

# Python Programming

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LECTURE-3

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# Setting Up Python

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- Install the latest version of Python 3 on your computer
- Open **IDLE**, Python's built-in **I**ntegrated **D**evelopment and **L**earning **E**nvironment

Let's get started!

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## 2.1 A Note on Python Versions

Many operating systems, including macOS and Linux, come with Python preinstalled. The version of Python that comes with your operating system is called the **system Python**.

## 2.2 Windows

Follow these steps to install Python 3 and open IDLE on Windows.

### Important

The code in this book is tested only against Python installed as described in this section.

Be aware that if you have installed Python through some other means, such as Anaconda Python, you may encounter problems when running some of the code examples.

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## Install Python

Windows doesn't typically come with a system Python. Fortunately, installation involves little more than downloading and running the Python installer from the [Python.org website](https://python.org).

## Step 1: Download the Python 3 Installer

Open a web browser and navigate to the following URL:

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

Click *Latest Python 3 Release - Python 3.x.x* located beneath the “Python Releases for Windows” heading near the top of the page. As of this writing, the latest version was Python 3.9.

Then scroll to the bottom and click *Windows x86-64 executable installer* to start the download.

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## Note

If your system has a 32-bit processor, then you should choose the 32-bit installer. If you aren't sure if your computer is 32-bit or 64-bit, stick with the 64-bit installer mentioned above.



## **Step 2: Run the Installer**

Open your Downloads folder in Windows Explorer and double-click the file to run the installer. A dialog that looks like the following one will appear:



python  
for  
windows

## Install Python 3.8.4 (32-bit)

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



### Install Now

C:\Users\damos\AppData\Local\Programs\Python\Python38-32

Includes IDLE, pip and documentation  
Creates shortcuts and file associations



### Customize installation

Choose location and features

☒ Install launcher for all users (recommended)

☐ Add Python 3.8 to PATH

Cancel

It's okay if the Python version you see is greater than 3.9.0 as long as the version is not less than 3.

### Important

Make sure you select the box that says *Add Python 3.x to PATH*. If you install Python without selecting this box, then you can run the installer again and select it.

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Click  to install Python 3. Wait for the installation to finish, then continue to open IDLE.

# Open IDLE

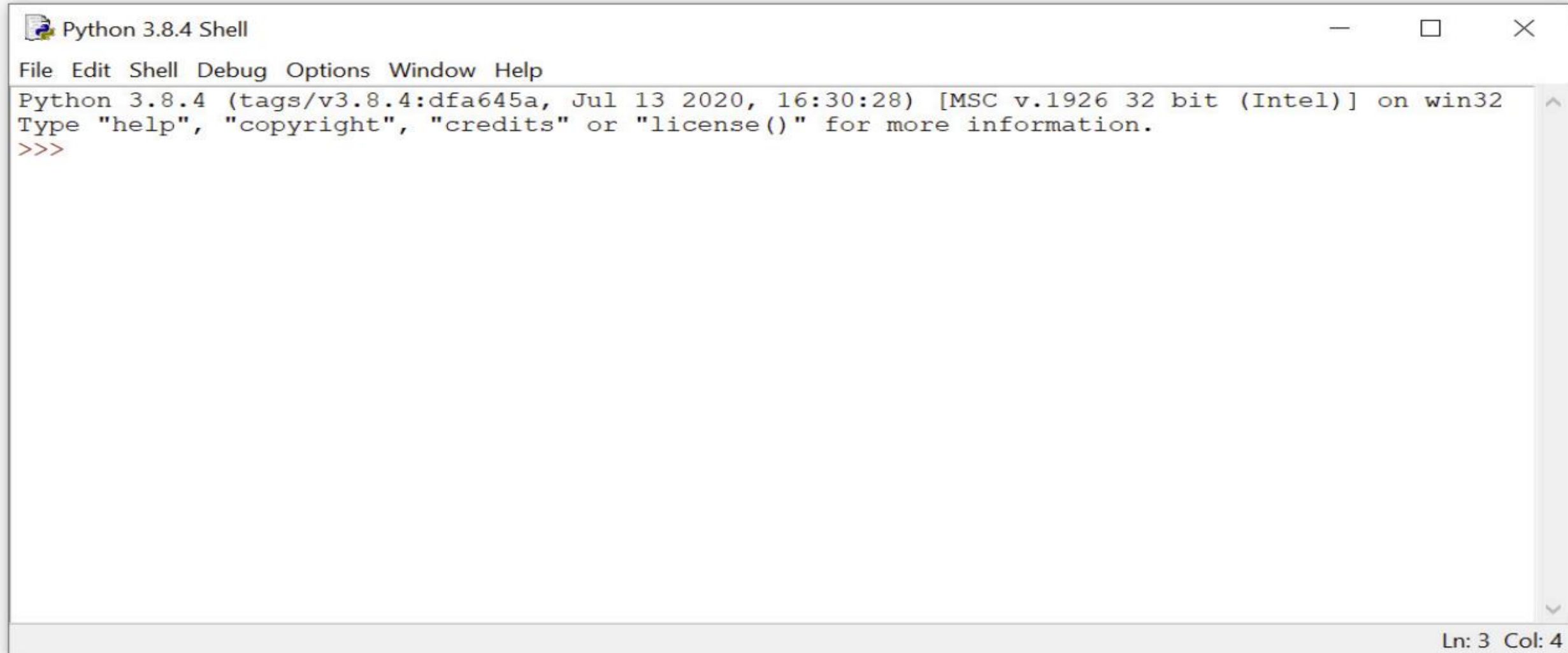
You can open IDLE in two steps:

1. Click the Start menu and locate the Python 3.9 folder.
2. Open the folder and select *IDLE (Python 3.9)*.

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IDLE opens a **Python shell** in a new window. The Python shell is an interactive environment that allows you to type in Python code and execute it immediately. It's a great way to get started with Python!

# The Python shell window looks like this:

A screenshot of the Python 3.8.4 Shell window. The window has a title bar with the text "Python 3.8.4 Shell" and standard window controls (minimize, maximize, close). Below the title bar is a menu bar with the following items: File, Edit, Shell, Debug, Options, Window, and Help. The main area of the window contains the following text: "Python 3.8.4 (tags/v3.8.4:dfa645a, Jul 13 2020, 16:30:28) [MSC v.1926 32 bit (Intel)] on win32", "Type 'help', 'copyright', 'credits' or 'license()' for more information.", and a prompt ">>>". A vertical scrollbar is visible on the right side of the window. At the bottom right corner, the status bar shows "Ln: 3 Col: 4".

```
Python 3.8.4 Shell
File Edit Shell Debug Options Window Help
Python 3.8.4 (tags/v3.8.4:dfa645a, Jul 13 2020, 16:30:28) [MSC v.1926 32 bit (Intel)] on win32
Type "help", "copyright", "credits" or "license()" for more information.
>>>
```

Ln: 3 Col: 4

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At the top of the window, you can see the version of Python that is running and some information about the operating system. If you see a version less than 3.9, then you may need to revisit the installation instructions in the previous section.



The `>>>` symbol that you see is called a **prompt**. Whenever you see this, it means that Python is waiting for you to give it some instructions.

Be aware that if you have installed Python through some other means, such as Anaconda Python, you may encounter problems when running some of the code examples.

## **2.3 macOS**

Follow these steps to install Python 3 and open IDLE on macOS.

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### **Install Python**

To install the latest version of Python 3 on macOS, download and run the official installer from the [Python.org](https://www.python.org) website.

#### **Step 1: Download the Python 3 Installer**

Open a web browser and navigate to the following URL:

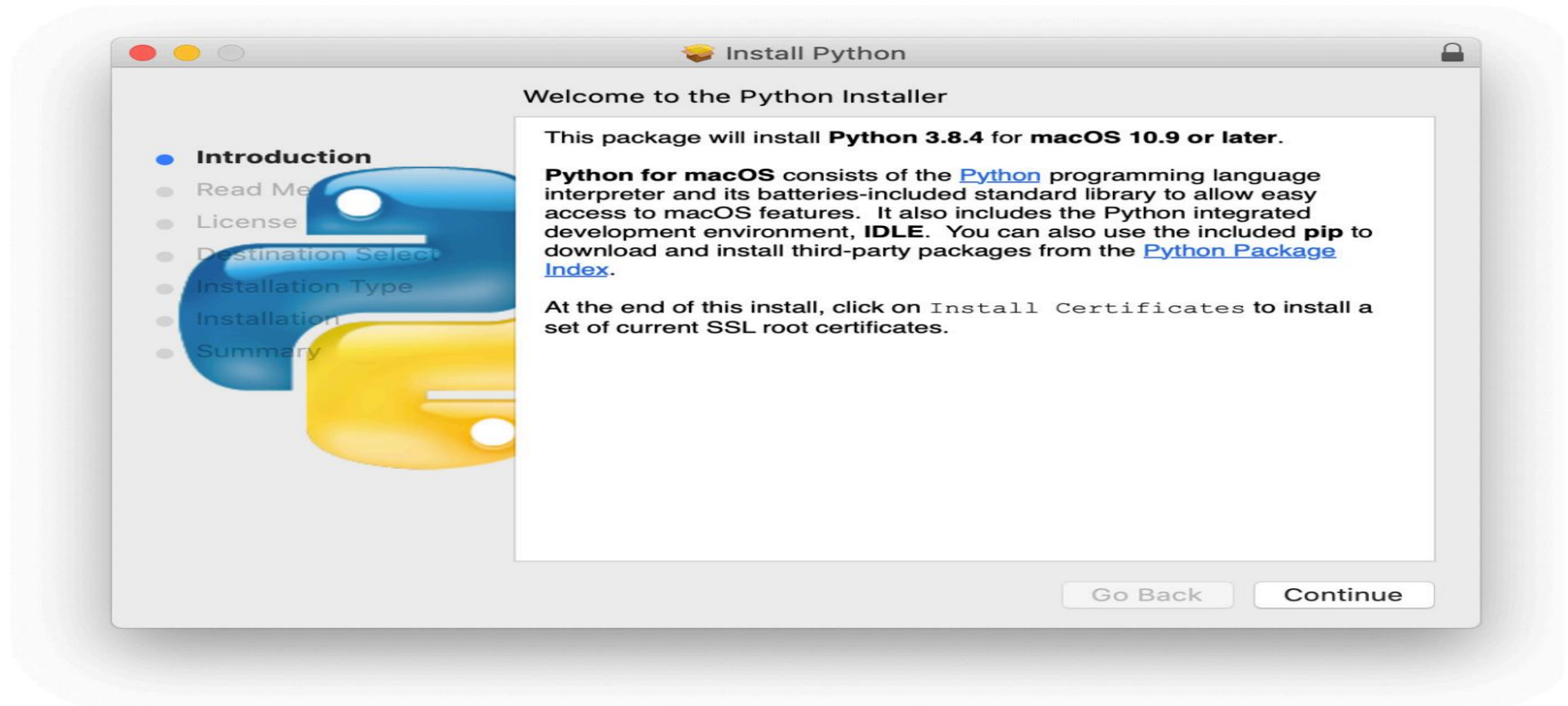
<https://www.python.org/downloads/mac-osx/>

Click *Latest Python 3 Release - Python 3.x.x* located beneath the “Python Releases for Mac OS X” heading near the top of the page. As of this writing, the latest version was Python 3.9.

Then scroll to the bottom of the page and click *macOS 64-bit installer* to start the download.

## Step 2: Run the Installer

Open Finder and double-click the downloaded file to run the installer. A dialog box that looks like the following will appear:



Press  a few times until you are asked to agree to the software license agreement. Then click .

You'll be shown a window that tells you where Python will be installed and how much space it will take. You most likely don't want to change the default location, so go ahead and click  to start the installation.

When the installer is finished copying files, click  to close the installer window.

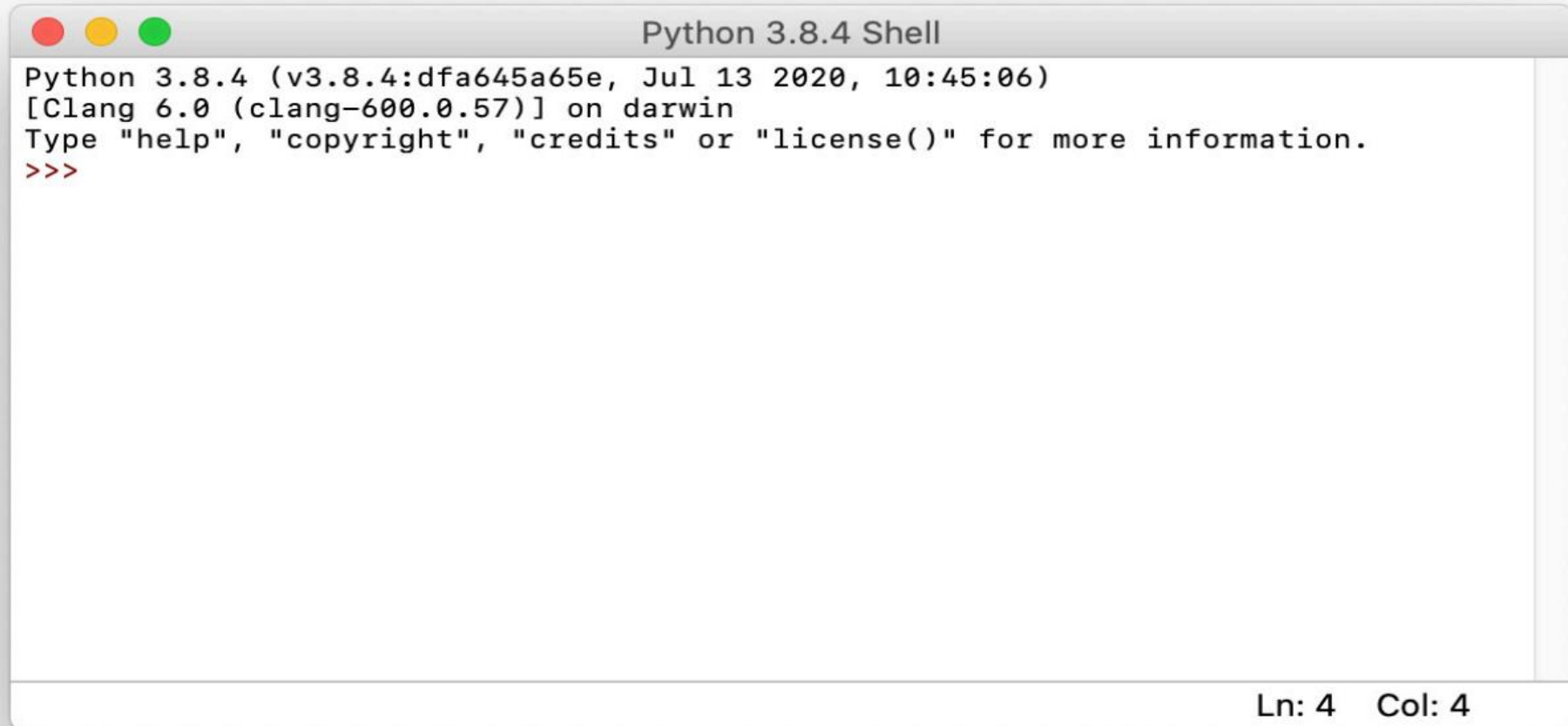
# Open IDLE

You can open IDLE in three steps:

1. Open Finder and click *Applications*.
2. Double-click the Python 3.9 folder.
3. Double-click the IDLE icon.

IDLE opens a **Python shell** in a new window. The Python shell is an interactive environment that allows you to type in Python code and execute it immediately. It's a great way to get started with Python!

The Python shell window looks like this:

A screenshot of a Python 3.8.4 Shell window. The window has a title bar with three colored buttons (red, yellow, green) on the left and the text "Python 3.8.4 Shell" in the center. The main content area displays the following text: "Python 3.8.4 (v3.8.4:dfa645a65e, Jul 13 2020, 10:45:06)", "[Clang 6.0 (clang-600.0.57)] on darwin", "Type \"help\", \"copyright\", \"credits\" or \"license()\" for more information.", and a red prompt ">>>". The status bar at the bottom right shows "Ln: 4 Col: 4".

```
Python 3.8.4 (v3.8.4:dfa645a65e, Jul 13 2020, 10:45:06)
[Clang 6.0 (clang-600.0.57)] on darwin
Type "help", "copyright", "credits" or "license()" for more information.
>>>
```

Ln: 4 Col: 4



At the top of the window, you can see the version of Python that is running and some information about the operating system. If you see a version less than 3.9, then you may need to revisit the installation instructions in the previous section.

The `>>>` symbol that you see is called a **prompt**. Whenever you see this, it means that Python is waiting for you to give it some instructions.



# Ubuntu Linux

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# Ubuntu Linux

## Install Python

There's a good chance that your Ubuntu distribution already has Python installed, but it probably won't be the latest version, and it may be Python 2 instead of Python 3.

To find out what version(s) you have, open a terminal window and try the following commands:

```
$ python --version  
$ python3 --version
```

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One or more of these commands should respond with a version, as below:

```
$ python3 --version  
Python 3.9.0
```

Your version number may vary. If the version shown is Python 2.x or a version of Python 3 that is less than 3.9, then you want to install the latest version. How you install Python on Ubuntu depends on which version of Ubuntu you're running. You can determine your local Ubuntu version by running the following command:

```
$ lsb_release -a  
No LSB modules are available.  
Distributor ID: Ubuntu  
Description:    Ubuntu 18.04.1 LTS  
Release:        18.04  
Codename:       bionic
```

Look at the version number next to Release in the console output, and follow the corresponding instructions below.

## **Ubuntu 18.04 or Greater**

Ubuntu version 18.04 does not come with Python 3.9 by default, but it is in the Universe repository. You can install it with the following commands in the Terminal application:

```
$ sudo apt-get update
```

```
$ sudo apt-get install python3.9 idle-python3.9 python3-pip
```

## Ubuntu 17 and Lower

For Ubuntu versions 17 and lower, Python 3.9 is not in the Universe repository. You need to get it from a Personal Package Archive (PPA). To install Python from the [deadsnakes PPA](#), run the following commands in the Terminal application:

```
$ sudo add-apt-repository ppa:deadsnakes/ppa  
$ sudo apt-get update  
$ sudo apt-get install python3.9 idle-python3.9 python3-pip
```

You can check that the correct version of Python was installed by running `python3 --version`. If you see a version number less than 3.9, then you may need to type `python3.9 --version`. Now you can open IDLE and get ready to write your first Python program.

# Open IDLE

You can open IDLE from the command line by typing the following:

```
$ idle-python3.9
```

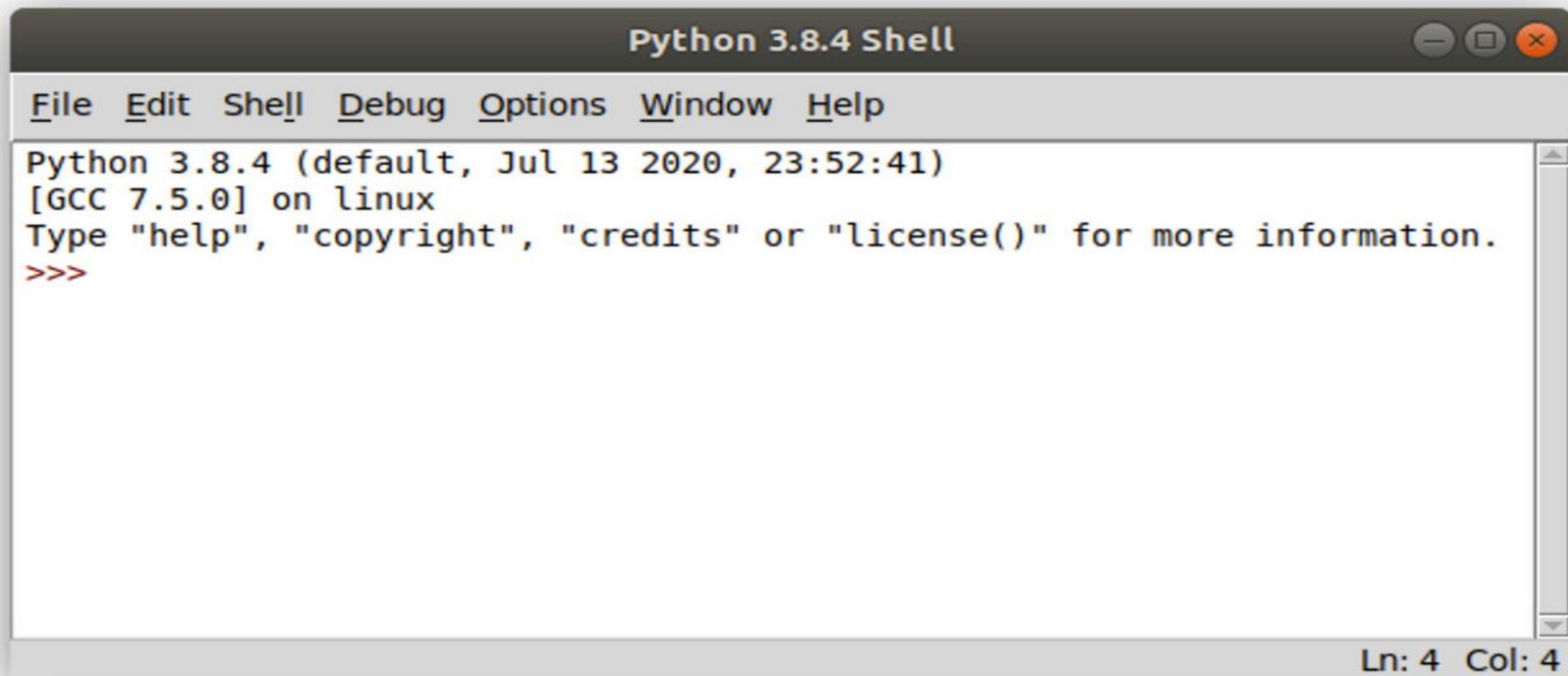


On some Linux installations, you can open IDLE with the following shortened command:

```
$ idle3
```

IDLE opens a **Python shell** in a new window. The Python shell is an interactive environment that allows you to type in Python code and execute it immediately. It's a great way to get started with Python!

The Python shell window looks like this:

A screenshot of a terminal window titled "Python 3.8.4 Shell". The window has a dark gray title bar with standard Linux window controls (minimize, maximize, close) on the right. Below the title bar is a menu bar with the following items: File, Edit, Shell, Debug, Options, Window, and Help. The main area of the window is white and contains the following text: "Python 3.8.4 (default, Jul 13 2020, 23:52:41)", "[GCC 7.5.0] on linux", "Type 'help', 'copyright', 'credits' or 'license()' for more information.", and a red prompt ">>>". A vertical scrollbar is visible on the right side of the text area. At the bottom right of the window, the status bar shows "Ln: 4 Col: 4".

```
Python 3.8.4 Shell
```

```
File Edit Shell Debug Options Window Help
```

```
Python 3.8.4 (default, Jul 13 2020, 23:52:41)
```

```
[GCC 7.5.0] on linux
```

```
Type "help", "copyright", "credits" or "license()" for more information.
```

```
>>>
```

```
Ln: 4 Col: 4
```

At the top of the window, you can see the version of Python that is running and some information about the operating system. If you see a version less than 3.9, then you may need to revisit the installation instructions in the previous section.

## Important

If you open IDLE with the `idle3` command and see a version less than 3.9 displayed in the Python shell window, then you'll need to open IDLE with the `idle-python3.9` command.