

1 What is PyCharm?

PyCharm is an IDE (integrated development environment) for Python published by JetBrains. IDEs are software that help programmers write code more easily. There are many IDEs for Python. PyCharm is one of the most popular and is available for Windows, MacOS, and Linux.

There are several popular IDEs and text editors that can be used for Python, such as Spyder which is installed on the computers in the lab. We recommend PyCharm because it makes installing Python libraries easy.

2 Installation Instructions

2.1 Obtaining the Professional Version of JetBrains Products

1. Before downloading Pycharm, go to [The Free Educational Licenses Page](#). From there select APPLY NOW.

Individual licenses for students and teachers

Get free access to all JetBrains IDEs for personal use at school or at home.

Who can get free individual licenses for education

Students and faculty from accredited educational institutions (high schools, colleges, and universities) are welcome to apply.

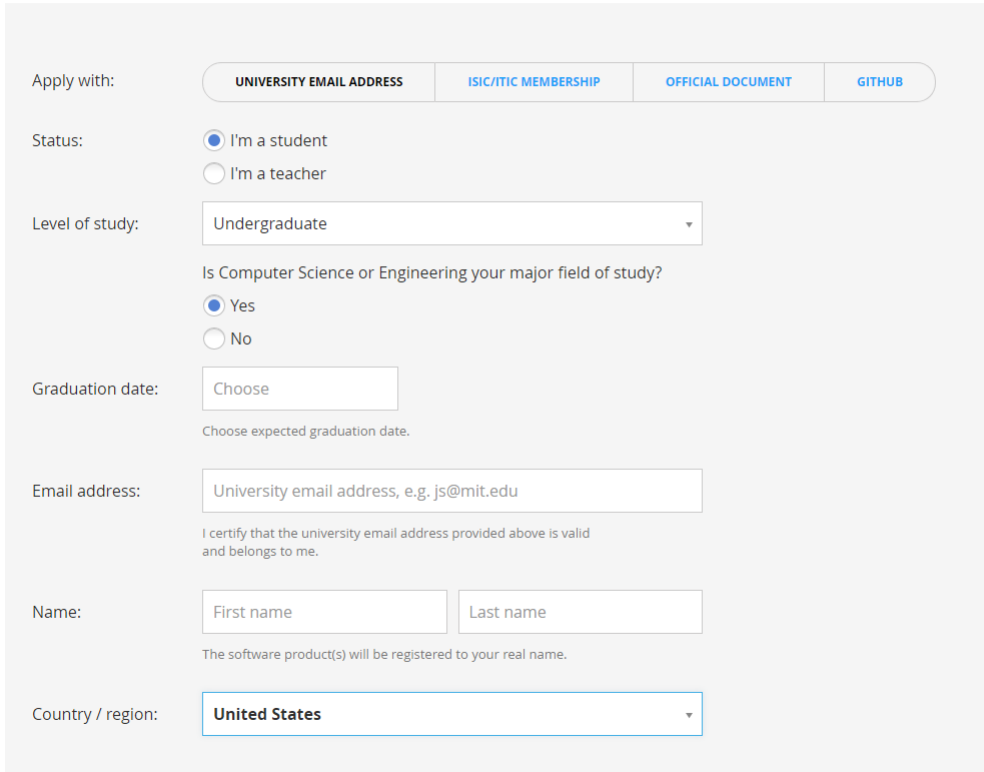
Students need to be enrolled in an accredited educational program that takes one or more years of full-time study to complete.

Not sure about the license terms? [Check out the FAQ](#) or read the full terms [here](#).

Apply now

2. Enter your information with the Email Address being your UNM Email. Then select Apply for Free Products.

JetBrains Products for Learning



The screenshot shows a web form for applying for JetBrains products for learning. The form includes the following fields and options:

- Apply with:** Four tabs: UNIVERSITY EMAIL ADDRESS (selected), ISIC/ITIC MEMBERSHIP, OFFICIAL DOCUMENT, and GITHUB.
- Status:** Radio buttons for "I'm a student" (selected) and "I'm a teacher".
- Level of study:** A dropdown menu with "Undergraduate" selected.
- Is Computer Science or Engineering your major field of study?** Radio buttons for "Yes" (selected) and "No".
- Graduation date:** A text input field with "Choose" inside. Below it, the text "Choose expected graduation date." is displayed.
- Email address:** A text input field with the placeholder "University email address, e.g. js@mit.edu". Below it, the text "I certify that the university email address provided above is valid and belongs to me." is displayed.
- Name:** Two text input fields for "First name" and "Last name". Below them, the text "The software product(s) will be registered to your real name." is displayed.
- Country / region:** A dropdown menu with "United States" selected.

3. From there you should receive an email from JetBrains to confirm your email. Once confirmed you should be brought to this page.

JetBrains Products for Learning

Congrats! You've been approved!

You are now entitled to use JetBrains products for free. Start learning by using Pro tools right now! To get started, please follow the instructions we have just emailed you at tathe_deepak.ghrcelt@raisoni.net.

For more details you can also check out the [JetBrains Student program description page](#).

[« Discover our products](#)

4. You can check your licence and product information by signing into your account. You should see a page similar to this listing all the products that you have for free, with one showing PyCharm. As well as JetBrains Product Pack for Students.

2.2 Applicable to Windows, MacOS, and Linux

1 License

[Buy new license](#)

The screenshot shows the 'JetBrains Product Pack for Students' license page. It includes a 'Download' button, a 'License ID' field, and a list of products included in the pack: AppCode, CLion, DataGrip, GoLand, IntelliJ IDEA Ultimate, PhpStorm, PyCharm, ReSharper, Rider, and RubyMine. The license is valid through October 16, 2020, and is for educational use only. A note at the bottom states: 'After downloading and installing the software, simply run it and follow the on-screen prompts to sign in with your JetBrains Account.'

Can't find your license here? Link your past purchases to your JetBrains Account by [providing a license key or domain](#).

5. If everything is complete, you can now download the Professional Version of PyCharm.

2.2 Applicable to Windows, MacOS, and Linux

1. To download PyCharm, go to [JetBrains' PyCharm Download Page](#). There are options for Windows, MacOS, and Linux. It will look like this:

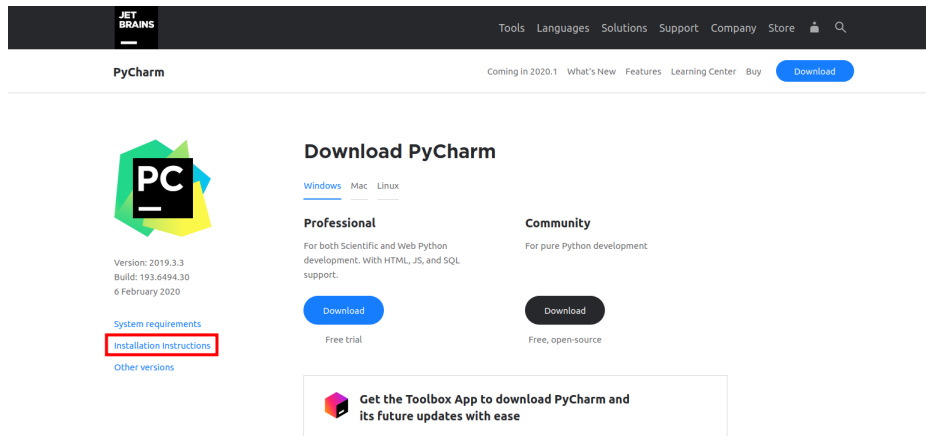
The screenshot shows the JetBrains PyCharm download page. The page is titled 'Download PyCharm' and has tabs for 'Windows', 'Mac', and 'Linux'. There are two main sections: 'Professional' and 'Community'. The 'Professional' section is for both Scientific and Web Python development, with HTML, JS, and SQL support, and offers a 'Free trial'. The 'Community' section is for pure Python development and is 'Free, open-source'. Both sections have a 'Download' button. The page also includes a 'PC' logo, version information (2019.3.3, Build: 193.6494.30, 6 February 2020), and links for 'System requirements', 'Installation instructions', and 'Other versions'. A banner at the bottom promotes the 'Toolbox App' for downloading PyCharm and its updates.

2. Select the Professional edition if you have the Student Licence, if not then select Community edition. The Community edition is completely free and open source. It

2.3 Windows

has all the features you need for this course. (To put this into perspective, a lot of professional developers use the Community edition.)

3. Follow the installation instructions linked here:



2.3 Windows

1. Run the .exe file that is downloaded.
2. Use the defaults in the installation wizard.

2.4 MacOS

1. Mount the .dmg file you downloaded as a disk in your system.
2. Copy PyCharm to your Applications folder.

2.5 Linux

You have two options with Linux. If you have downloaded the tar.gz file from the website, do the following:

1. Copy the tar.gz file you downloaded into the location in which you want to install PyCharm.
2. Open your terminal and `cd` into the directory in which you want to install PyCharm.
3. Use the following command to unpack the files into an *empty* directory: `tar -xzf pycharm-2019.3.3.tar.gz`
4. `cd` into the `bin` subdirectory where you unpacked PyCharm and run `pycharm.sh` by using the following command: `./pycharm.sh`.

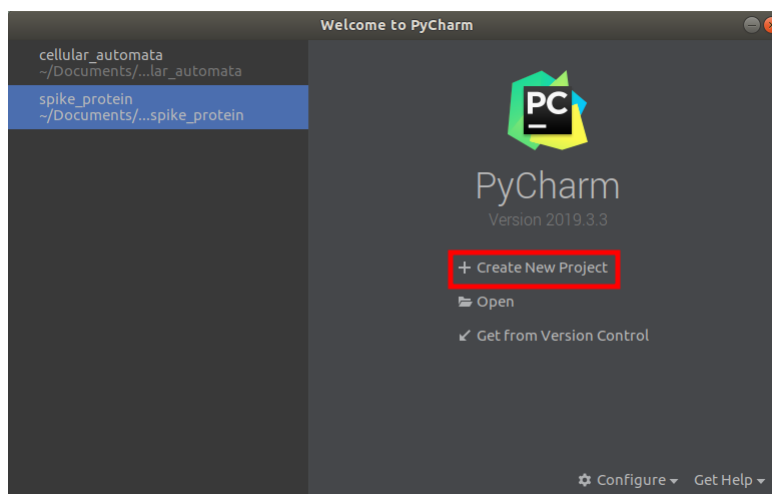
If you are running Ubuntu 16.04, or more recent, you can do the whole thing from the command line using a snap:

1. Run the following command:
 - (a) For PyCharm Community Edition: `sudo snap install pycharm-community --classic`
 - (b) For PyCharm Professional: `sudo snap install pycharm-professional --classic`
2. You can then run PyCharm from the terminal by entering either `pycharm-community` or `pycharm-professional` depending on which version you installed.

3 Your First PyCharm Project

Here is a short tutorial that will guide you through creating your first PyCharm project. These steps are applicable to Windows, MacOS, and Linux.

1. When you open PyCharm for the first time, you will see a small window with several options. Select ”+ Create New Project”



2. Use the wizard to set up your file.
 - (a) Select a folder in which to create your project.
 - (b) Select ”Pure Python”
3. We are going to use `matplotlib` to make a simple plot. Put the following code from the `matplotlib` tutorials (or copy and past from [here](#)) into your new file:

```
import matplotlib
import matplotlib.pyplot as plt
import numpy as np
```

```
# Data for plotting
t = np.arange(0.0, 2.0, 0.01)
s = 1 + np.sin(2 * np.pi * t)

fig, ax = plt.subplots()
ax.plot(t, s)

ax.set(xlabel='time (s)', ylabel='voltage (mV)',
       title='About as simple as it gets, folks')
ax.grid()

fig.savefig("test.png")
plt.show()
```

4. Uh-oh! Look at those red lines!

```
1  import matplotlib
2  import matplotlib.pyplot as plt
3  import numpy as np
4
5  # Data for plotting
6  t = np.arange(0.0, 2.0, 0.01)
7  s = 1 + np.sin(2 * np.pi * t)
8
9  fig, ax = plt.subplots()
10 ax.plot(t, s)
11
12 ax.set(xlabel='time (s)', ylabel='voltage (mV)',
13        title='About as simple as it gets, folks')
14 ax.grid()
15
16 fig.savefig("test.png")
17 plt.show()
```

It looks like the interpreter doesn't know where to find some libraries (in this case `matplotlib` and `numpy`). What are we going to do?

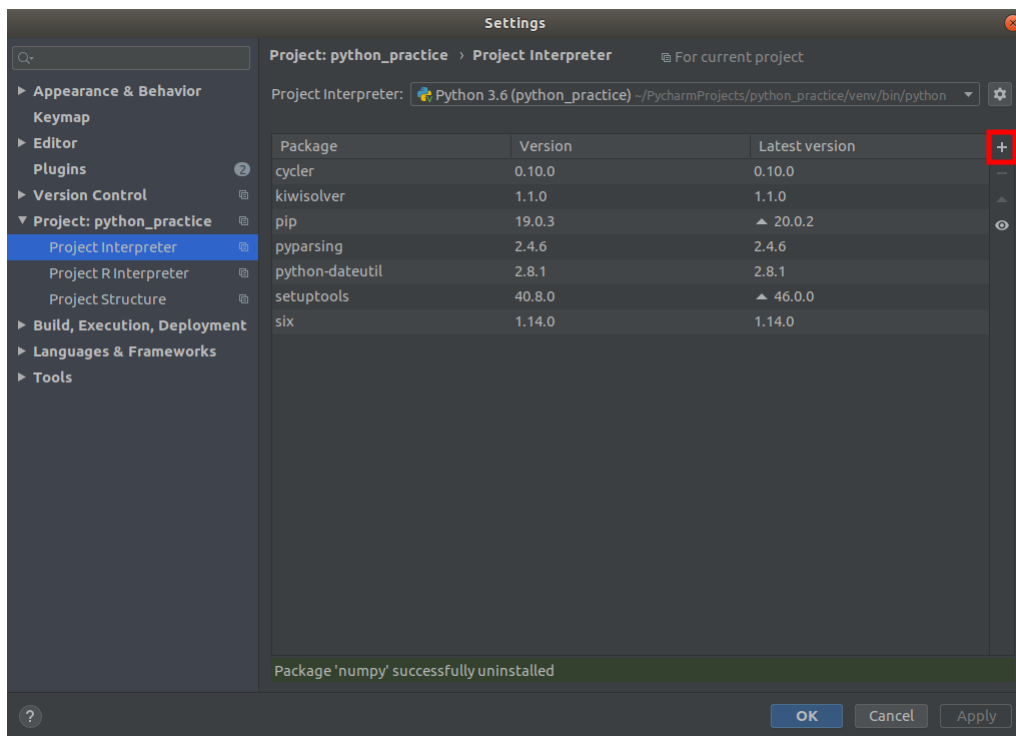
5. Fortunately, PyCharm makes it easy to add new libraries to your project. There are two main ways to do this:

The Easy Way:

- (a) Mouse over a library that is underlined with red. Let's start with `matplotlib`.
- (b) A small menu should appear. Click where it says, "install package matplotlib".
- (c) If it works, you will see a notification in the bottom-right corner of PyCharm letting you know that it was successful.

The Slightly Less-Easy Way: Sometimes, the "smart" features in your IDE are not smart enough. There is a way to add libraries manually.

- (a) Go to File→Settings→Project→Project Interpreter
- (b) Click on the "+" sign on the right-hand side of the window (denoted in red).



- (c) Search for "matplotlib", select "matplotlib", and click "Install Package."
6. Now that there are no more red lines, we can run our program. Go to Run→Run [your file name].