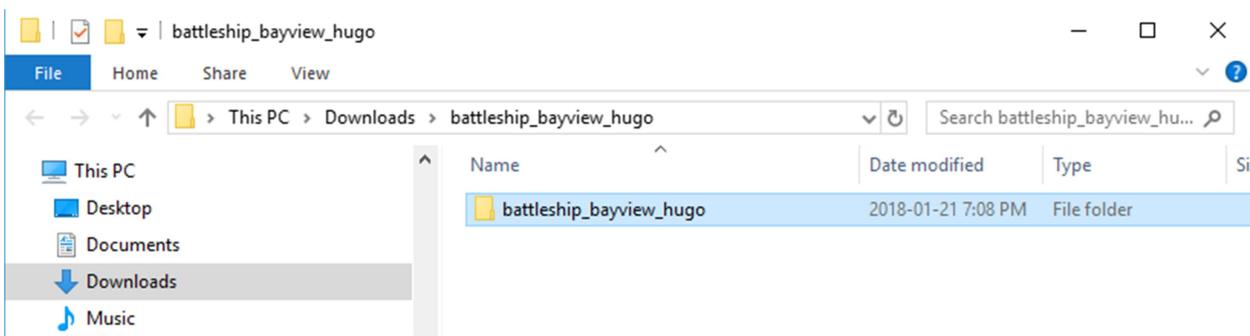
After you download your project open Explorer, go to the Downloads folder and locate your new zip file. Double-click your zip file to unzip it into the Downloads folder.



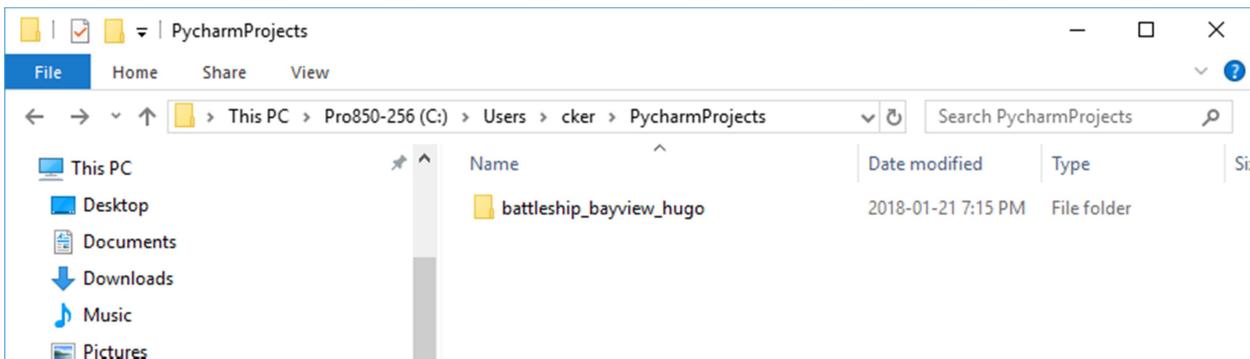
Right click on the download and choose “Extract All...”



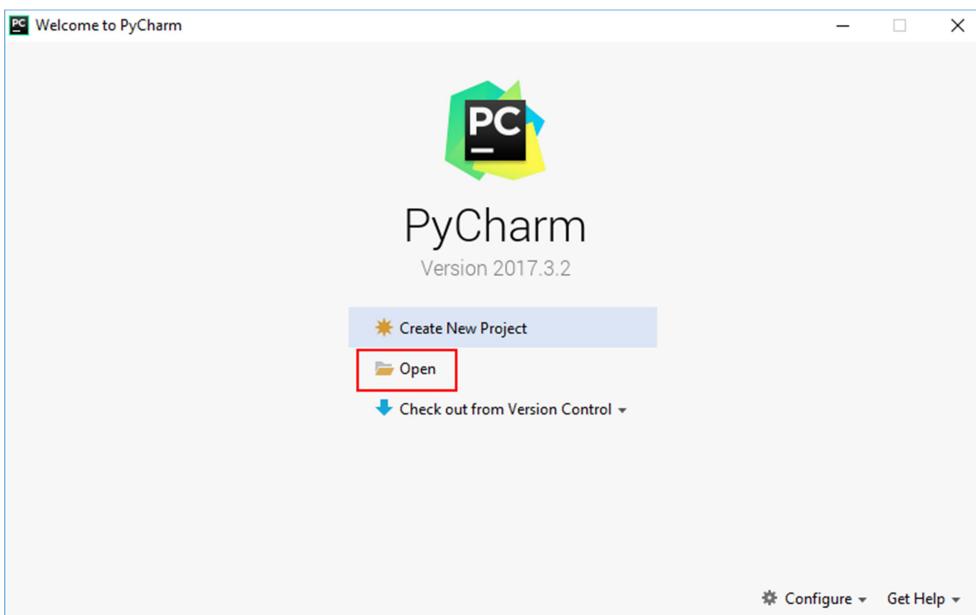
Click the Extract button to extract your project to the Downloads folder. When the project is finished you can copy the file into the PyCharmProjects folder by doing the following:



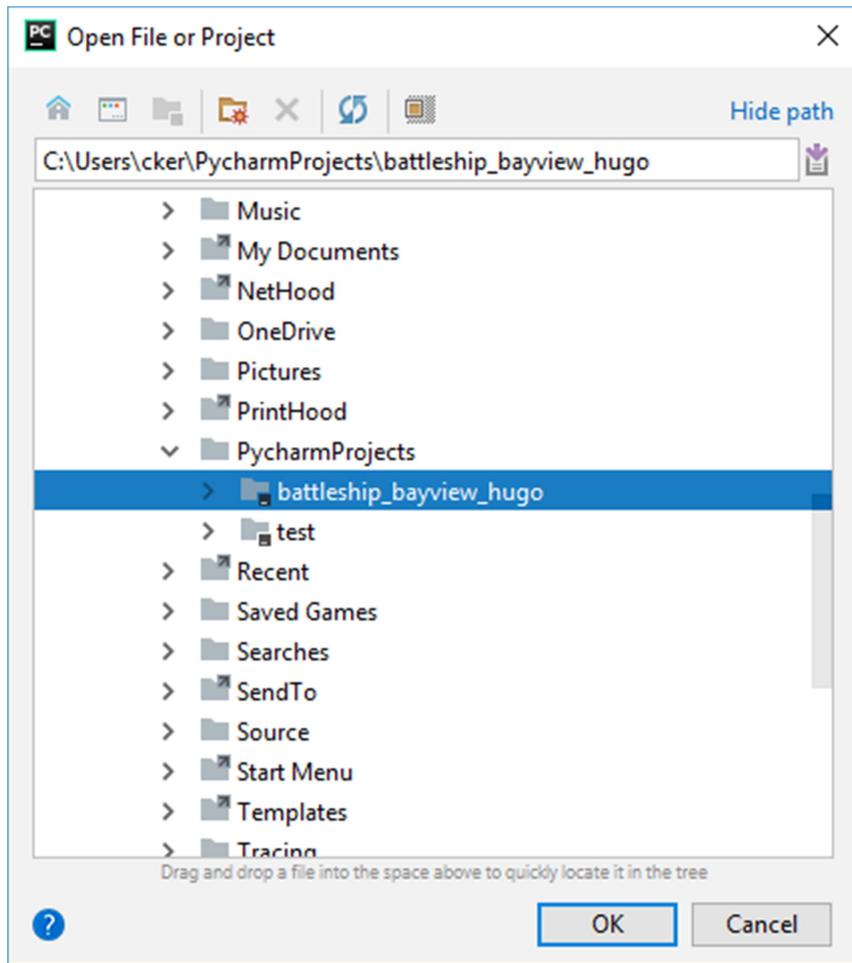
Left click on the extracted folder and then press **Ctrl+C** to copy the project. Now press **Ctrl+L** and type in **c:\users** and press enter. When your Users folder appears double click on your user name and then scroll down until you find the folder “PycharmProjects” and double-click it to open the folder. Now press **Ctrl+V** to paste your downloaded and extracted Python project. If nothing happens return to your downloads folder, find your extracted project, select it, press **Ctrl+C** and then return to your PycharmProjects folder and paste in your project. At the end it should look like this:



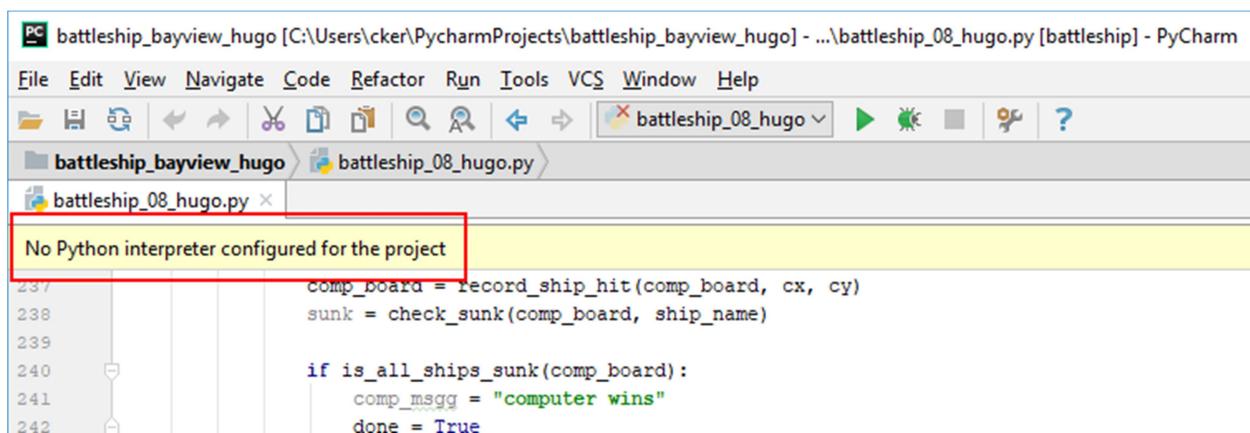
Once you have your project copied to your PycharmsProjects folder (as shown above) return to PyCharm so we can open the project the first time (after the first time your project will open each time automatically when you start PyCharm).



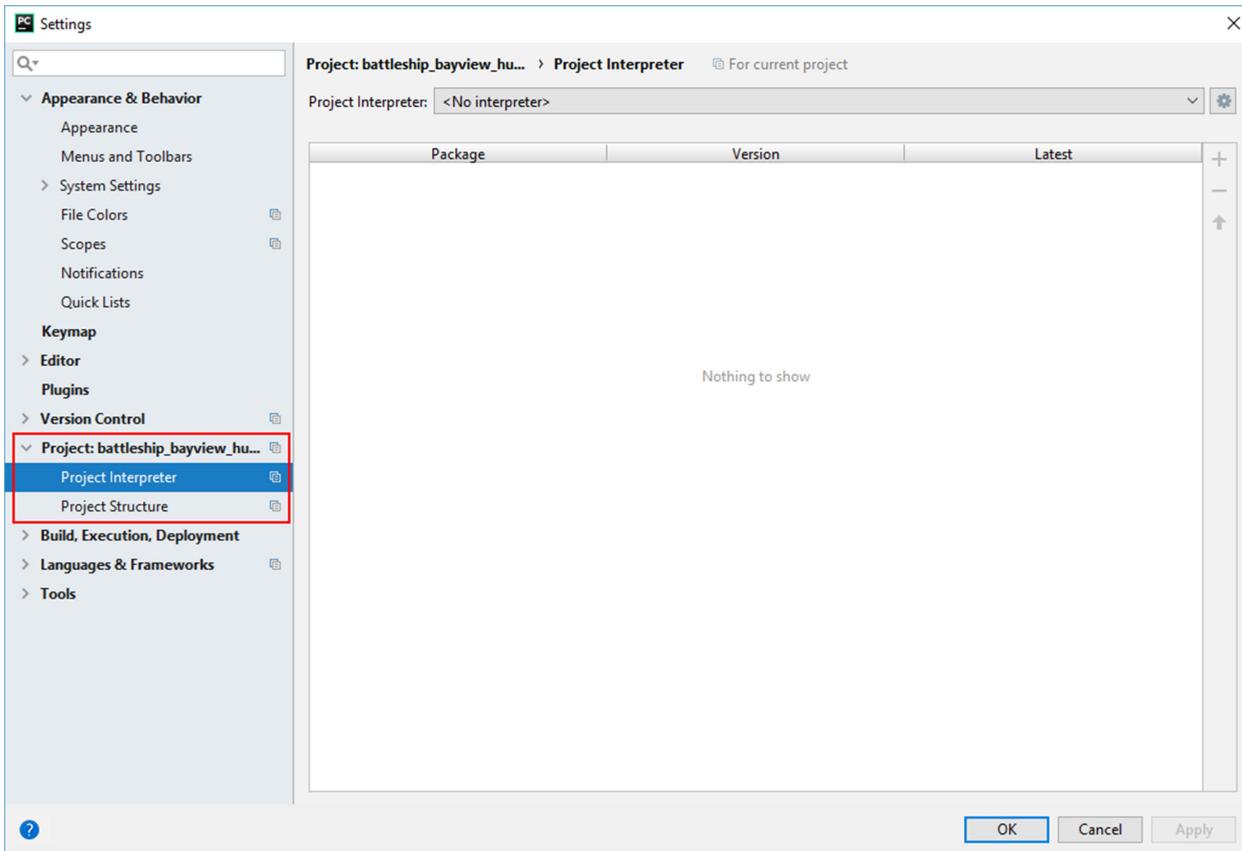
Navigate to your PyCharm projects folder, find your project folder (battleship\_bayview\_hugo in my example below), click on the folder and then click the Open button to open the project.



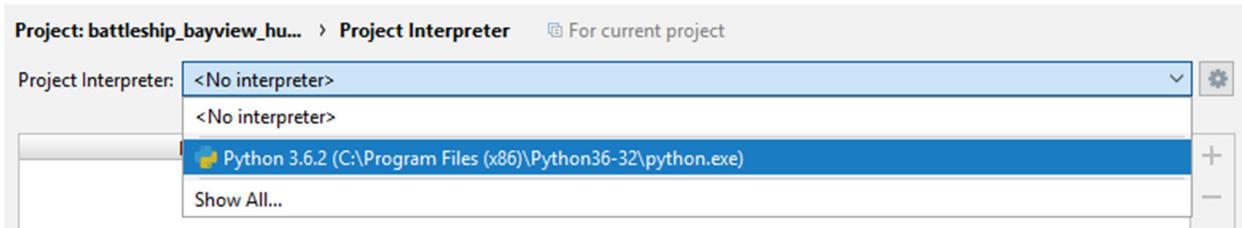
PyCharm will open your project and then after a few seconds (or more depending on how quick or slow your PC is) you will see a yellow notice from PyCharm telling you, "No Python interpreter configured for the project". You just need to tell the project where to find Python on your PC.



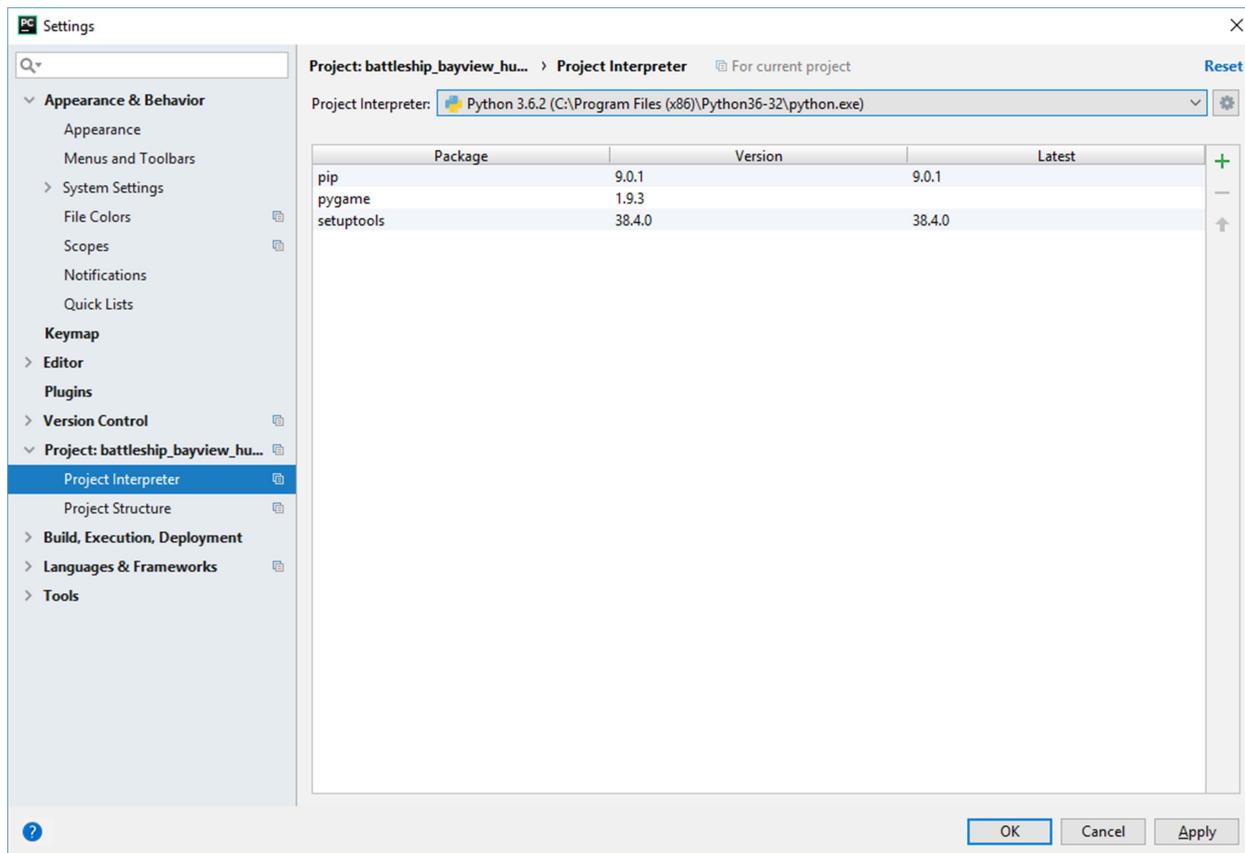
To locate and fix the missing Python interpreter click on the File menu option and select Settings... to open the Settings window, as shown below. Once the preferences window appears select the Project on the left and then select the Project Interpreter option as shown in red below.



On the Preferences window click on the <No interpreter> text at the top of the window to drop down a list of available interpreters and click on the Python 3.6 .exe file.



After you select the Python 3.6 interpreter you should see three packages and most importantly you should see "pygame" version 1.9.3 in the list. Click the OK button to close the Preferences window.



Finally, let's verify that everything is configured and our project is working by either clicking the green run arrow or clicking on the Run menu item and choose "Run 'battleship\_...'" are the top of the list.