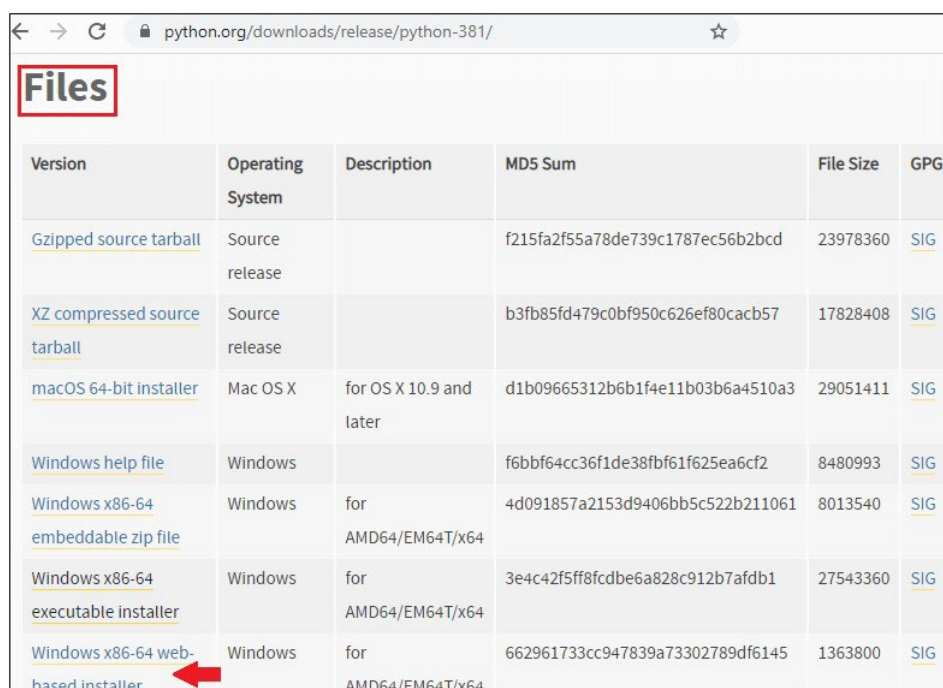


- The **Python-3.8.1** version window will appear on the screen, then scroll the page little-bit and find the **File** section, and the click on the **Windows x86-64 web-based installer** link for the Windows operating system as we can see in the below screenshot:

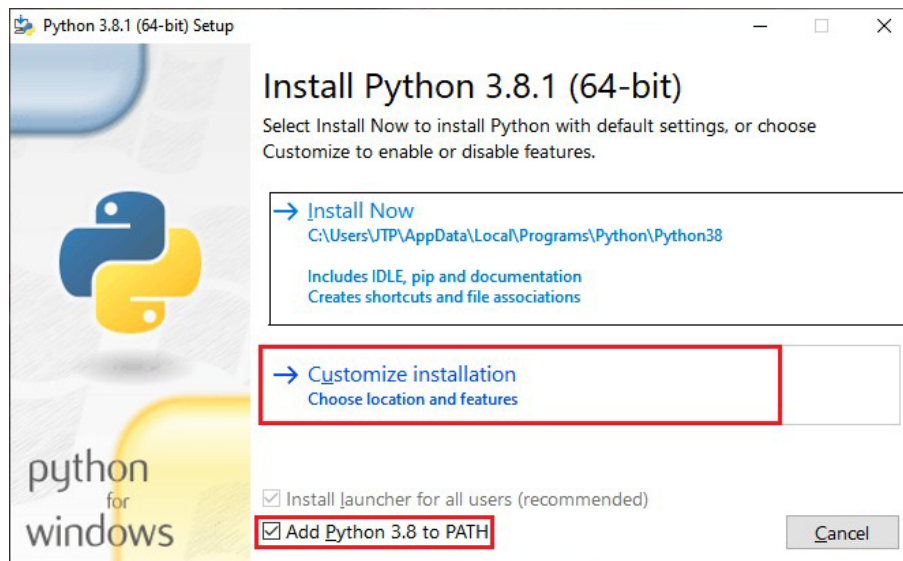


Install the Python

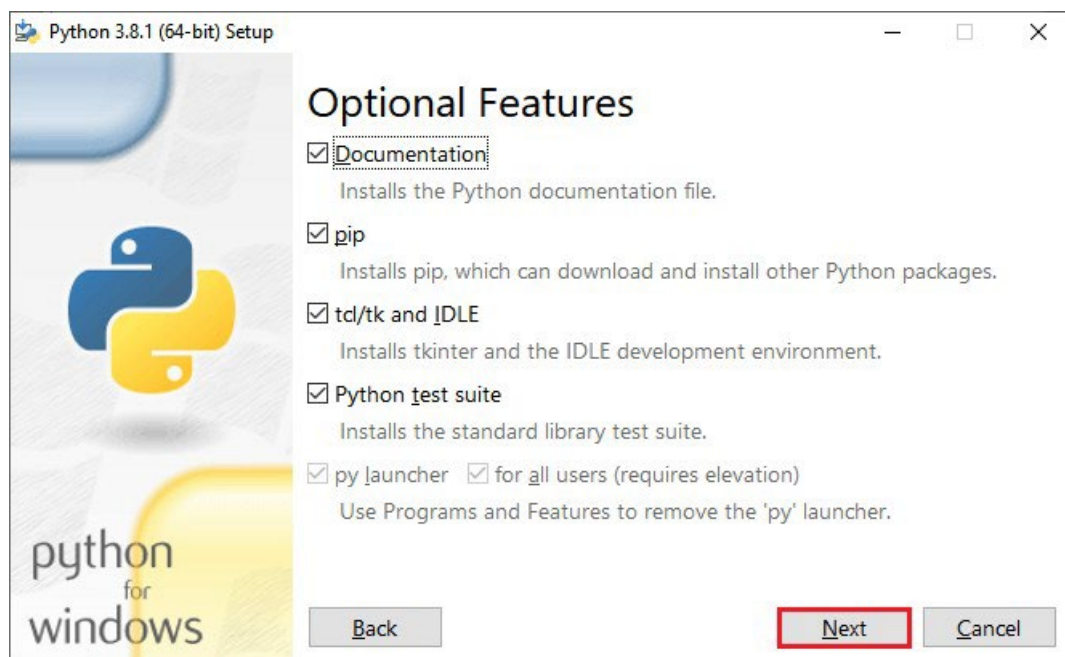
After downloading the Python for **Windows-64 bit**, we will be ready to install the Python.

To install the Python, follow the below process:

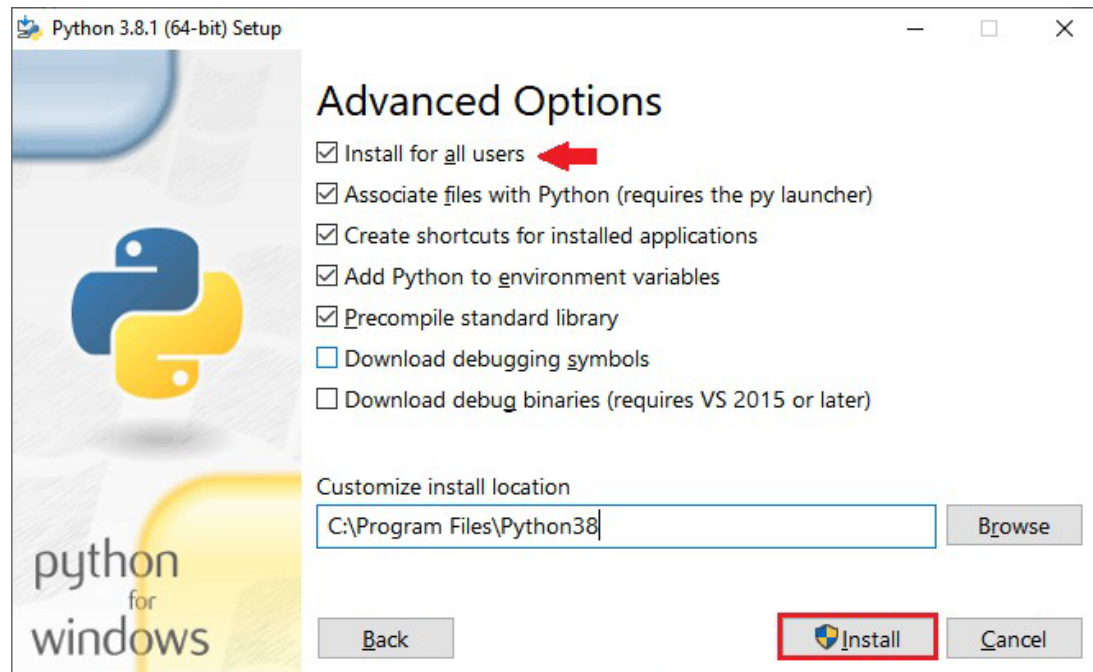
- Once we double-click on the downloaded executable file, the **Python 3.8.1(64-bit)** setup window will appear on the screen, where we have two options available to install the Python, which are:
 - **Install Now**
 - **Customize installation**
- We will click on the **Customize installation**, and select **Add Python 3.8 to path** checkbox as we can see in the below image:



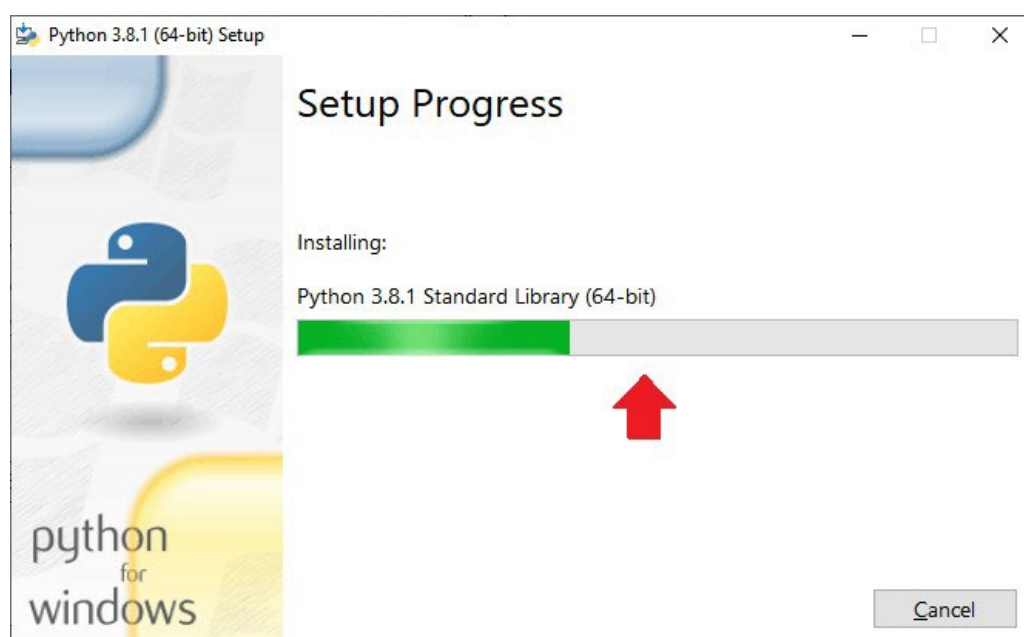
- After, click on the customize installation, the **Optional Features** will appear on the screen, where we can select and deselect the features according to our requirements.
- Then, click on the **Next** button, to proceed further as we can see in the below image:



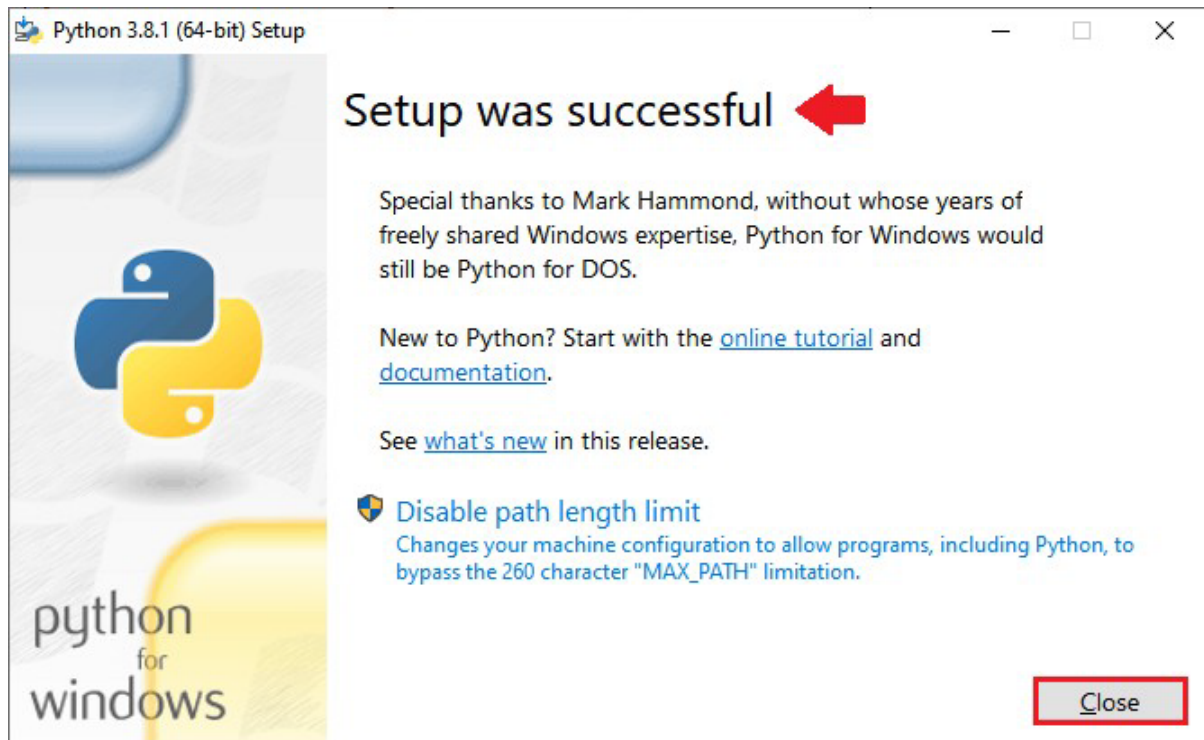
- Once, we clicked on the Next button; we have a list of **Advanced Options** available, where we can select the options based on our needs and also make sure that the **Install for all users** is selected.
- We can also customize the **install location** according to our convenience by clicking on the **Browse**
- After that, click on the **Install** button, to install the Python as we can see in the below screenshot:



- The installing process is getting started after clicking on the Install button as we can see in the below screenshot:

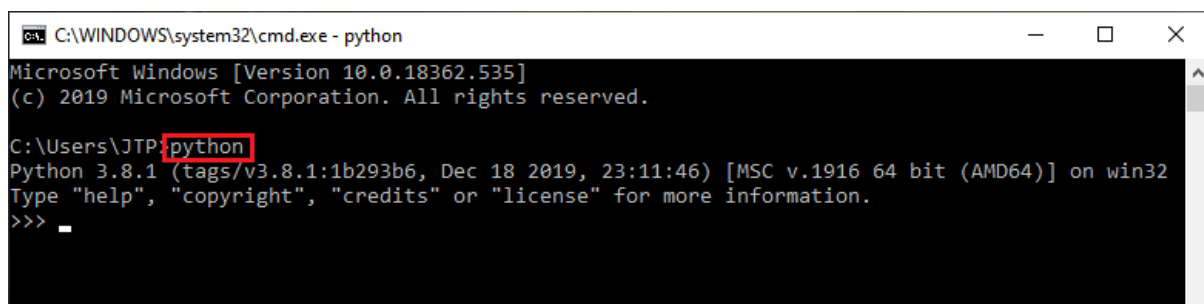


- When the installation is done, we got the confirmation message as **Setup was successful**, which means that the Python is installed successfully for the **Windows** operating system.
- Then, click on the **Close** button, to close the setup window as we can observe in the below screenshot:



After that, we will check whether Python is installed successfully and working fine or not.

So for this, we will open our command prompt, and type the command as **Python** and press the **Enter key**, and it will open the Python interpreter shell where we can implement the Python program as we can see in the below image:



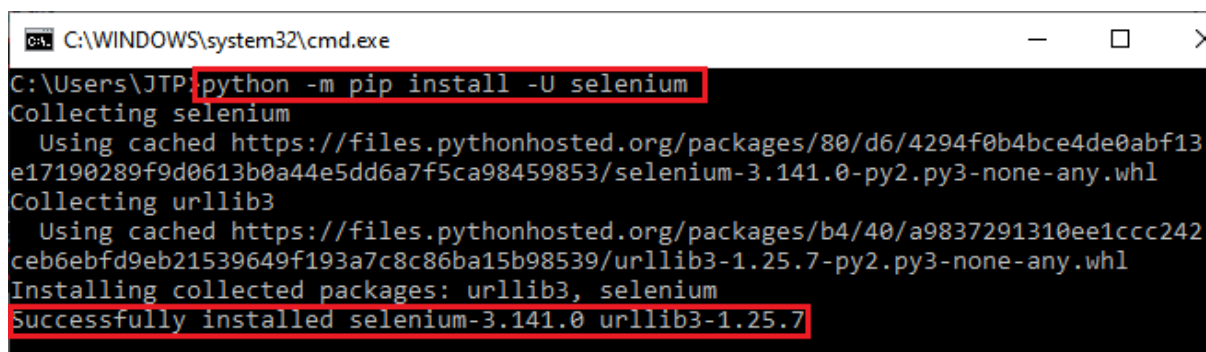
Installing the Selenium libraries in Python

Once we successfully install the Python in our operation system, we will install the Selenium libraries.

For this, we will execute the following command in our command prompt:

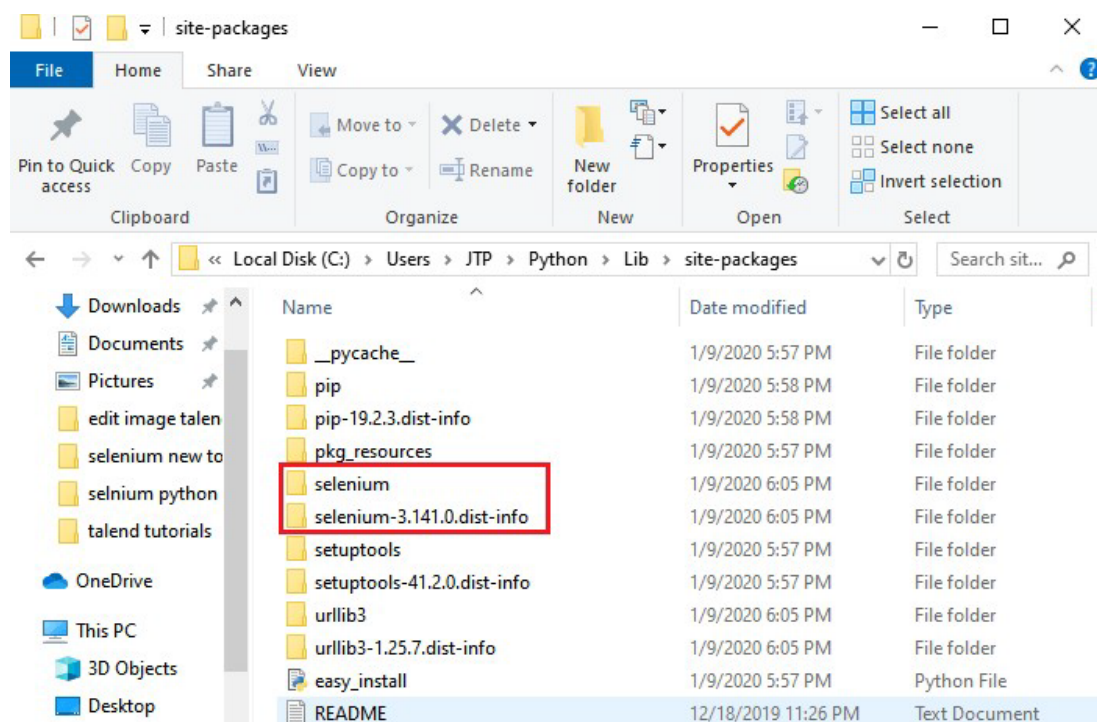
1. `Python -m pip install -U Selenium`

And, this command will successfully install the latest **Selenium package** i.e., **Selenium -3.141.0** added to the libraries as we can see in the below image:



```
C:\WINDOWS\system32\cmd.exe
C:\Users\JTP>python -m pip install -U selenium
Collecting selenium
  Using cached https://files.pythonhosted.org/packages/80/d6/4294f0b4bce4de0abf13e17190289f9d0613b0a44e5dd6a7f5ca98459853/selenium-3.141.0-py2.py3-none-any.whl
Collecting urllib3
  Using cached https://files.pythonhosted.org/packages/b4/40/a9837291310ee1ccc242ceb6ebfd9eb21539649f193a7c8c86ba15b98539/urllib3-1.25.7-py2.py3-none-any.whl
Installing collected packages: urllib3, selenium
Successfully installed selenium-3.141.0 urllib3-1.25.7
```

After that executing the above command, it will create the **Selenium folder** automatically having all the Selenium libraries as we can see in the below screenshot:

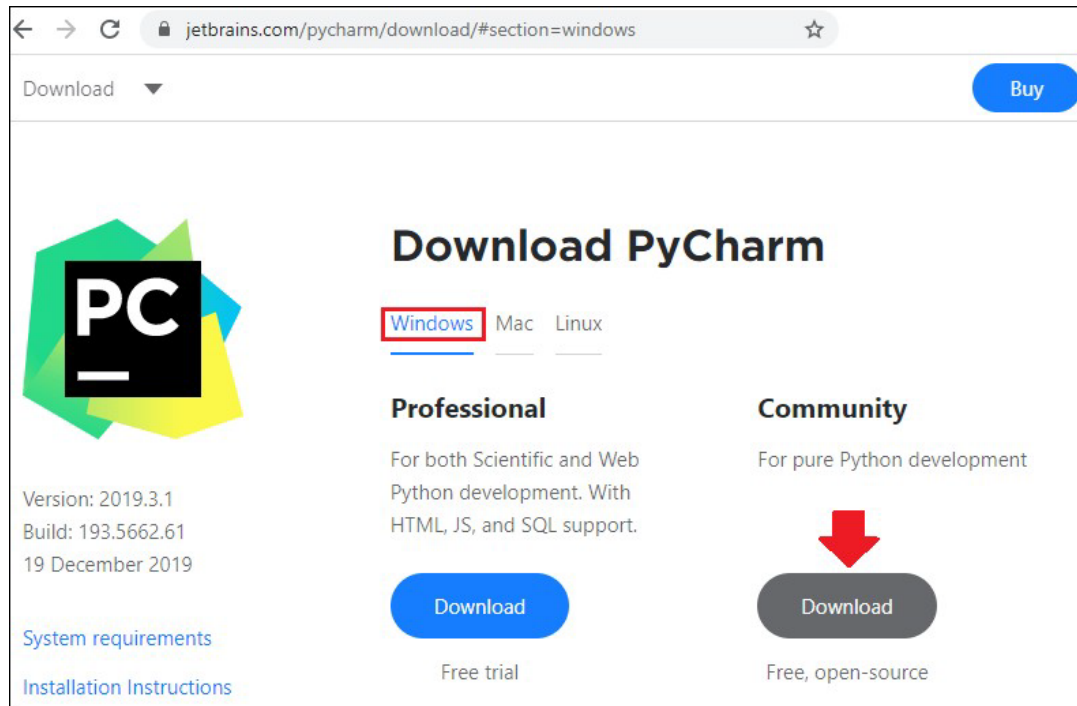


Download and install PyCharm

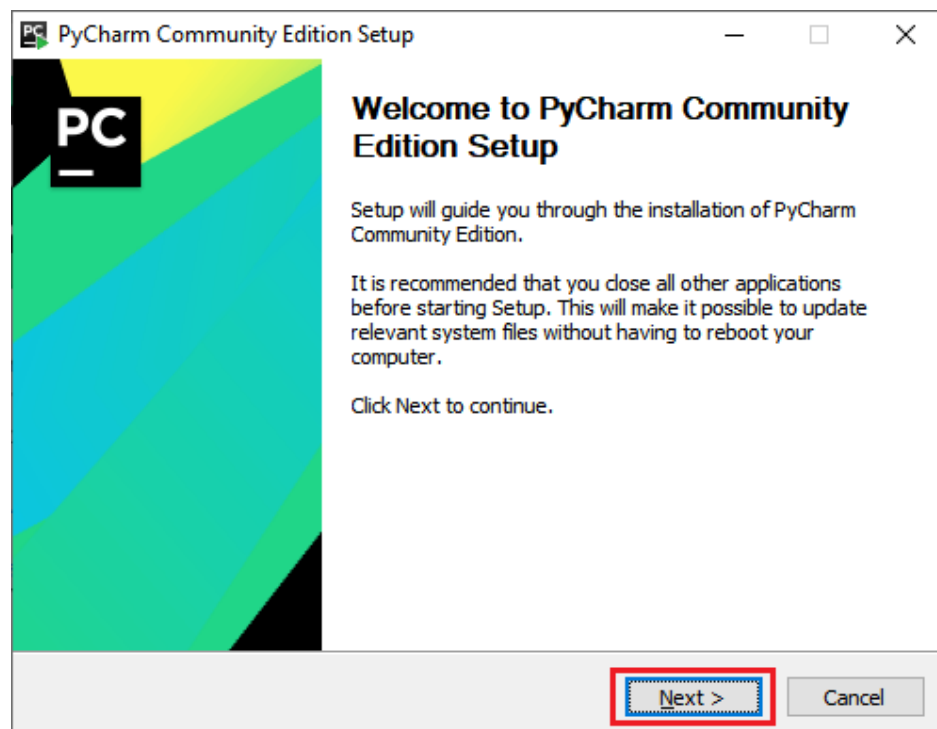
Once we successfully install the Selenium libraries into Python, we are ready to download Python IDE that is PyCharm.

To download the PyCharm, follow the below process:

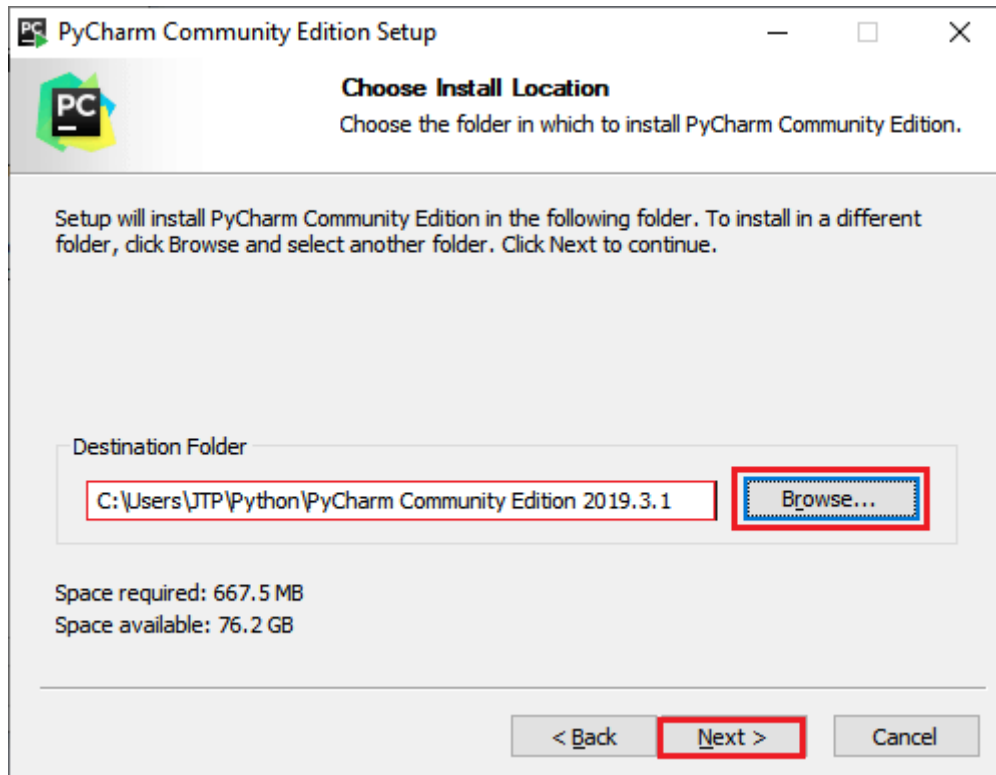
- Refer the below link, to download the PyCharm <https://www.jetbrains.com/pycharm/download/#section=windows>
- Once we clicked on the above link, we will get the below window, where will click on the **Download** button under the **Community** section for the **Windows**



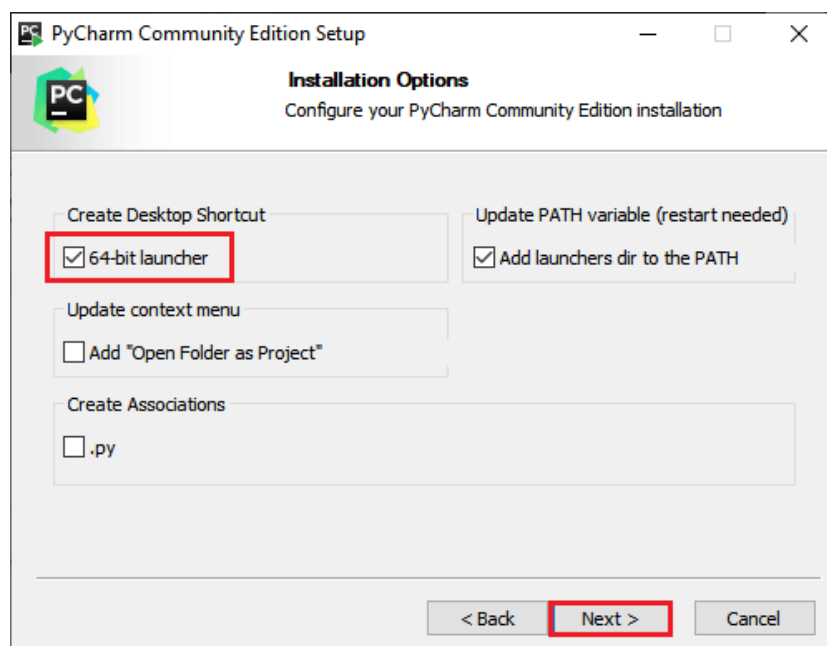
- After that, double-click on the executable file to install the PyCharm, and the **PyCharm Community Edition Setup** window will appear on the screen, where we click on the **Next** button to proceed further as we can see in the below image:



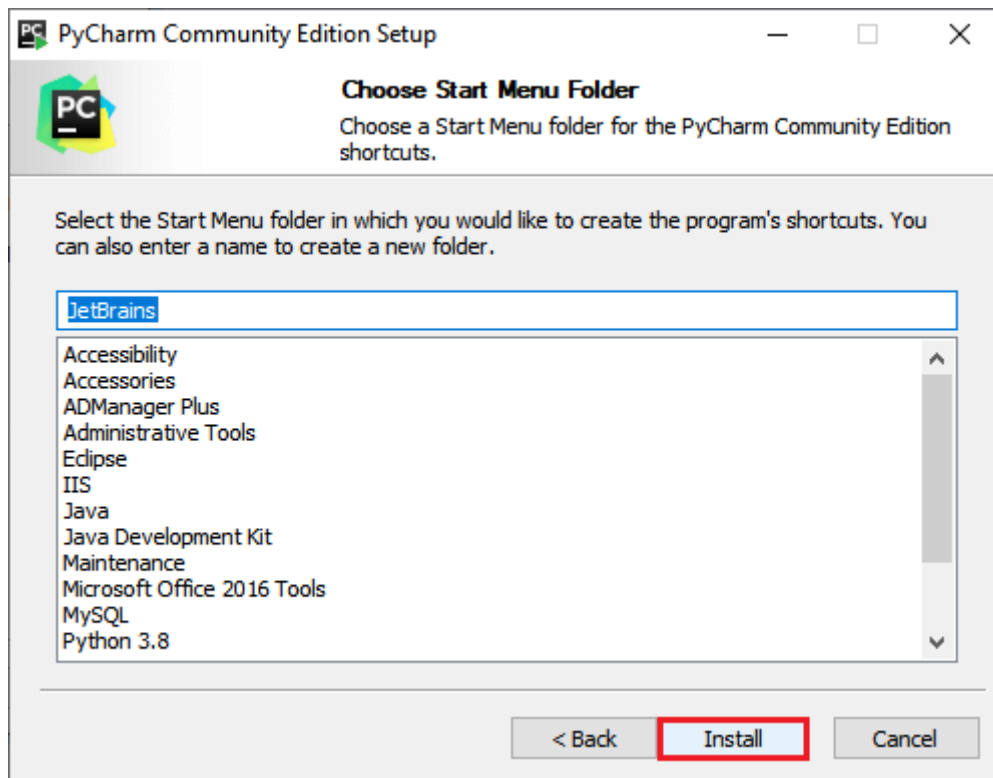
- In the next step, we can **Choose Install location** by clicking on the **Browser** button, then click on the **Next** button for further process.



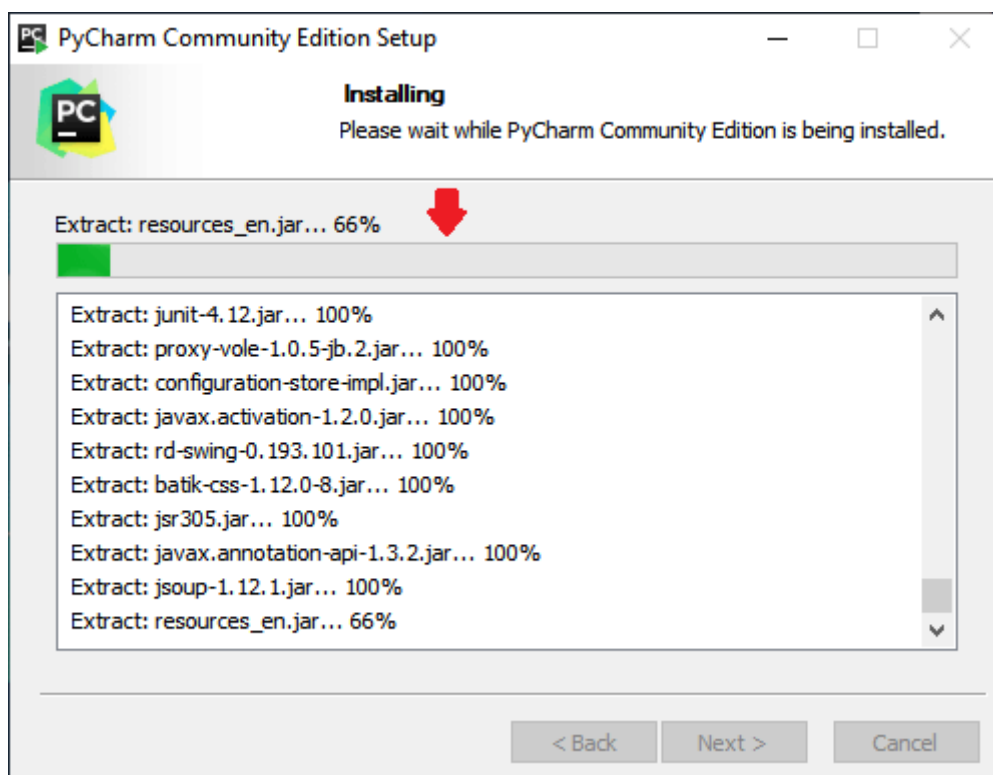
- In the next step, we have some **Installation Options** available, and we can select them based on our requirements.
- After that, click on the **Next** button as we can see in the below image:



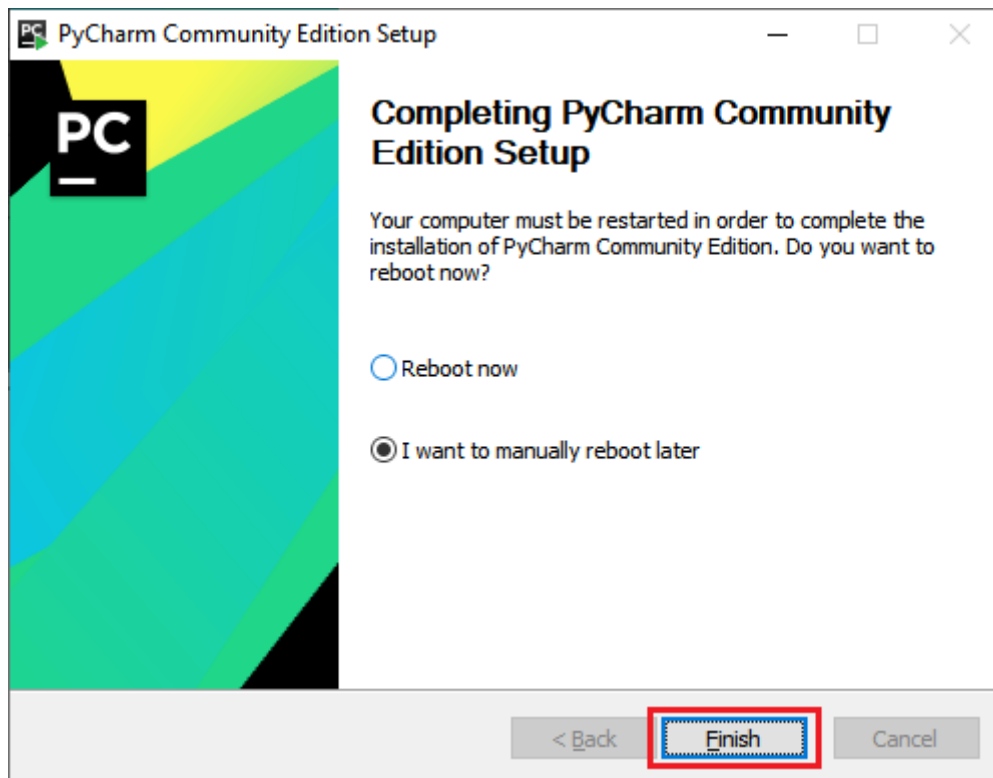
- Then, click on the **Install** button to install the PyCharm, as we can see in the below screenshot:



- As we can see in the below image, the installation process is getting started.



- Then, click on the **Finish** button to finish the installation process as we can see in the below image:



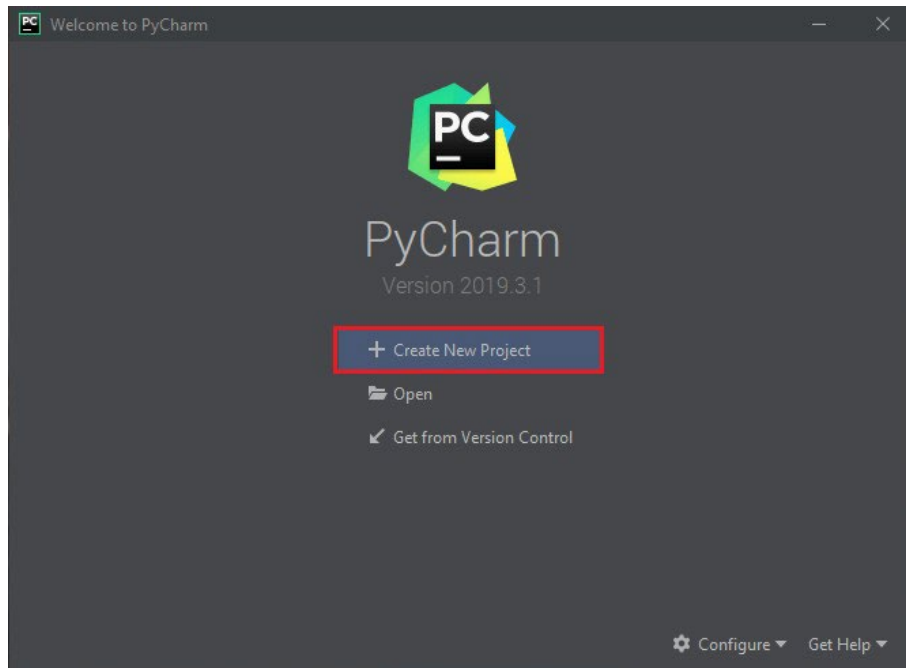
Create a new project and write the Selenium test script

Once we successfully install the PyCharm, we will open the PyCharm IDE for creating a new project.

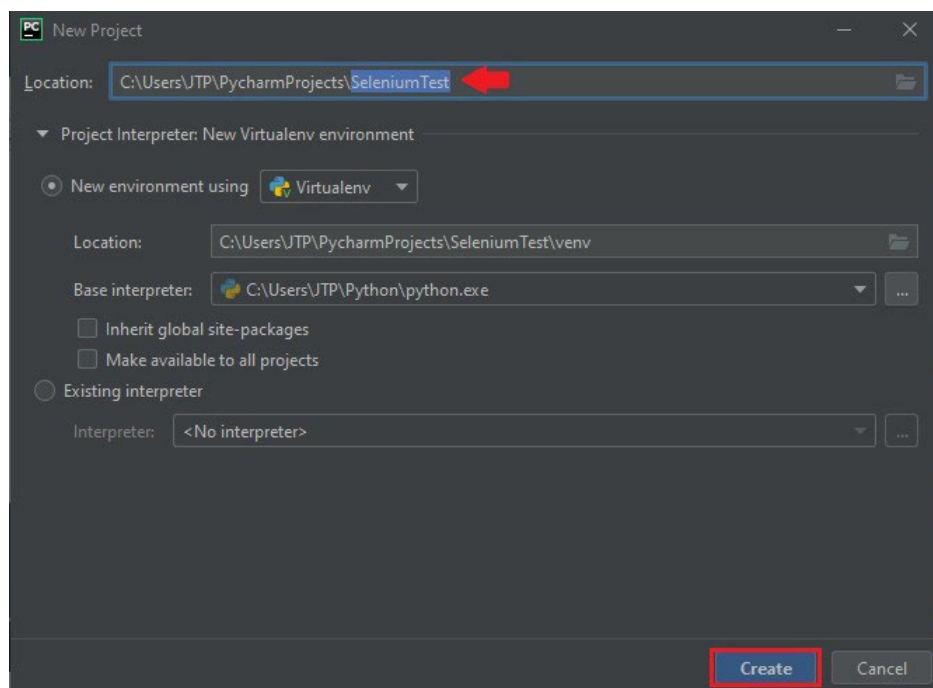
Create a New Project in PyCharm

Follow the below process, to create a new project in PyCharm:

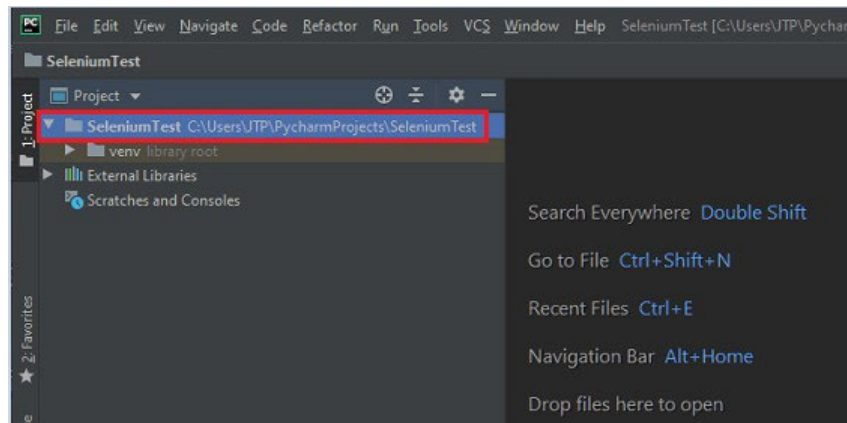
- First, open the PyCharm by Double-click on it, and click on the **Create New Project** as we can see in the below image:



- After that, we will provide the project name as **SeleniumTest**, and click on the **Create** button as we can see in the below image:



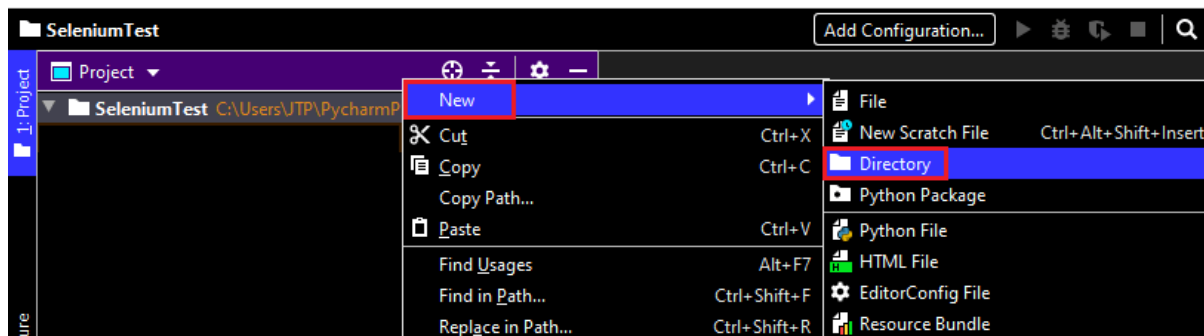
- After clicking on the Create button, we will get the below window:



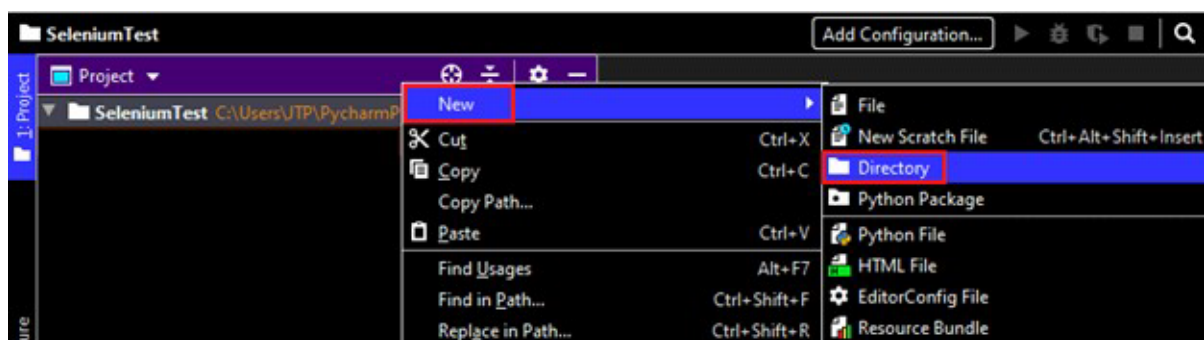
Adding Selenium Test Scripts

For adding the Selenium test scripts in the PyCharm, follow the below process:

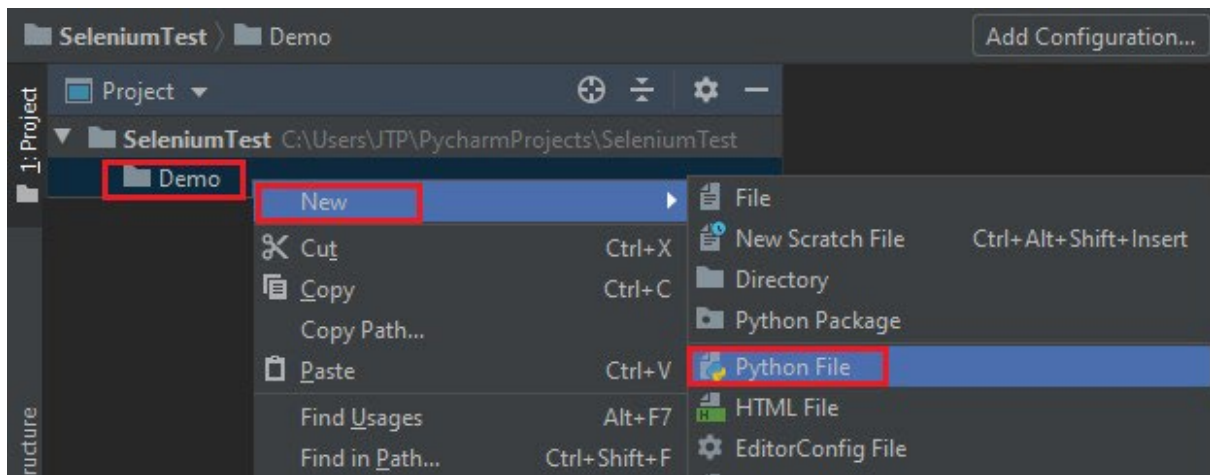
- Right-click on the **SeleniumTest** project, then go to **New**, and we can add any of the options in the given list according to our requirements.
- But, here we are adding the Python file, so for this, we will add the **Directory** which helps us to manage them separately as we can see in the below screenshot:



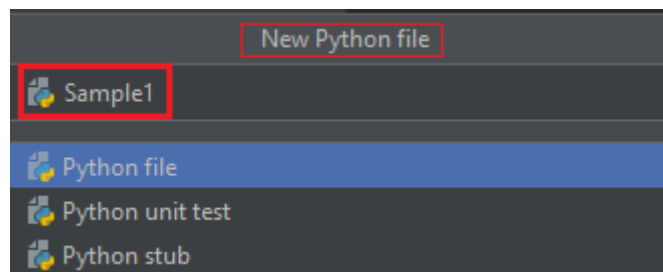
- And, provide the Directory name, in our case we give it as **Demo**
- After that, press the **Enter** key as we can see in the below screenshot:



- After creating a Directory, we will right-click on the **Demo** Directory then go to **New**, and select **Python File** from the pop-up menu as we can see in the below image:
Demo → New → Python File



- And, we provide a name to python file as **Sample1**.
- Then, press the **Enter** key as we can see in the below image:



- After that, we got the IDE where we can create or write our Selenium test Scripts.

Write the Selenium test script

For our testing purpose, we will first go to the **Google Home page** and search **javatpoint** from there.

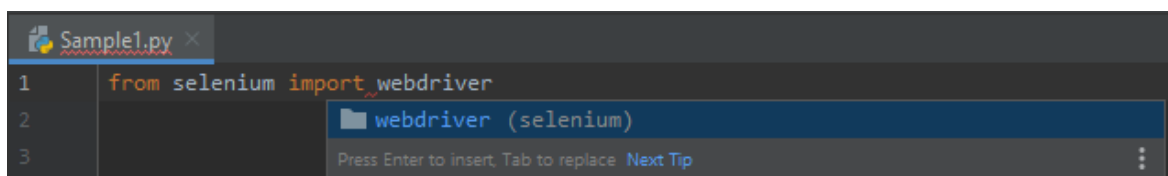
We are creating our sample test script step by step to give you a complete understanding of how we write a Selenium test script in Python programming language.

For this, follow the below steps:

Step1

In the first step, we will type the following statement to import the web driver:

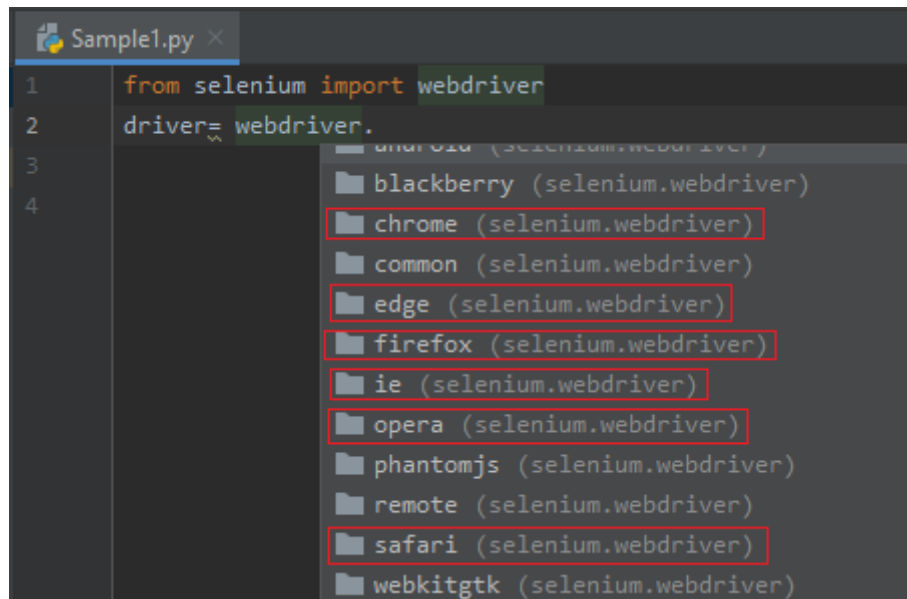
1. **from** selenium **import** webdriver



Step2

After that, we will open the Google Chrome browser.

As we can see in the below screenshot, we have multiple types of browsers options available, and we can select any browser from the list like **Chrome, Edge, firefox, Internet Explorer, opera, safari, etc.**



Following are the sample code for opening the Google Chrome browser:

1. `driver = webdriver.Chrome()`

Step3

In the next step, we will be maximizing our browser window size, and the sample code is as below:

1. `driver.maximize_window()`

Step4

Then, we will navigate to the given URL.

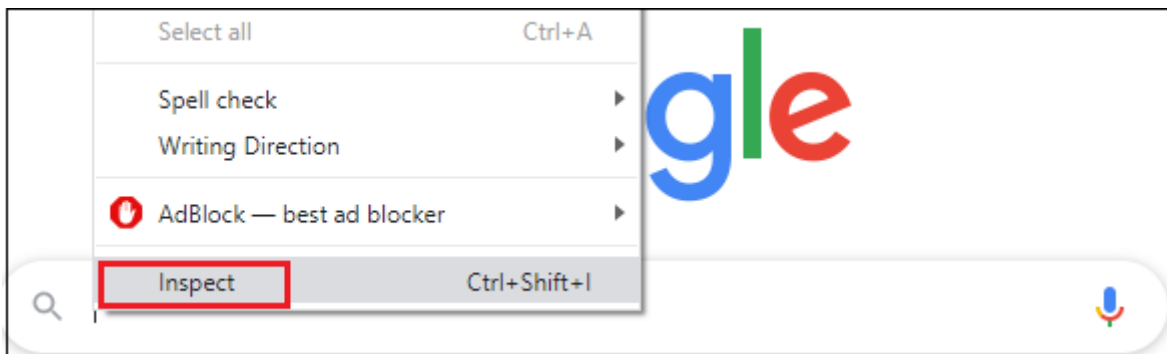
The sample code is as below:

1. `driver.get("https://www.google.com/")`

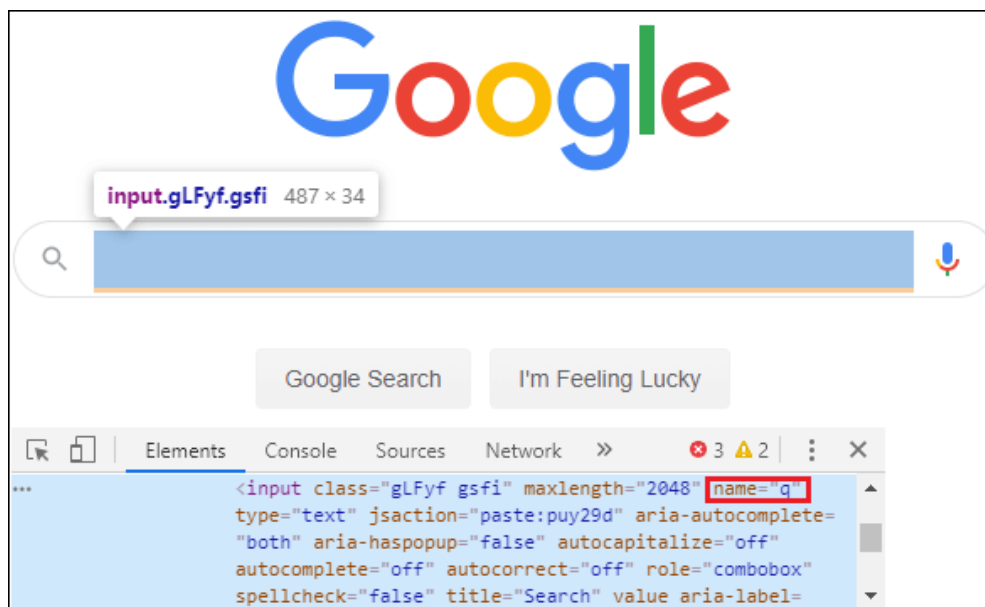
Step5

In this step, we are trying to locate the Google search text box with the help of its **Name** attribute value.

- Right-click on the **Google search** text box, and select the **Inspect** option in the pop-up menu as we can see in the below image:



- The developer tool window will be launched with all the specific codes used in the development of the **Google search** text box.
- And, copy the value of its **Name** attribute, that is "q" as we can see in the below image:



Here the sample code:

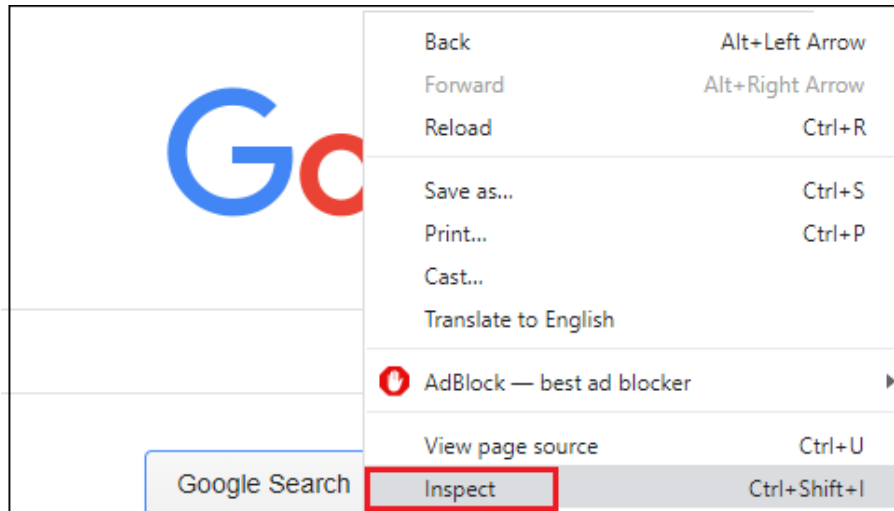
1. `driver.find_element_by_name("q").send_keys("javatpoint")`

Step6

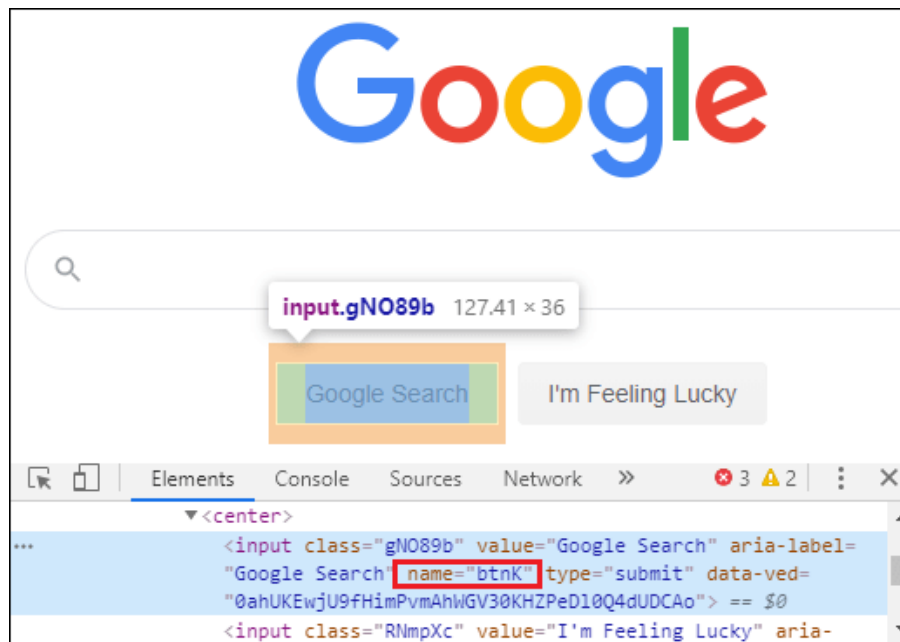
Once we identify the Google search text box, and we will identify the **Google Search button**.

So for this, follow the below process:

- Right-click on the **Google search** button, and select the **Inspect** option from the given pop-up menu as we can see in the below image:



- The developer tool window will be launched with having all the specific codes used in the development of the **Google search** button.
- Then, copy the value of its **name** attribute that is "**btnK**" as we can see in the below image:



And, the sample code is as following:

1. `driver.find_element_by_name("btnK").send_keys(Keys.ENTER)`

Step7

In the last step, we are closing the browser.

And, the sample code for closing the browser is as follows:

1. `driver.close()`

Our final test script will look like this, after completing all the above steps:

1. **from** Selenium **import** webdriver
2. **import** time
3. **from** Selenium.webdriver.common.keys **import** Keys
4. **print**("sample test case started")
5. `driver = webdriver.Chrome()`
6. `#driver=webdriver.firefox()`
7. `#driver=webdriver.ie()`
8. `#maximize the window size`
9. `driver.maximize_window()`
10. `#navigate to the url`
11. `driver.get("https://www.google.com/")`
12. `#identify the Google search text box and enter the value`
13. `driver.find_element_by_name("q").send_keys("javatpoint")`
14. `time.sleep(3)`
15. `#click on the Google search button`
16. `driver.find_element_by_name("btnK").send_keys(Keys.ENTER)`
17. `time.sleep(3)`
18. `#close the browser`
19. `driver.close()`
20. **print**("sample test case successfully completed")

Note:

Import time: Time is a Python module, which is used to handle the time-related tasks such as `time.sleep()`.

from Selenium.webdriver.common.keys import Keys:

Here, we are adding Keys libraries from Selenium, like in the above code, we are using the **Enter** key instead of **click()** method to perform a particular scenario.

Run and validate the test scripts

Once we are done with writing the Selenium test script, we will run our test scripts.

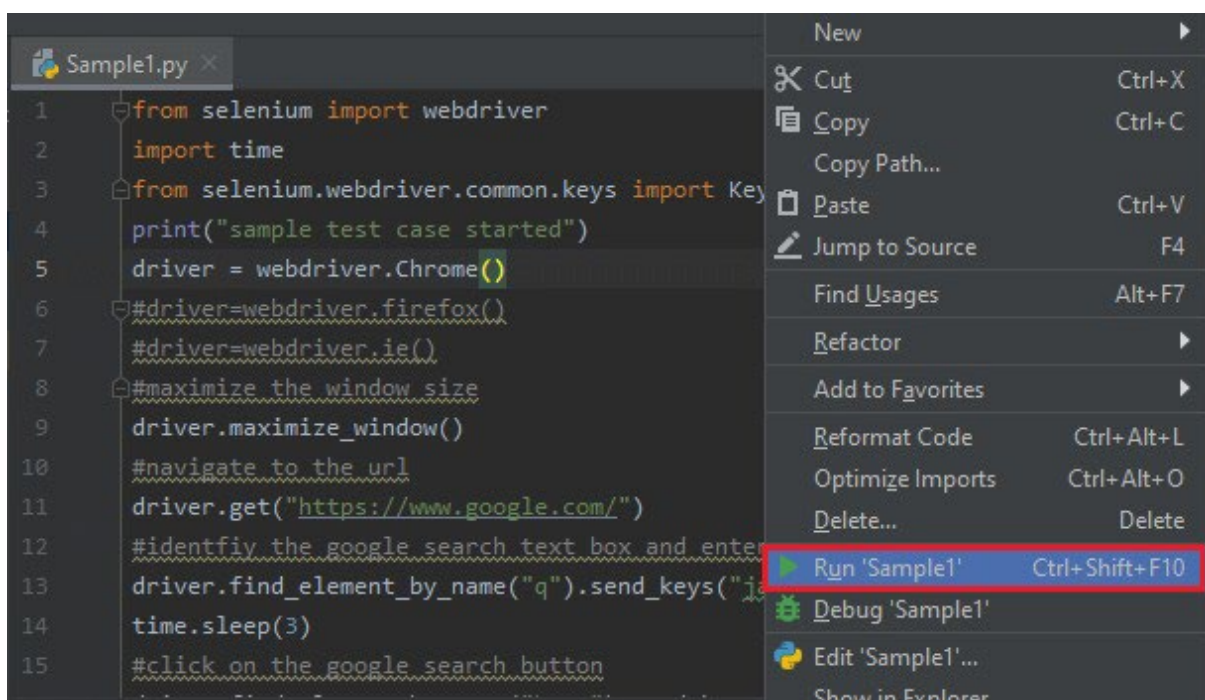
Here we will run our test scripts in two ways:

- **Run in Python IDE**
- **Run in Command Prompt**

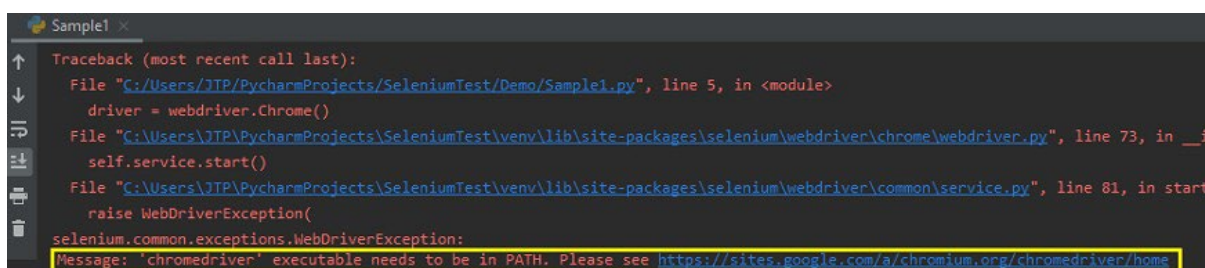
Run in Python IDE

So, for this first, we will see how to run the Selenium test script in Python IDE.

- Right-click on the code, and select **Run 'Sample1'** from the popup menu as we can see in the below screenshot:



- When we run this script it will give an exception because we don't have the Chrome driver executable file as we can in the below image:



To overcome this exception, we will download the chrome driver executable from below

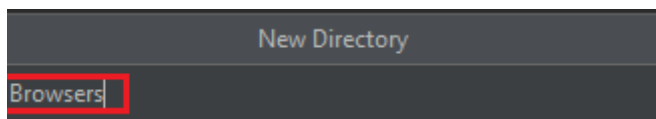
link: <https://chromedriver.storage.googleapis.com/index.html?path=79.0.3945.36/>

- Once we click on the above link, we will click on the **zip file** based upon our operating system platform. Like we have **Windows platform** that's why we clicked on the **zip** to download the Executable file as we can see in the below screenshot:

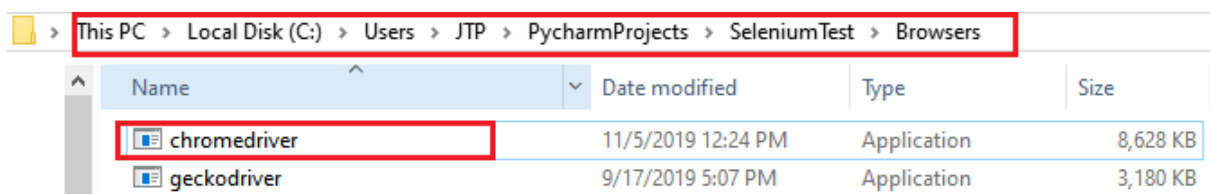
Index of /79.0.3945.36/

Name	Last modified	Size	ETag
Parent Directory	-	-	-
chromedriver_linux64.zip	2019-11-18 18:20:03	4.65MB	77e6b631478c63c2df5809822a0af916
chromedriver_mac64.zip	2019-11-18 18:20:05	6.59MB	57d2a9629298aa6dc2d759fe09da5d13
chromedriver_win32.zip	2019-11-18 18:20:06	4.07MB	9665be96d739035efdf91684f406fdc
notes.txt	2019-11-18 18:20:10	0.00MB	c4ebd5d56bbe3948e7fbbf96cfe8a75b

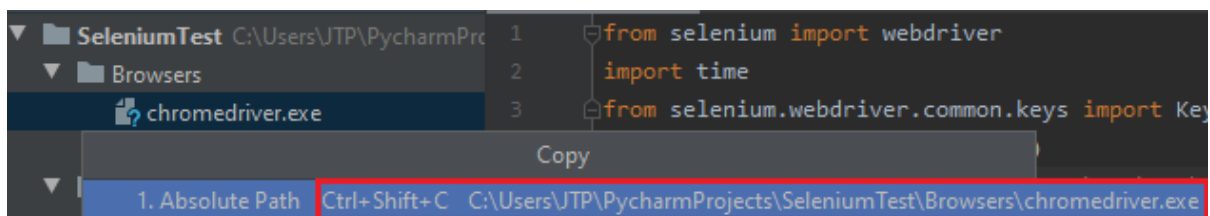
- After downloading the **exe** file, we can paste this file to the Python folder and unzip it.
- Then, we will create one more folder called libraries as **Browsers** in the Python IDE.
- Right-click on the Project(**SeleniumTest**) → **New** → **Directory** as we can see in the below screenshot:



- And, we will add all the driver's executable files in the **Browsers** folder manually.
- For this, we will copy the **chrome driver exe** file from the **Python folder**, and paste in the **Browser** folder as we can see in the below image:



- Now go to **PyCharm** IDE, and copy the **Absolute path** of chromedriver.exe file as we can see in the below screenshot:

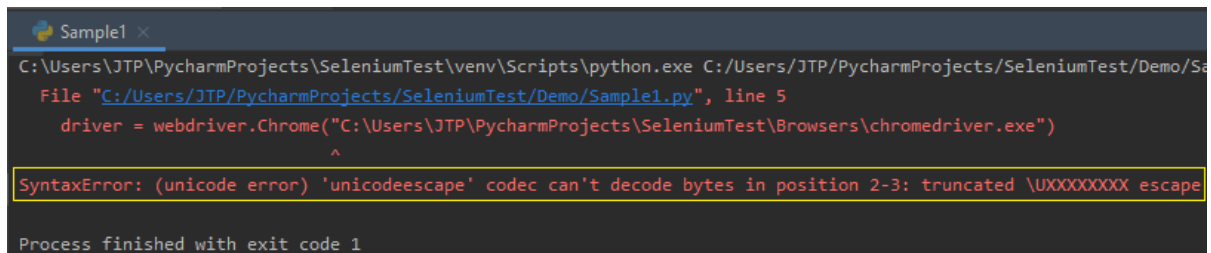


- Replace the statement "driver = webdriver.Chrome()" with a statement given below:

1. `driver=webdriver.Chrome(r"C:\Users\JTP\PycharmProjects\SeleniumTest\Browsers\chromedriver.exe")`

Note: Here, we will use "r" to overcome the Unicode error.

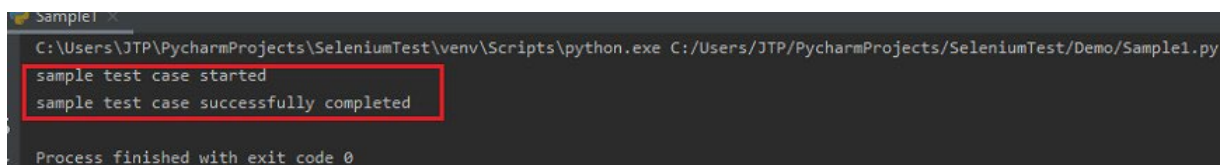
As we can see in the below screenshot, if we do not put r in the code, it will generate the **Syntax Error**.



```
Sample1 x
C:\Users\JTP\PycharmProjects\SeleniumTest\venv\Scripts\python.exe C:/Users/JTP/PycharmProjects/SeleniumTest/Demo/Sa
File "C:/Users/JTP/PycharmProjects/SeleniumTest/Demo/Sample1.py", line 5
    driver = webdriver.Chrome("C:\Users\JTP\PycharmProjects\SeleniumTest\Browsers\chromedriver.exe")
                                ^
SyntaxError: (unicode error) 'unicodeescape' codec can't decode bytes in position 2-3: truncated \UXXXXXXXX escape

Process finished with exit code 1
```

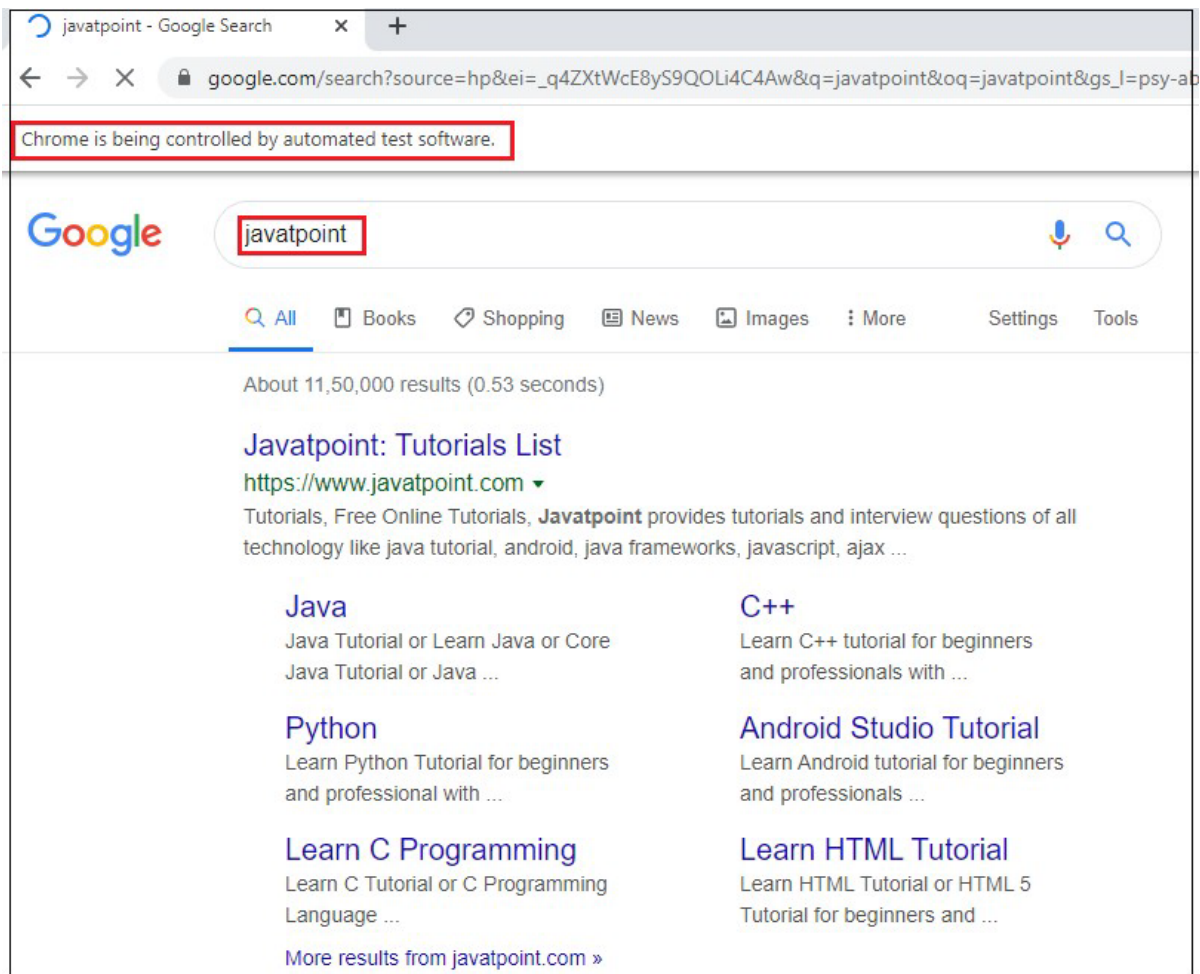
- After that, we will run the **sample1** once again, and it will execute the code successfully as we can see in the below image:



```
Sample1 x
C:\Users\JTP\PycharmProjects\SeleniumTest\venv\Scripts\python.exe C:/Users/JTP/PycharmProjects/SeleniumTest/Demo/Sample1.py
sample test case started
sample test case successfully completed

Process finished with exit code 0
```

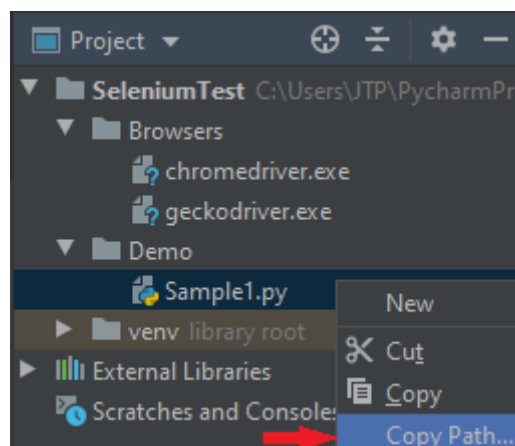
The above test script will launch the Google Chrome browser and automate all the test scenarios.



Run in Command Prompt

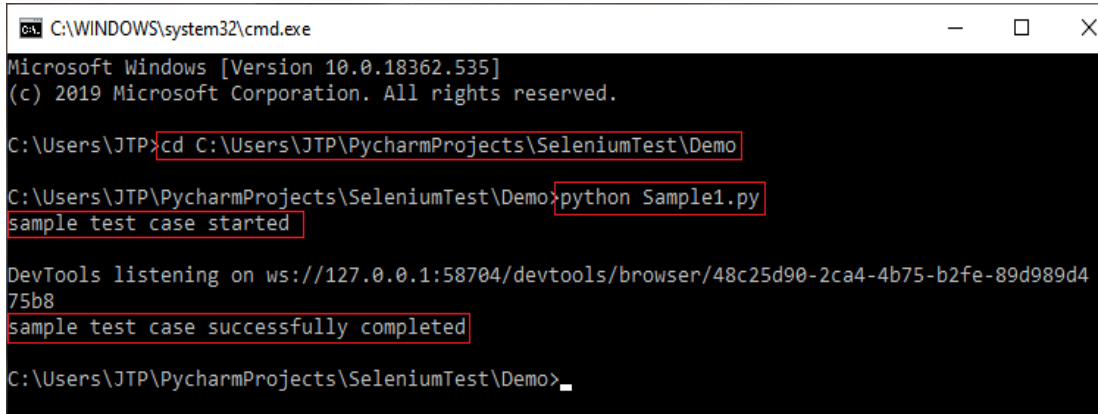
To run the above test script in the Command prompt, follow the below process:

- Copy the location of the **Sample1.py** file as we can see in the below image:



- And paste in the command Prompt, first go to the particular folder then enter the below command:
Python Sample1.py

- Then, press the **Enter** key as we can see in the below screenshot that the **sample testcase started**.
- And after automating all the scenarios, it will show the message as a **sample test casesuccessfully completed**.



```
C:\WINDOWS\system32\cmd.exe
Microsoft Windows [Version 10.0.18362.535]
(c) 2019 Microsoft Corporation. All rights reserved.

C:\Users\JTP>cd C:\Users\JTP\PycharmProjects\SeleniumTest\Demo
C:\Users\JTP\PycharmProjects\SeleniumTest\Demo>python Sample1.py
sample test case started

DevTools listening on ws://127.0.0.1:58704/devtools/browser/48c25d90-2ca4-4b75-b2fe-89d989d475b8
sample test case successfully completed

C:\Users\JTP\PycharmProjects\SeleniumTest\Demo>
```

Conclusion: By the end of this experiment, we got a basic understanding of how to use Selenium with Python to test a web application. You will be able to set up a Python virtual environment for Selenium tests, write basic Selenium tests using Python, and integrate Selenium tests with Jenkins. You will also be able to expand on this by adding more tests, integrating with other tools, and configuring Jenkins to run tests automatically on a schedule or when code changes are pushed to the repository.