

Anaconda Tutorial

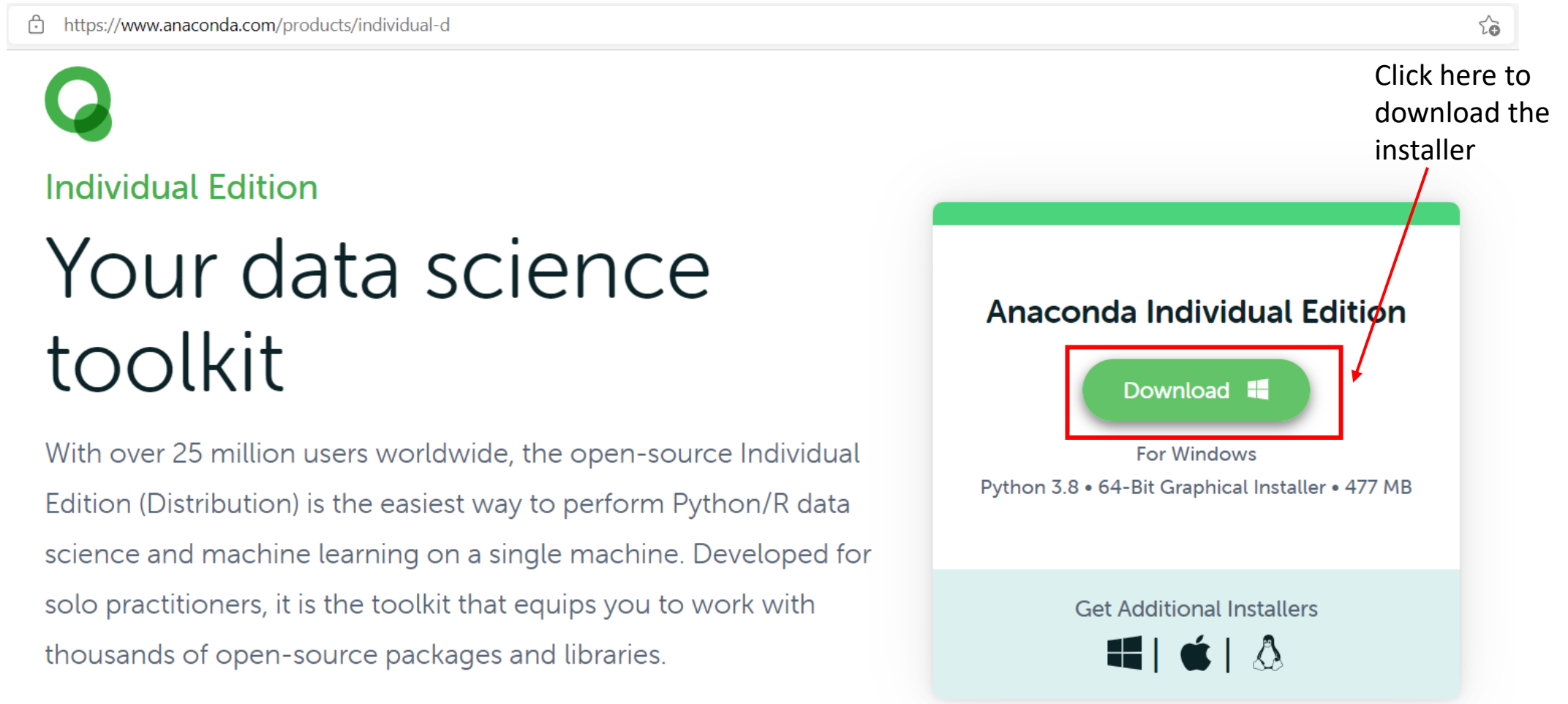
By Peng Xu

COMP3278A 2022

Installation guide for Windows user


1. Download Anaconda Installer

You can find anaconda installer by searching anaconda in your search engine or directly go to [Anaconda | Individual Edition](https://www.anaconda.com/products/individual)



The screenshot shows the Anaconda Individual Edition download page. The browser address bar displays <https://www.anaconda.com/products/individual-d>. The page features the Anaconda logo, the text "Individual Edition", and the heading "Your data science toolkit". A paragraph describes the toolkit as an open-source Individual Edition (Distribution) for Python/R data science and machine learning. On the right, a card titled "Anaconda Individual Edition" contains a green "Download" button with a Windows icon, which is highlighted by a red rectangle. A red arrow points from the text "Click here to download the installer" to this button. Below the button, it says "For Windows" and "Python 3.8 • 64-Bit Graphical Installer • 477 MB". At the bottom of the card, there is a section "Get Additional Installers" with icons for Windows, macOS, and Linux.

<https://www.anaconda.com/products/individual-d>




Individual Edition

Your data science toolkit

With over 25 million users worldwide, the open-source Individual Edition (Distribution) is the easiest way to perform Python/R data science and machine learning on a single machine. Developed for solo practitioners, it is the toolkit that equips you to work with thousands of open-source packages and libraries.




Anaconda Individual Edition

Download 

For Windows

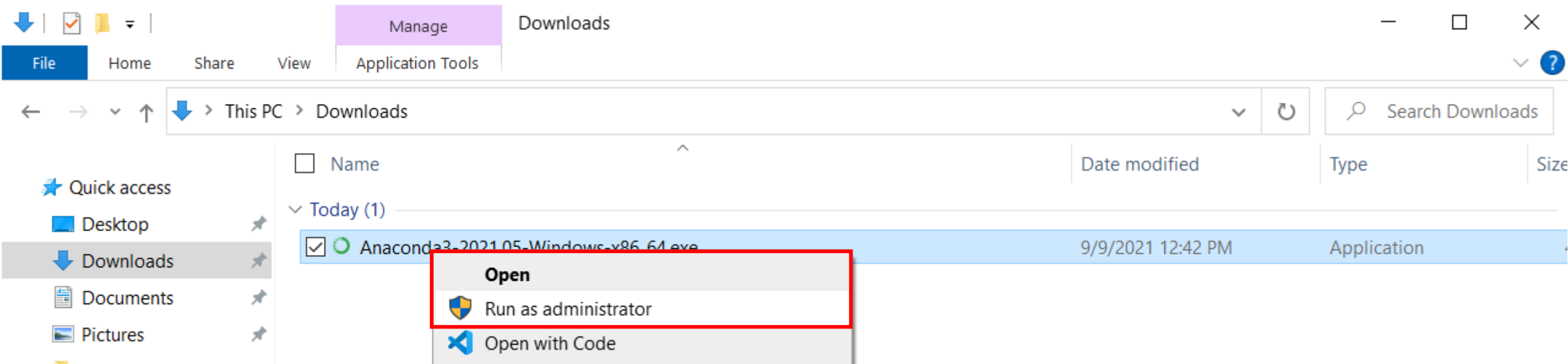
Python 3.8 • 64-Bit Graphical Installer • 477 MB

Get Additional Installers

 |  | 

2. Install Anaconda

Open the installer directly or run as administrator if you do not have permission to install anaconda in the desired location.



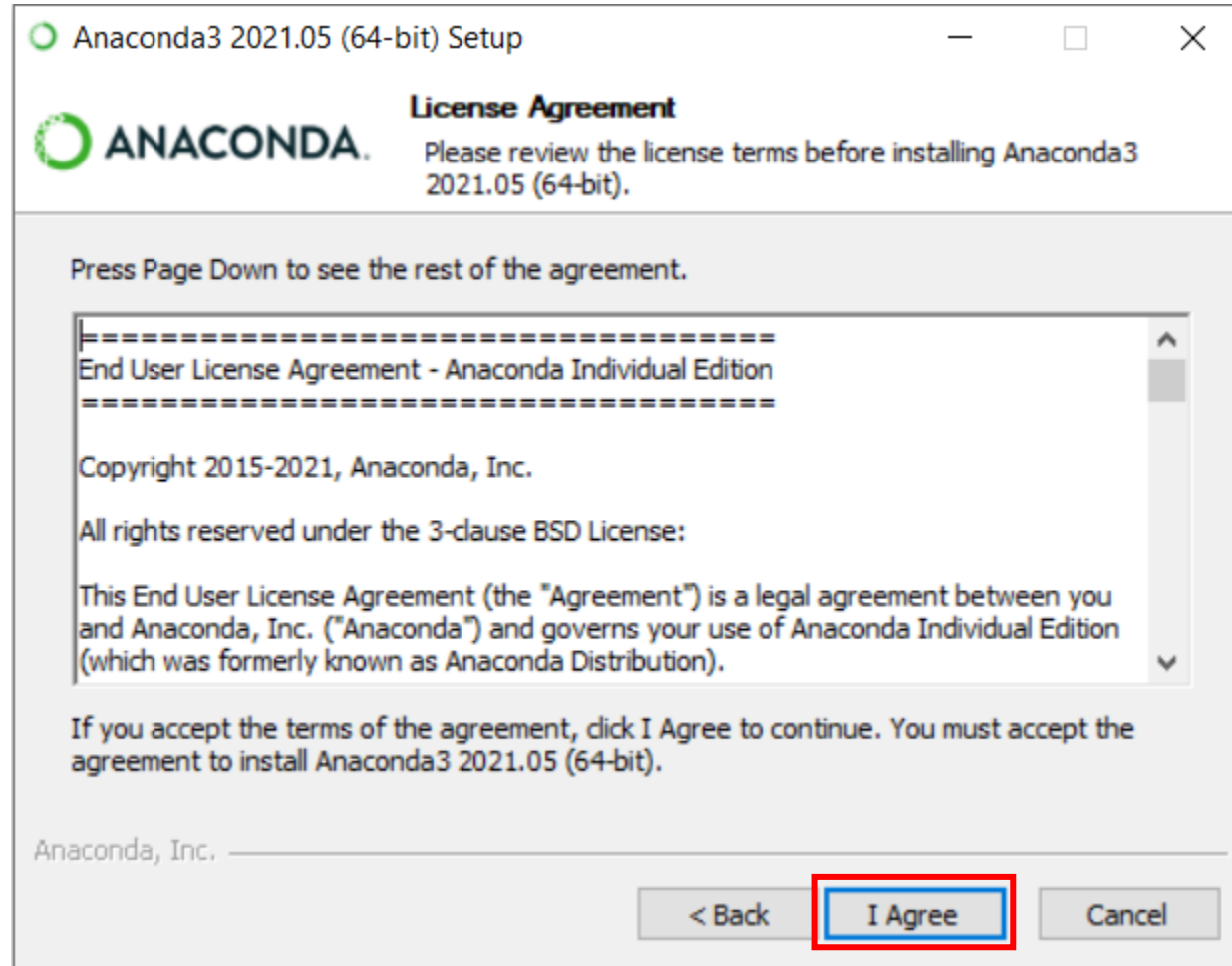
2. Install Anaconda

Click the Next button directly.



2. Install Anaconda

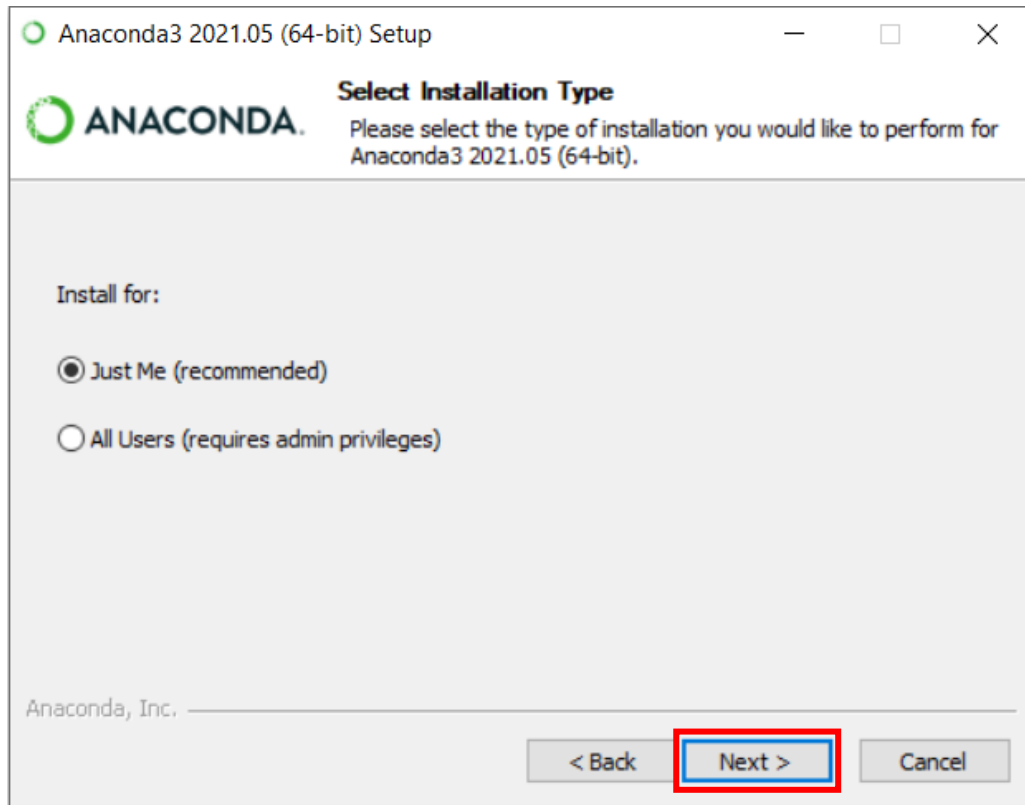
Read the agreement and Click the “I Agree” button.



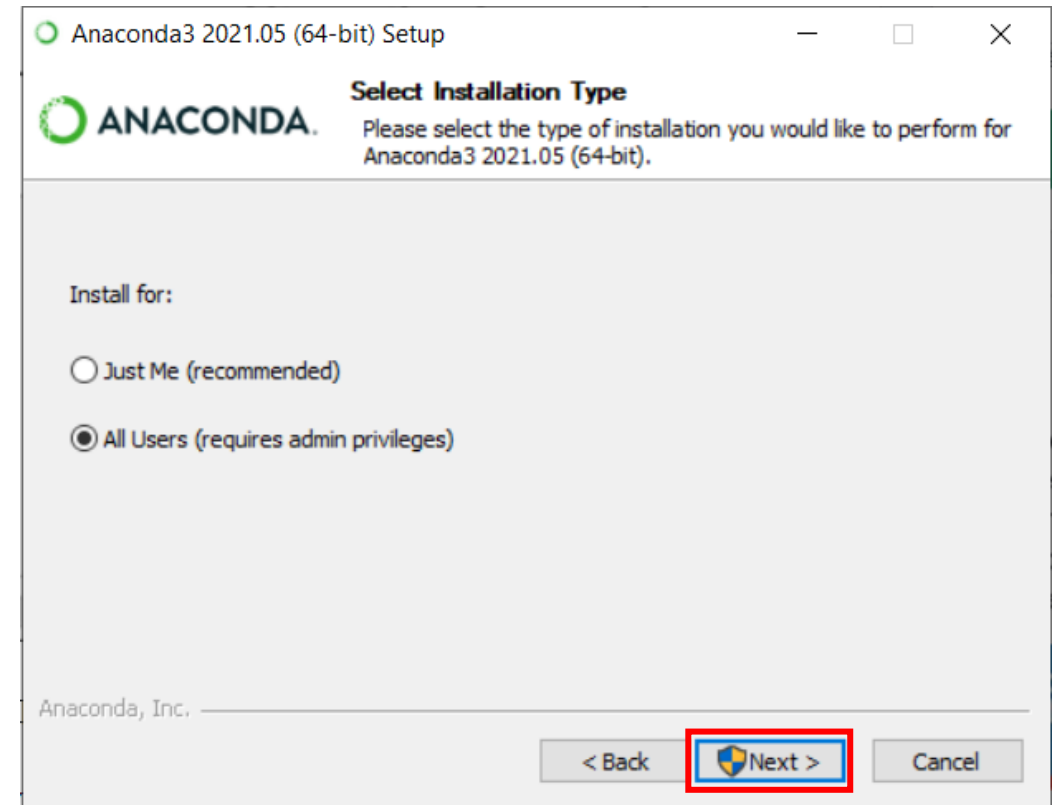
2. Install Anaconda

Choose “Just Me” or “All Users”. If you’re not sure which one to choose, please choose “Just Me”. Then click the Next button.

Recommended Approach



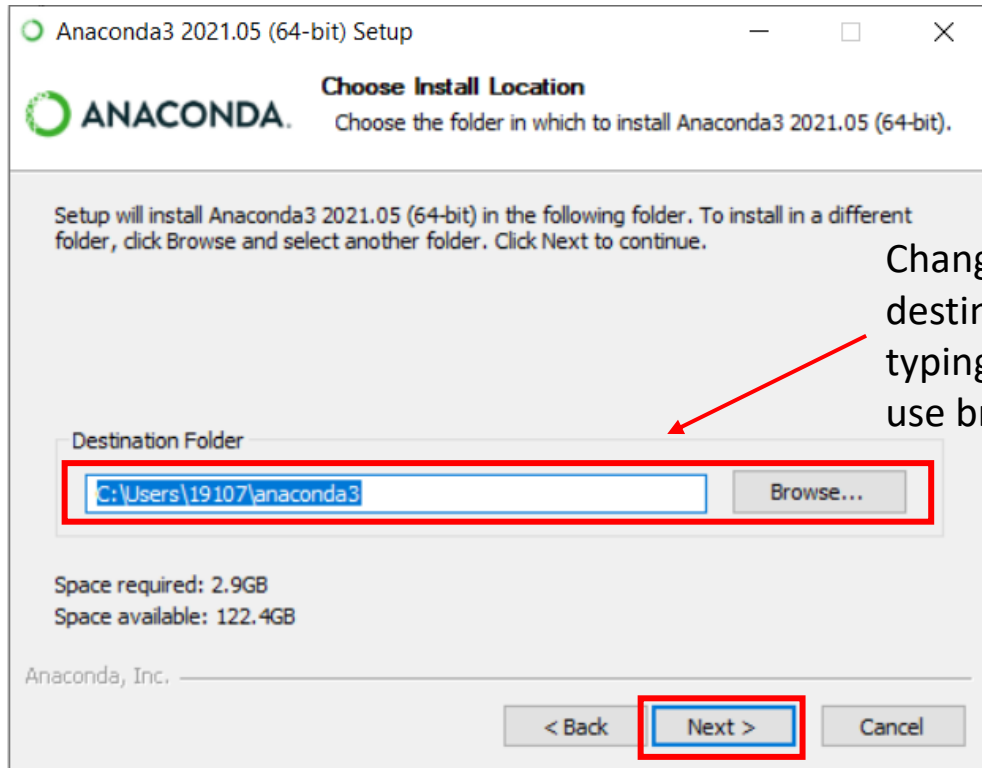
Alternative Approach



2. Install Anaconda

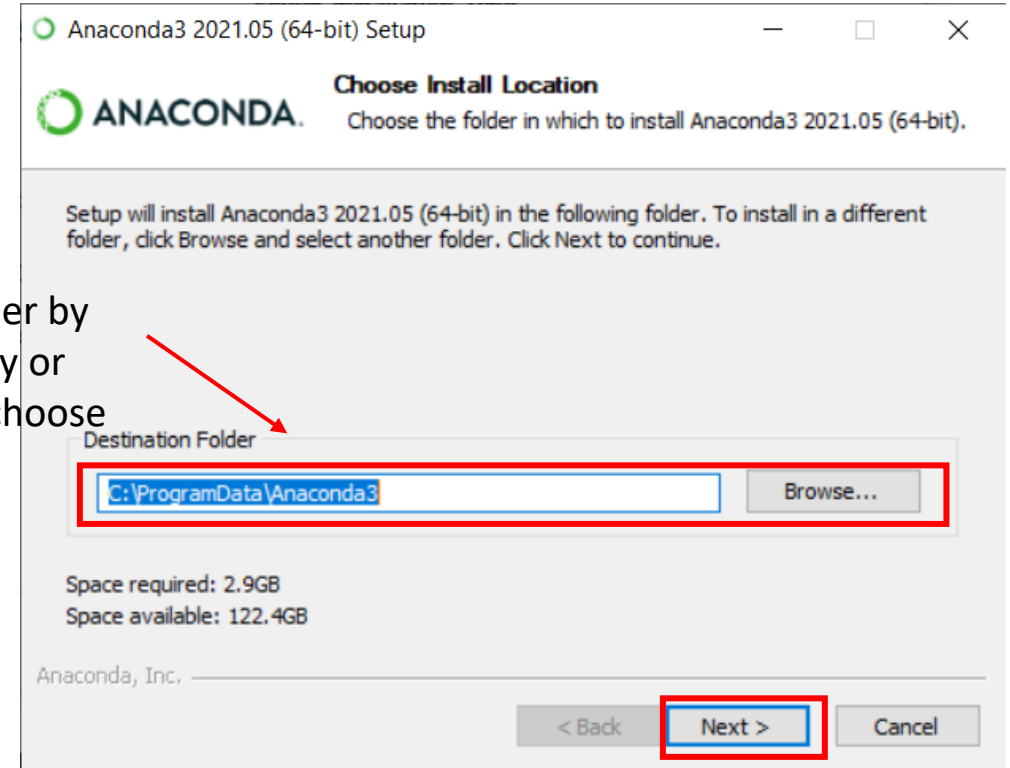
Choose your destination folder and click the Next button.

Destination Folder Example (Just Me)



Change your destination folder by typing in directly or use browse to choose

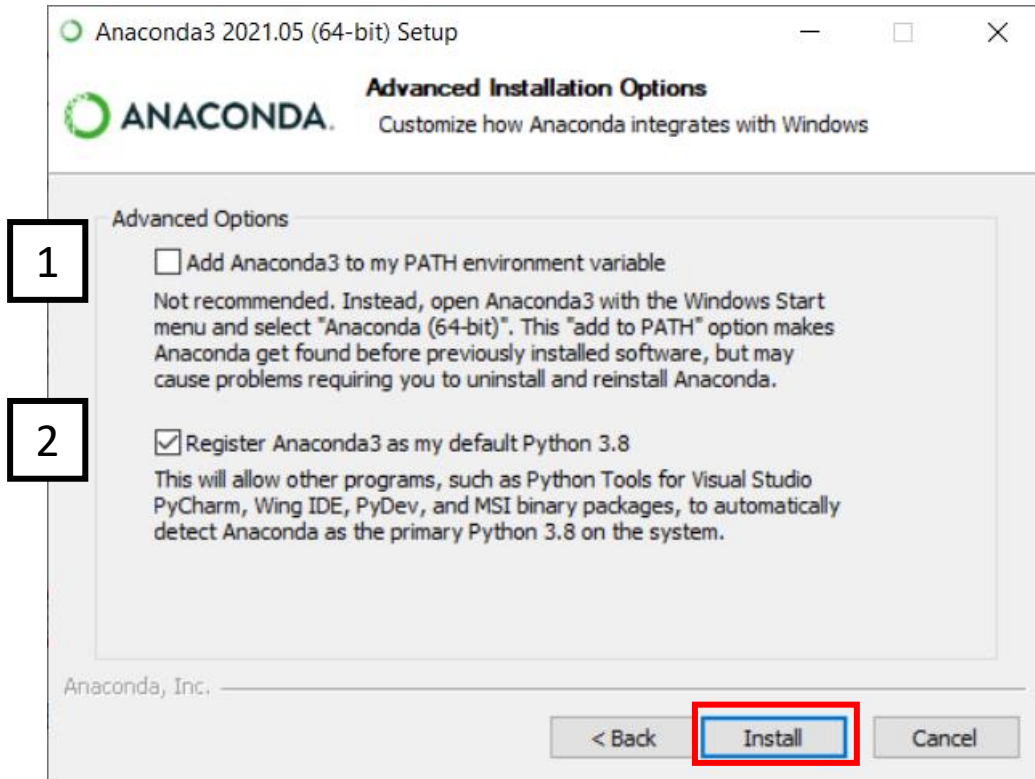
Destination Folder Example (All Users)



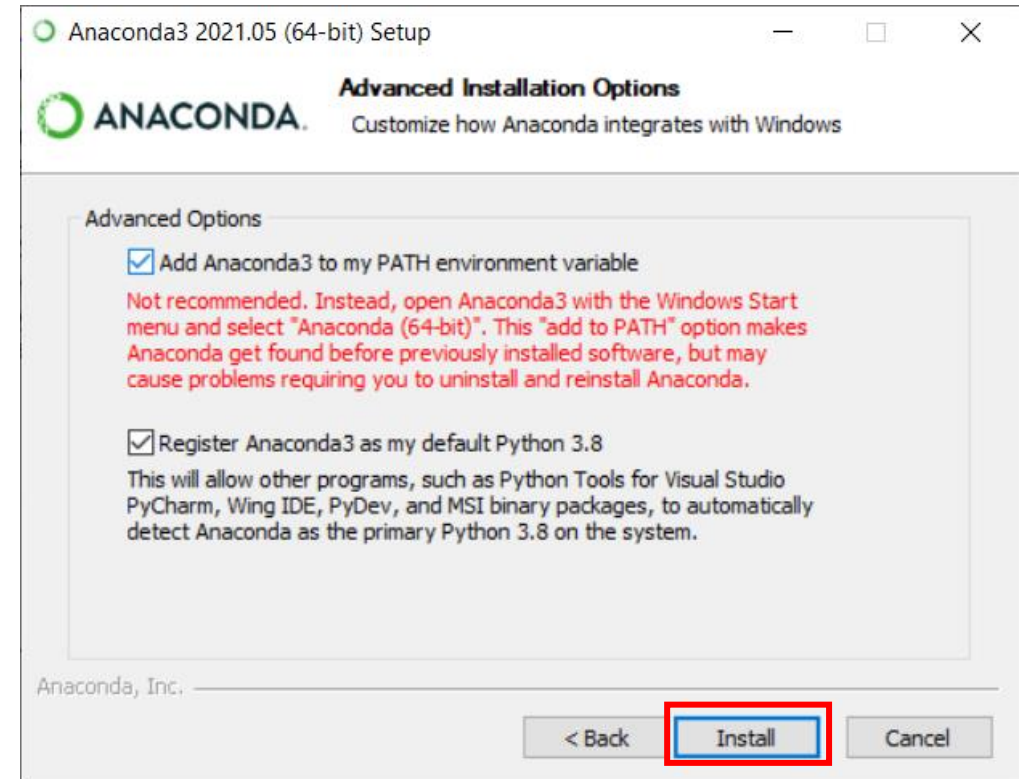
2. Install Anaconda

Choosing 1 means your PATH environment variable will be edited and it may lead to some errors if you already have a python environment in your computer. You can also add Anaconda3 into your PATH environment variable manually if you do not choose 1. Then click the Install button.

Recommended Approach

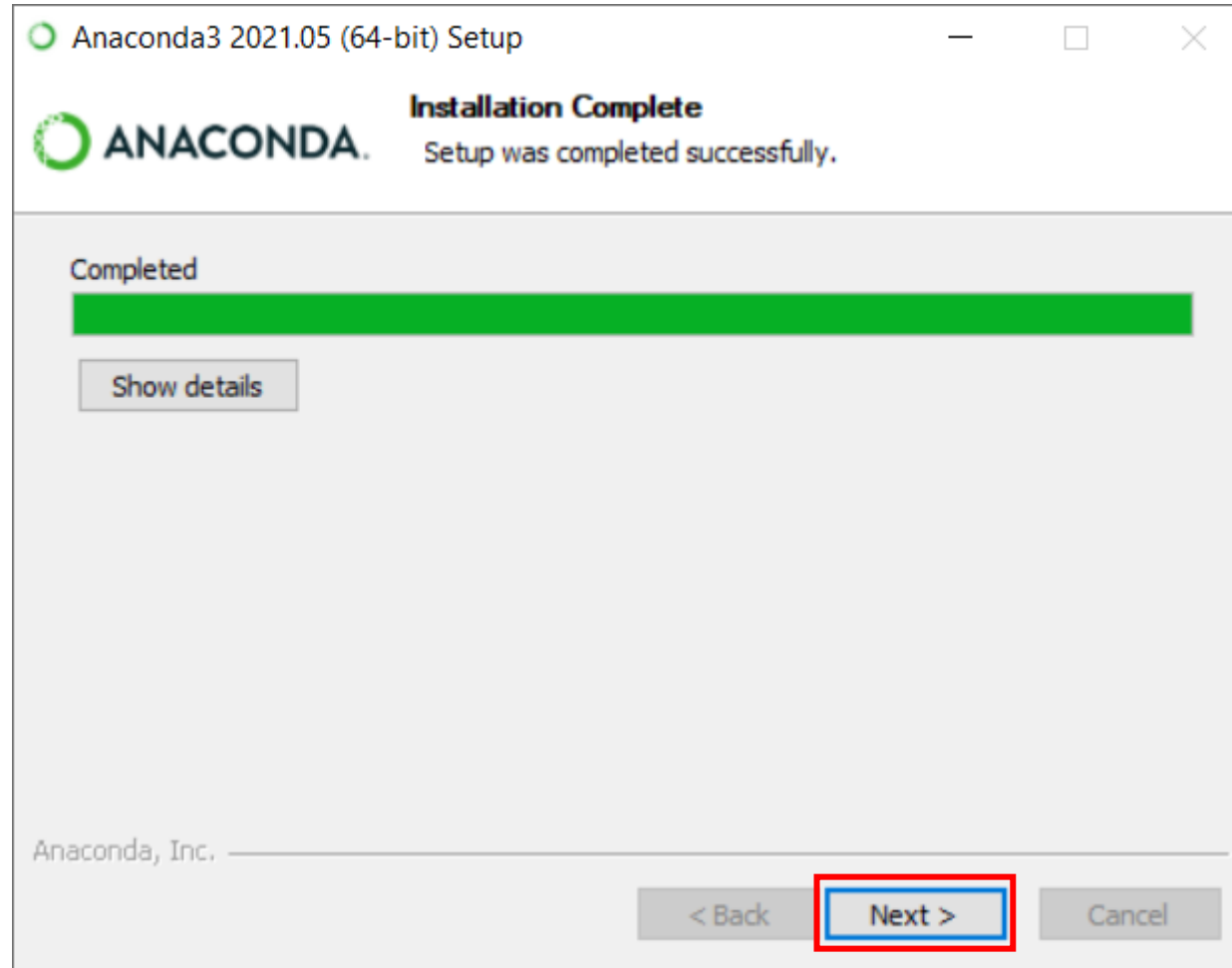


Alternative Approach



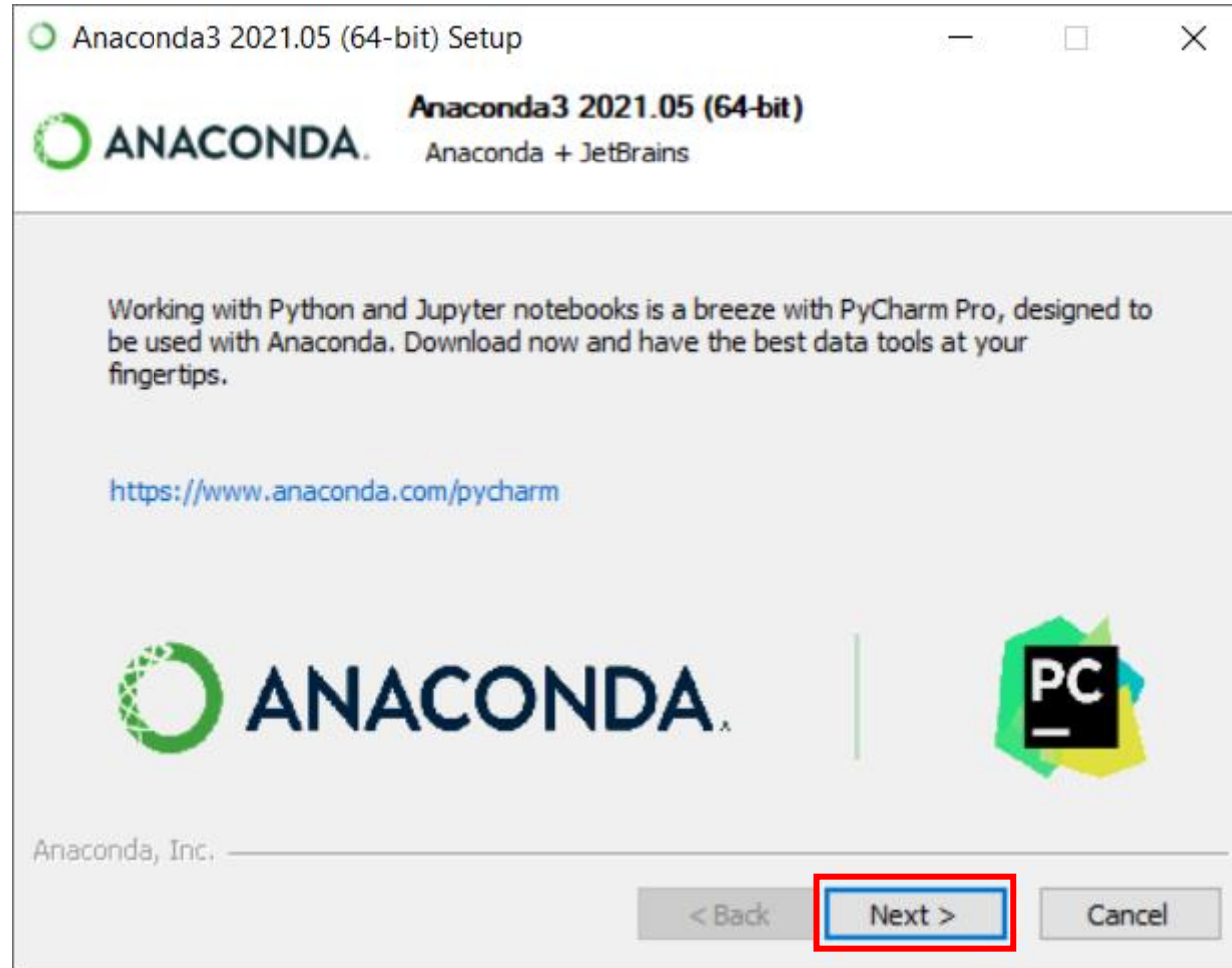
2. Install Anaconda

Click the Next button directly.



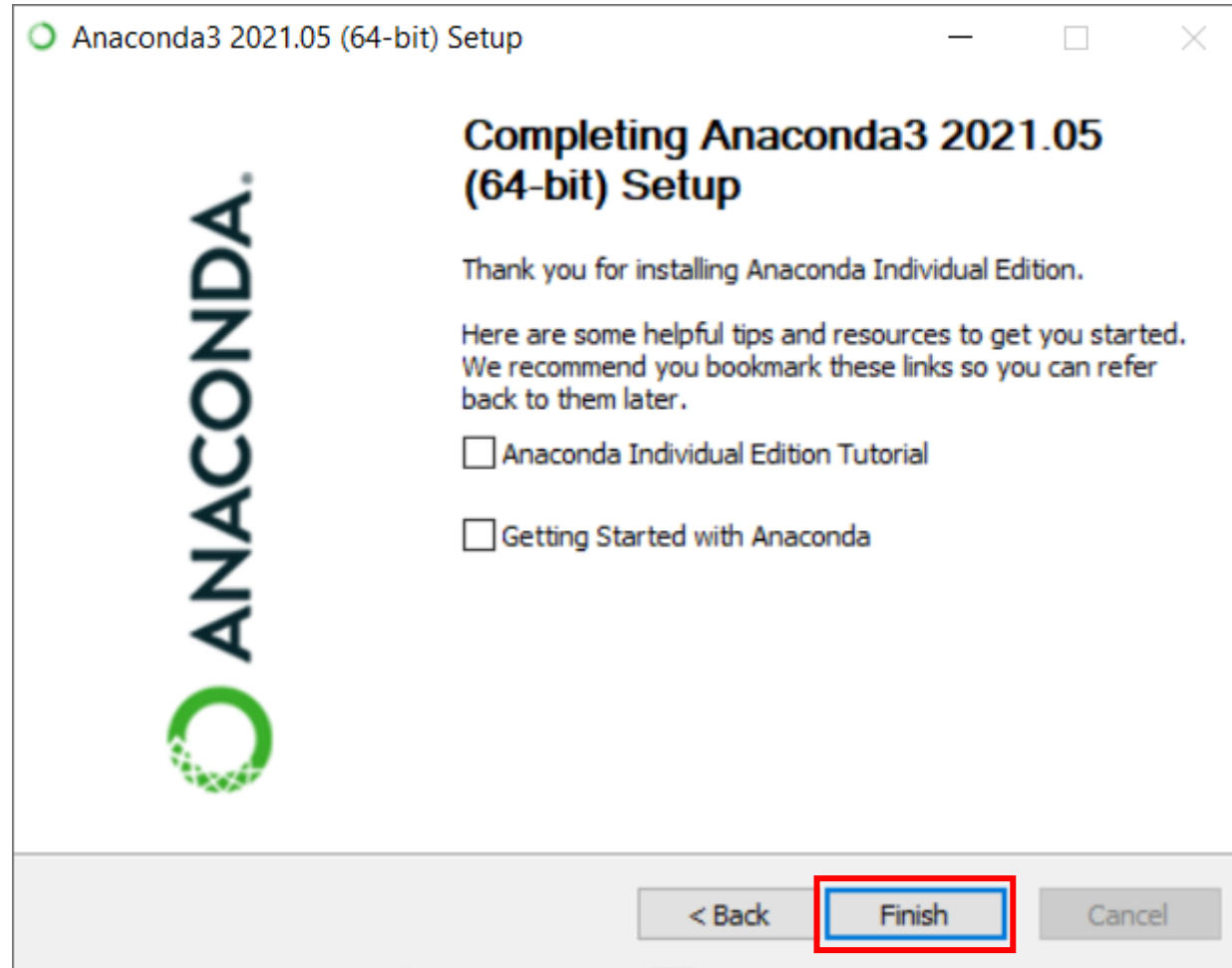
2. Install Anaconda

You can install PyCharm if you want. Then click the Next button.



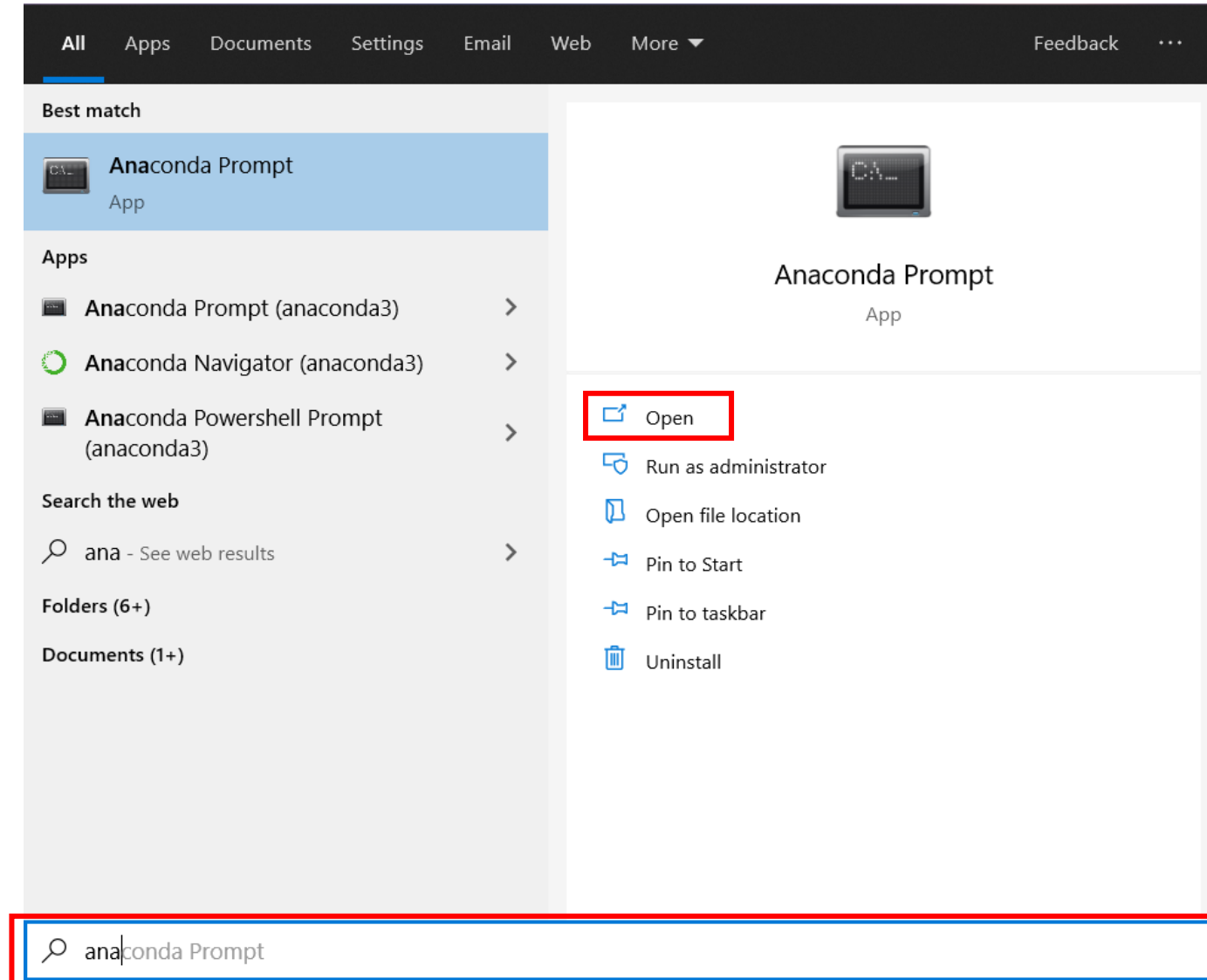
2. Install Anaconda

Click the Finish button.



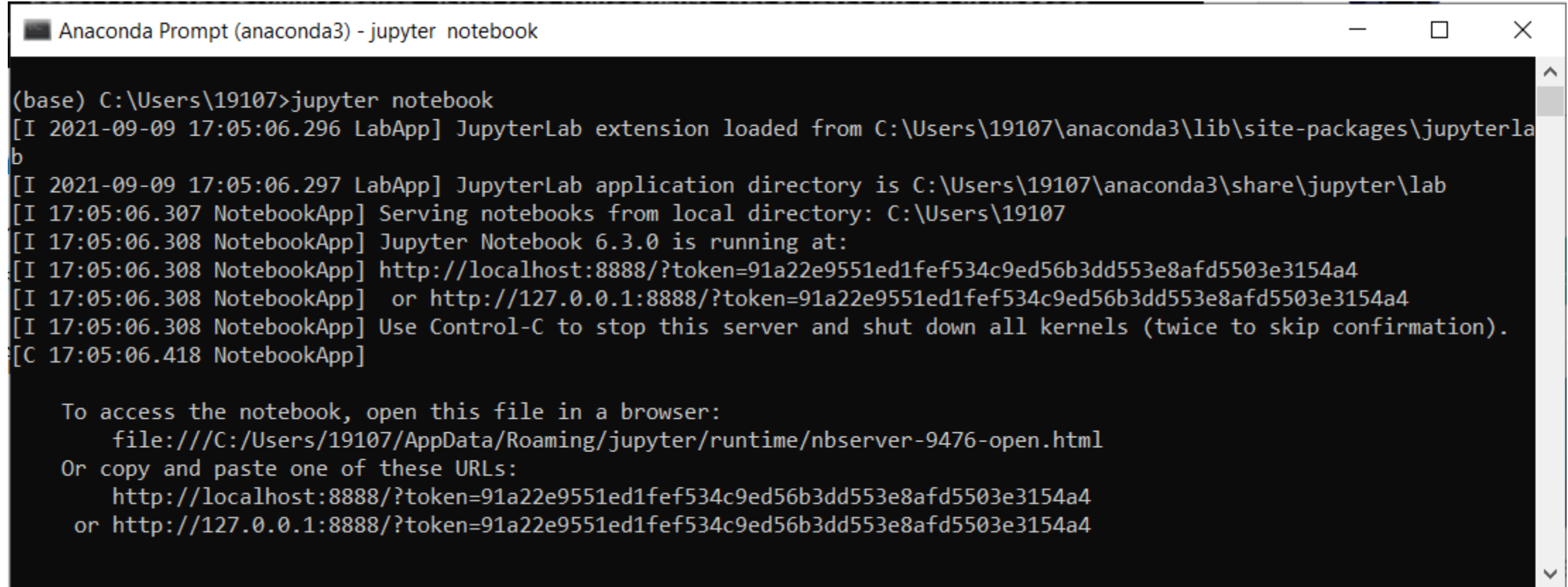
3. Check your installation

Press Win+Q and search Anaconda Prompt.



3. Check your installation

Input “jupyter notebook” and press Enter. If you get an output similar to the image below, congratulations on your successful installation.



```
Anaconda Prompt (anaconda3) - jupyter notebook

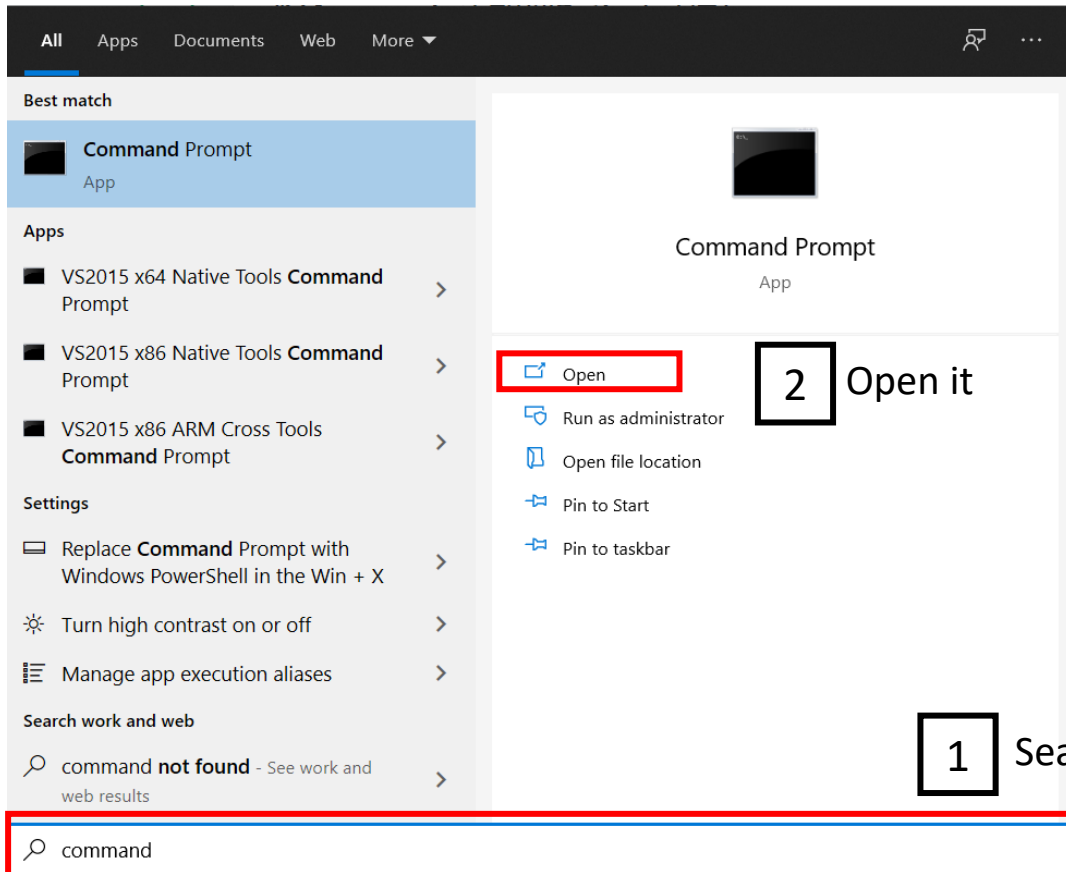
(base) C:\Users\19107>jupyter notebook
[I 2021-09-09 17:05:06.296 LabApp] JupyterLab extension loaded from C:\Users\19107\anaconda3\lib\site-packages\jupyterlab
[I 2021-09-09 17:05:06.297 LabApp] JupyterLab application directory is C:\Users\19107\anaconda3\share\jupyter\lab
[I 17:05:06.307 NotebookApp] Serving notebooks from local directory: C:\Users\19107
[I 17:05:06.308 NotebookApp] Jupyter Notebook 6.3.0 is running at:
[I 17:05:06.308 NotebookApp] http://localhost:8888/?token=91a22e9551ed1fef534c9ed56b3dd553e8afd5503e3154a4
[I 17:05:06.308 NotebookApp] or http://127.0.0.1:8888/?token=91a22e9551ed1fef534c9ed56b3dd553e8afd5503e3154a4
[I 17:05:06.308 NotebookApp] Use Control-C to stop this server and shut down all kernels (twice to skip confirmation).
[C 17:05:06.418 NotebookApp]

To access the notebook, open this file in a browser:
    file:///C:/Users/19107/AppData/Roaming/jupyter/runtime/nbserver-9476-open.html
Or copy and paste one of these URLs:
    http://localhost:8888/?token=91a22e9551ed1fef534c9ed56b3dd553e8afd5503e3154a4
    or http://127.0.0.1:8888/?token=91a22e9551ed1fef534c9ed56b3dd553e8afd5503e3154a4
```

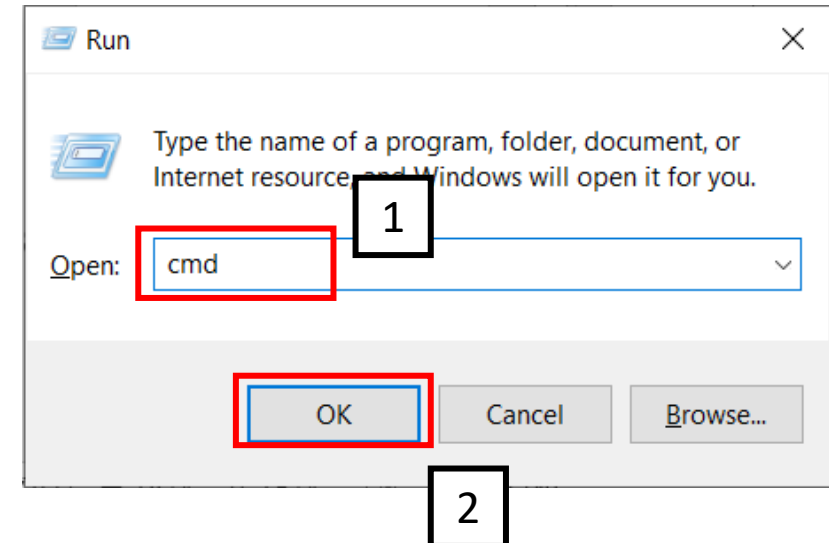
4. Add Anaconda3 into your PATH environment variable (optional)

You will need this part if you do not choose “Add Anaconda3 into your PATH environment variable” and you want to use anaconda in your Command Prompt. Firstly, open your Command Prompt.

Press Win+Q



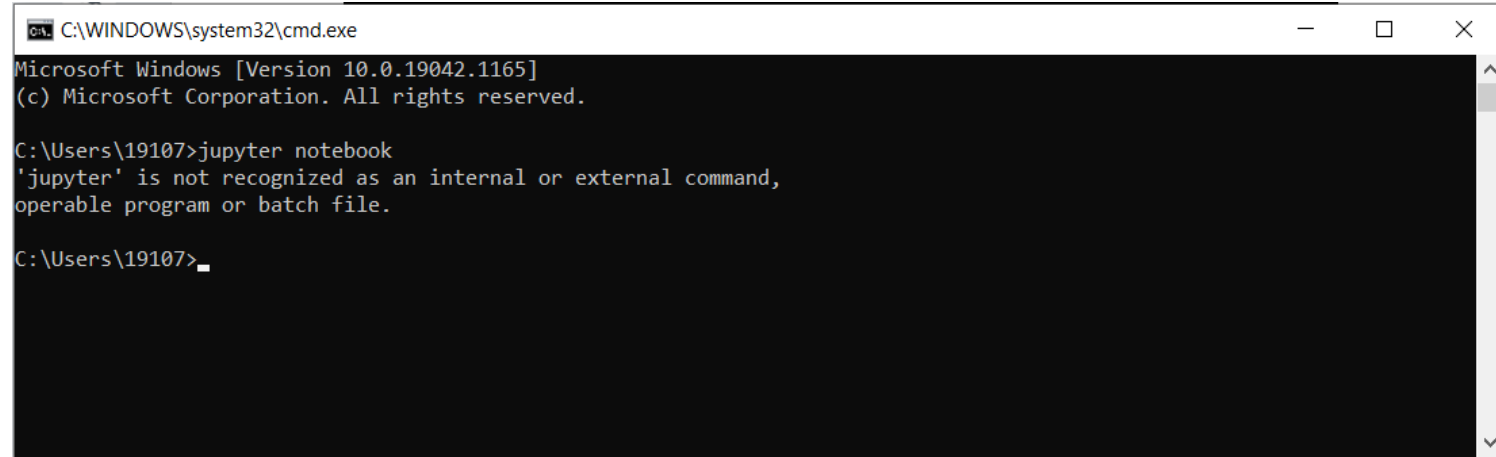
Press Win+R



4. Add Anaconda3 into your PATH environment variable (optional)

Input “Jupyter notebook” to check whether you have added Anaconda into your PATH.

If you get an output similar to this image, Anaconda have not been added into your PATH.

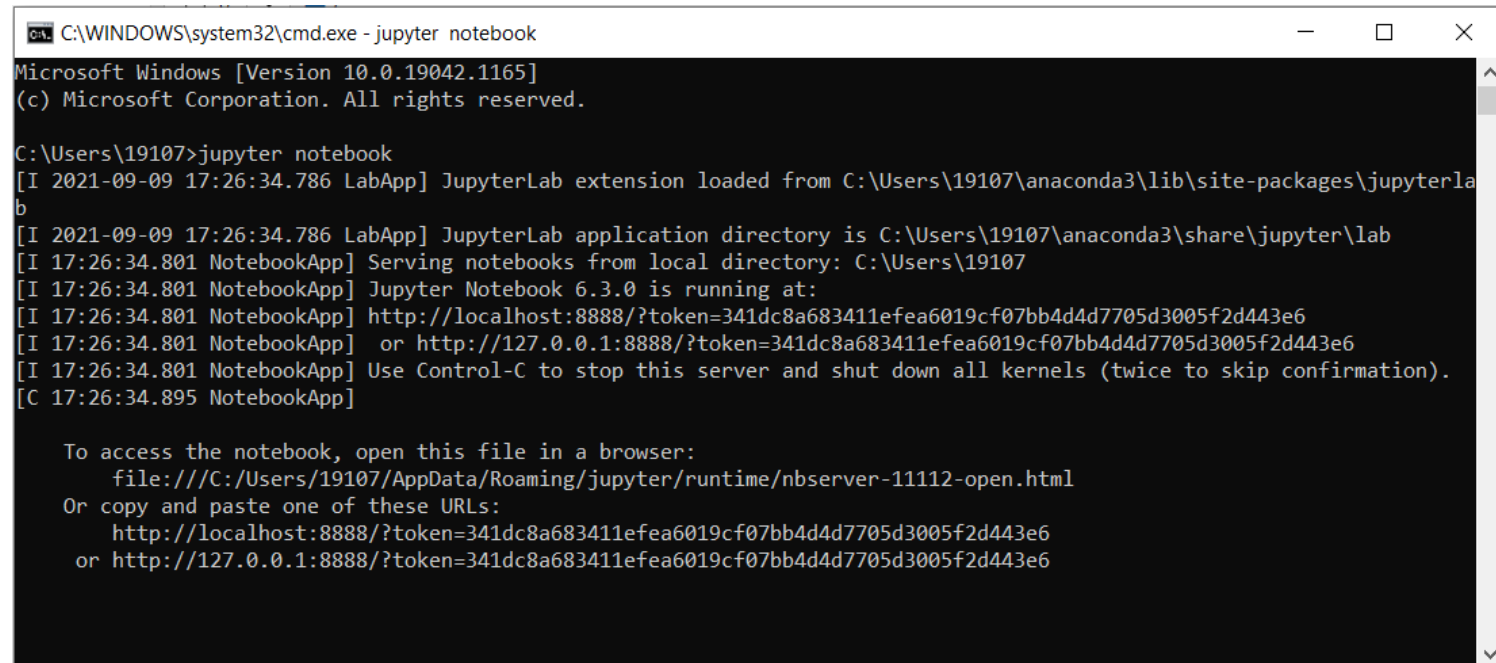


```
C:\WINDOWS\system32\cmd.exe
Microsoft Windows [Version 10.0.19042.1165]
(c) Microsoft Corporation. All rights reserved.

C:\Users\19107>jupyter notebook
'jupyter' is not recognized as an internal or external command,
operable program or batch file.

C:\Users\19107>
```

If you get an output similar to this image, Anaconda have already been added into your PATH.



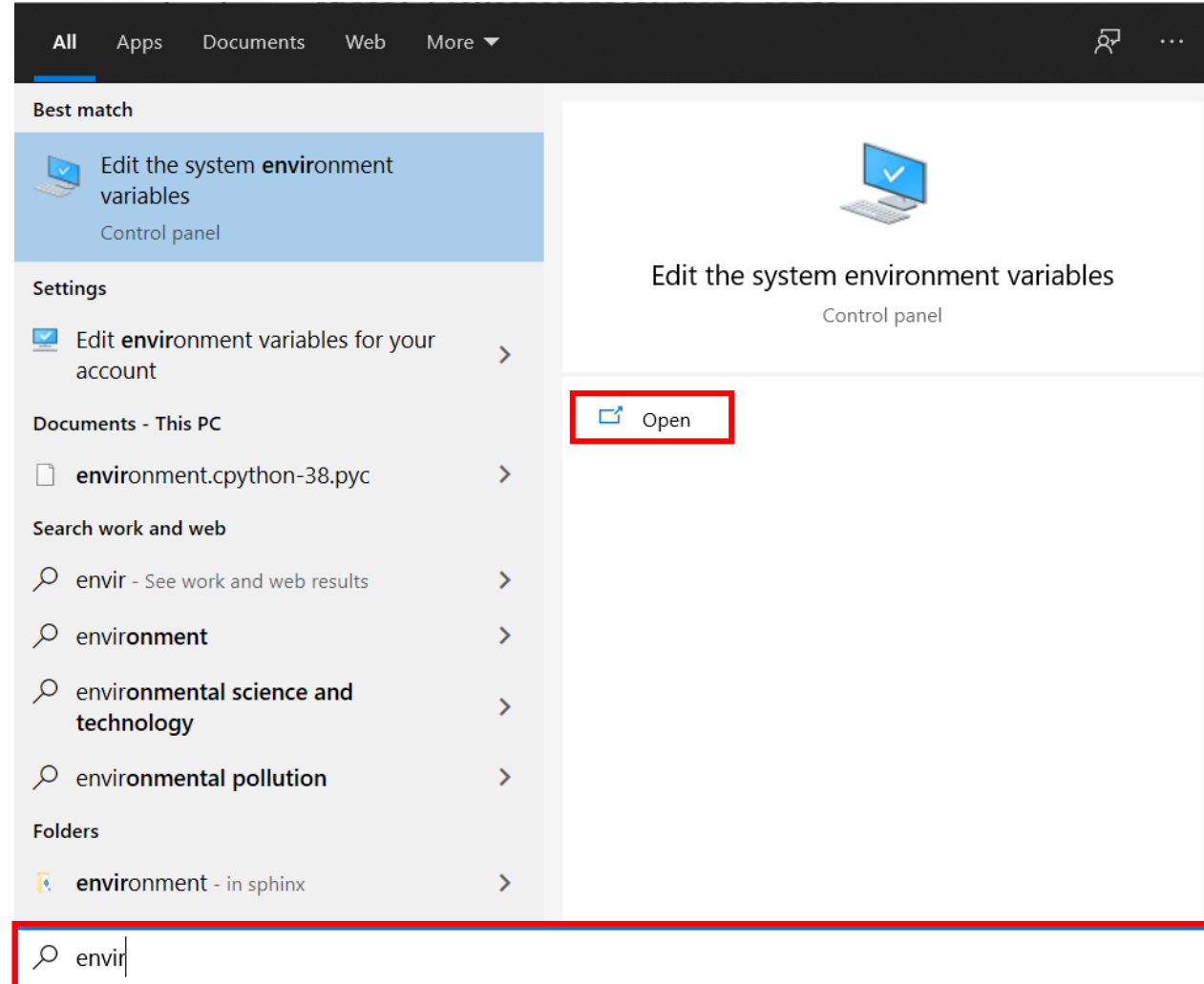
```
C:\WINDOWS\system32\cmd.exe - jupyter notebook
Microsoft Windows [Version 10.0.19042.1165]
(c) Microsoft Corporation. All rights reserved.

C:\Users\19107>jupyter notebook
[I 2021-09-09 17:26:34.786 LabApp] JupyterLab extension loaded from C:\Users\19107\anaconda3\lib\site-packages\jupyterlab
[I 2021-09-09 17:26:34.786 LabApp] JupyterLab application directory is C:\Users\19107\anaconda3\share\jupyter\lab
[I 17:26:34.801 NotebookApp] Serving notebooks from local directory: C:\Users\19107
[I 17:26:34.801 NotebookApp] Jupyter Notebook 6.3.0 is running at:
[I 17:26:34.801 NotebookApp] http://localhost:8888/?token=341dc8a683411efea6019cf07bb4d4d7705d3005f2d443e6
[I 17:26:34.801 NotebookApp] or http://127.0.0.1:8888/?token=341dc8a683411efea6019cf07bb4d4d7705d3005f2d443e6
[I 17:26:34.801 NotebookApp] Use Control-C to stop this server and shut down all kernels (twice to skip confirmation).
[C 17:26:34.895 NotebookApp]

To access the notebook, open this file in a browser:
    file:///C:/Users/19107/AppData/Roaming/jupyter/runtime/nbserver-11112-open.html
Or copy and paste one of these URLs:
    http://localhost:8888/?token=341dc8a683411efea6019cf07bb4d4d7705d3005f2d443e6
    or http://127.0.0.1:8888/?token=341dc8a683411efea6019cf07bb4d4d7705d3005f2d443e6
```

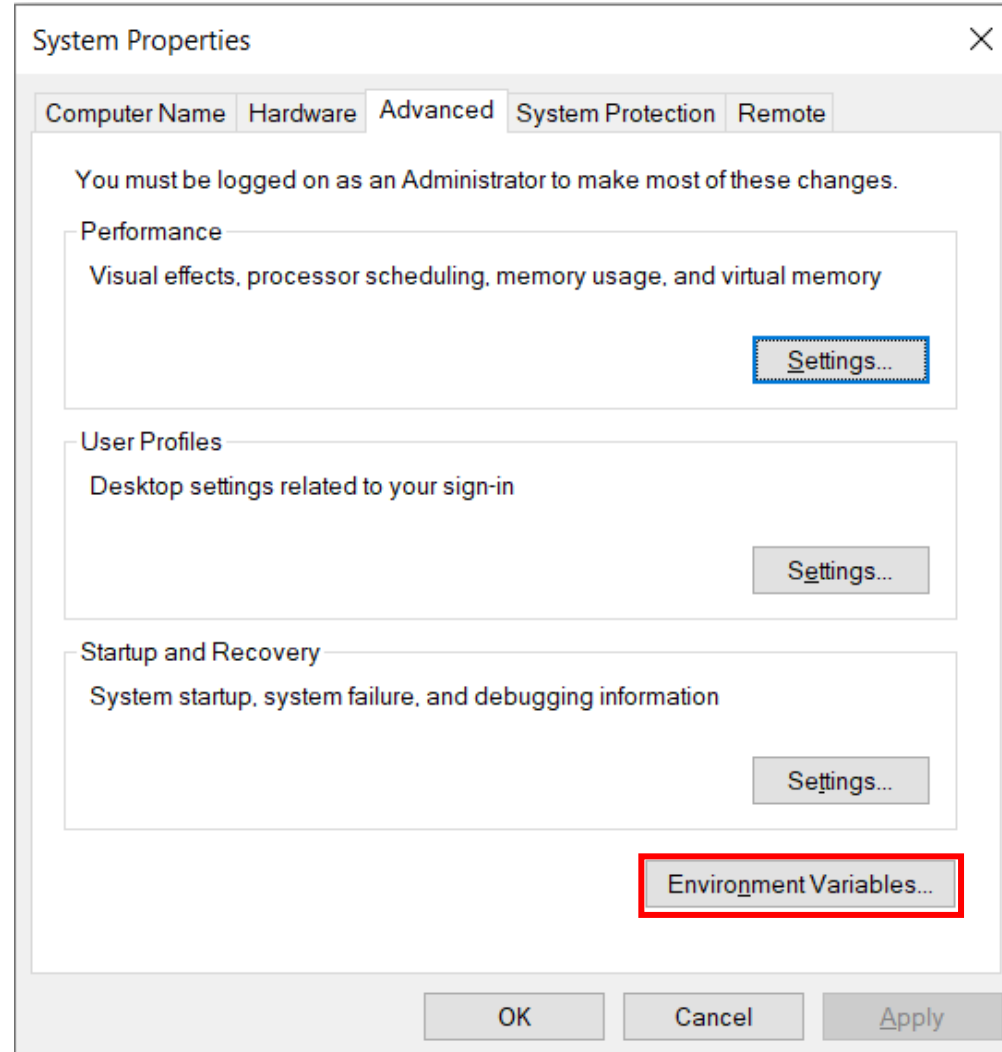

4. Add Anaconda3 into your PATH environment variable (optional)

Press Win+Q and search “Edit the system environment variables”.



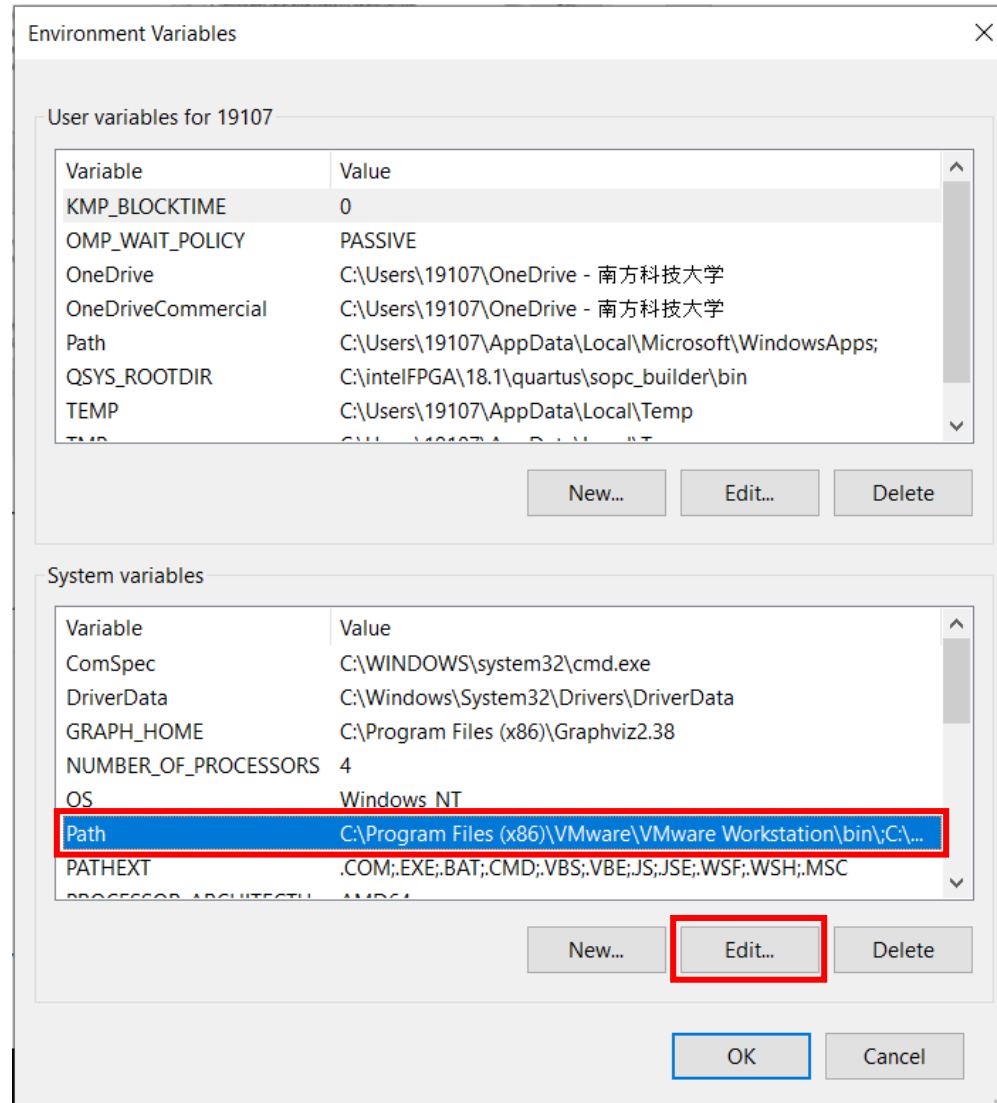
4. Add Anaconda3 into your PATH environment variable (optional)

Click the “Environment Variables...” button.



4. Add Anaconda3 into your PATH environment variable (optional)

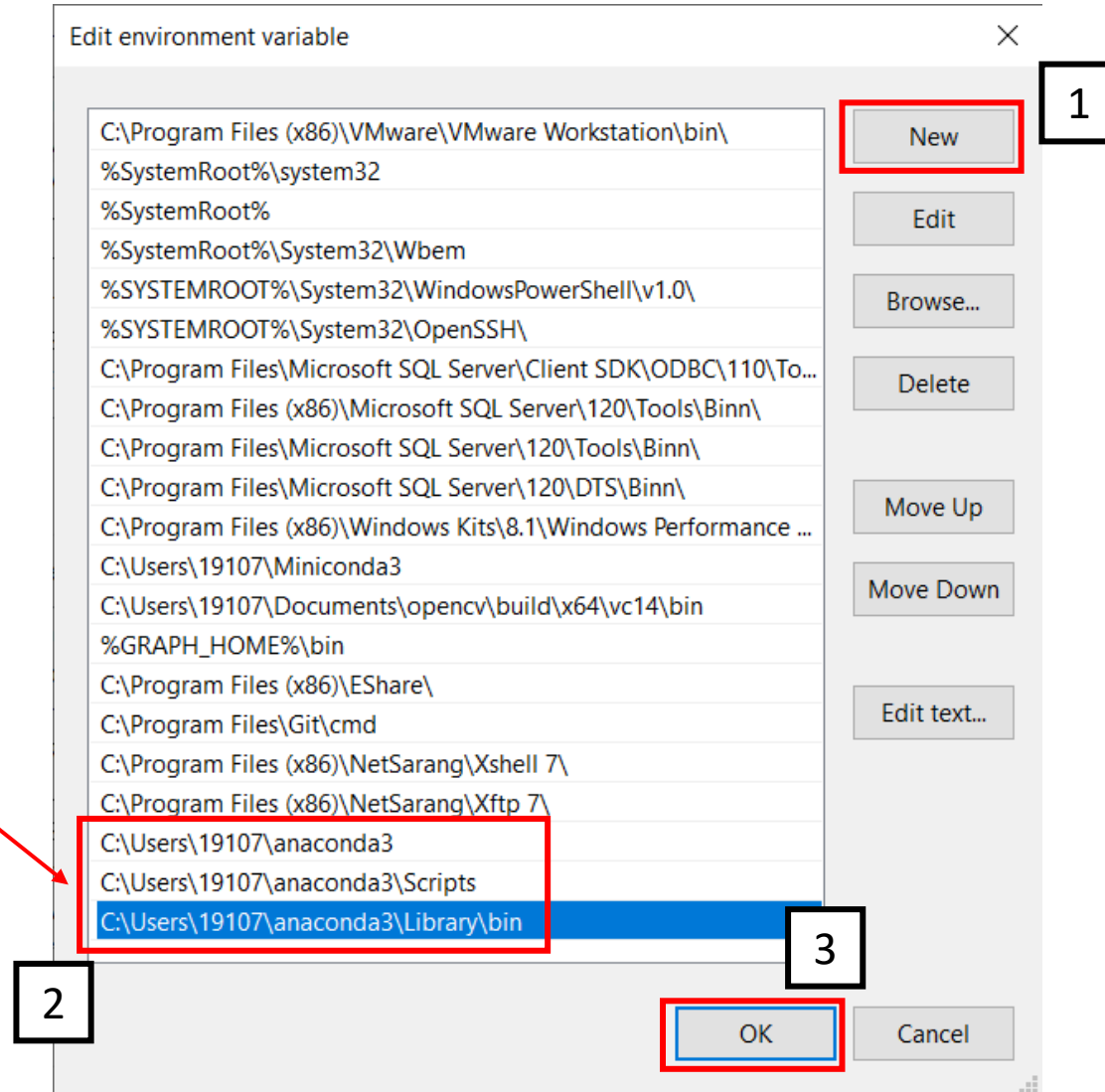
Find the Path environment variable and press edit.



4. Add Anaconda3 into your PATH environment variable (optional)

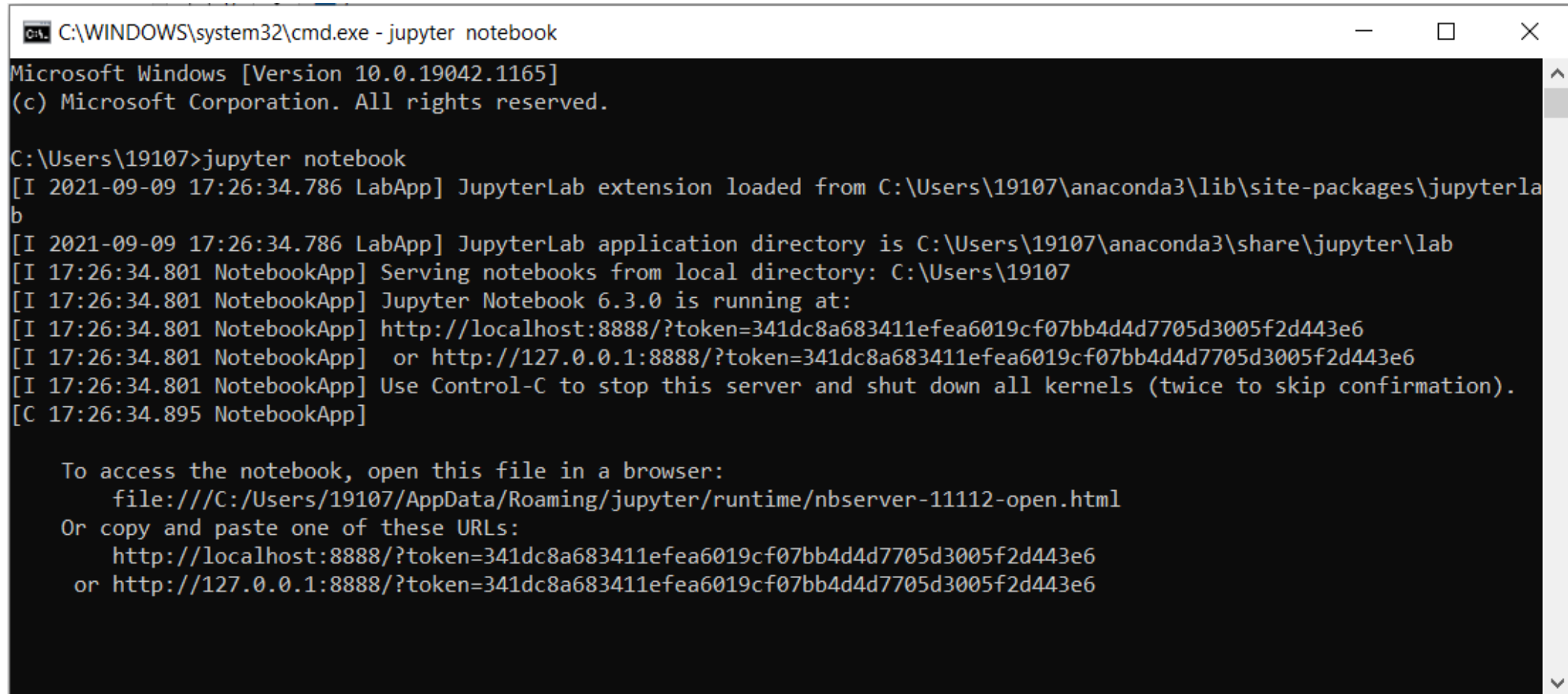
Press New to add new environment variable and press OK.

These are the new environment variables be added into PATH and “C:\Users\19107\anaconda3” depends on the destination folder of your anaconda.



4. Add Anaconda3 into your PATH environment variable (optional)

Input “jupyter notebook” and press Enter. If you get an output similar to the image below, Anaconda have been added into your PATH successfully.

A screenshot of a Windows command prompt window titled "C:\WINDOWS\system32\cmd.exe - jupyter notebook". The window shows the output of the "jupyter notebook" command. The output includes the Windows version (10.0.19042.1165), the user's path (C:\Users\19107), and the JupyterLab extension loaded from the Anaconda3 environment. It also displays the JupyterLab application directory, the local directory for serving notebooks, and the URL for the Jupyter Notebook 6.3.0 interface. The output concludes with instructions on how to access the notebook via a browser or by copying and pasting one of the provided URLs.

```
C:\WINDOWS\system32\cmd.exe - jupyter notebook
Microsoft Windows [Version 10.0.19042.1165]
(c) Microsoft Corporation. All rights reserved.

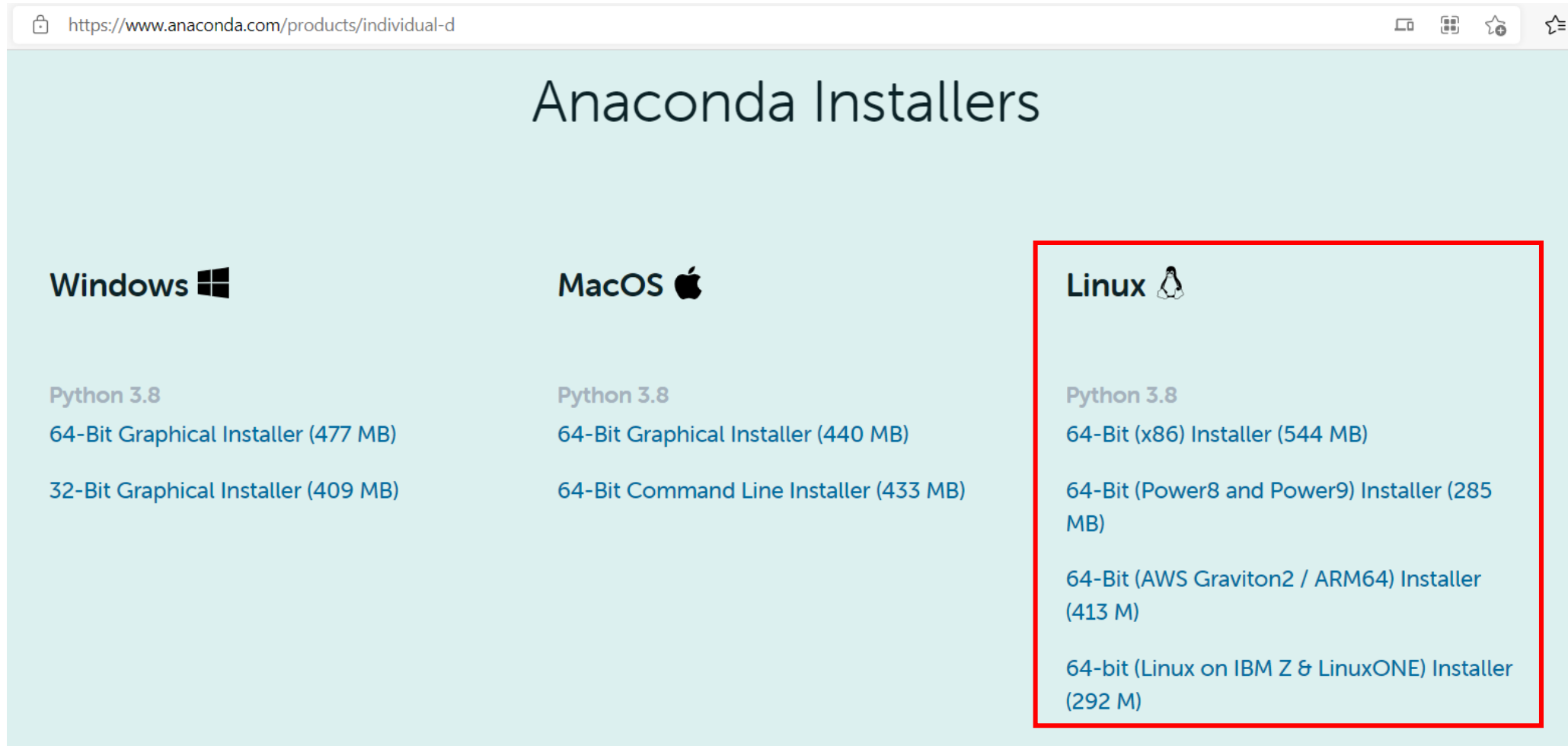
C:\Users\19107>jupyter notebook
[I 2021-09-09 17:26:34.786 LabApp] JupyterLab extension loaded from C:\Users\19107\anaconda3\lib\site-packages\jupyterlab
[I 2021-09-09 17:26:34.786 LabApp] JupyterLab application directory is C:\Users\19107\anaconda3\share\jupyter\lab
[I 17:26:34.801 NotebookApp] Serving notebooks from local directory: C:\Users\19107
[I 17:26:34.801 NotebookApp] Jupyter Notebook 6.3.0 is running at:
[I 17:26:34.801 NotebookApp] http://localhost:8888/?token=341dc8a683411efea6019cf07bb4d4d7705d3005f2d443e6
[I 17:26:34.801 NotebookApp] or http://127.0.0.1:8888/?token=341dc8a683411efea6019cf07bb4d4d7705d3005f2d443e6
[I 17:26:34.801 NotebookApp] Use Control-C to stop this server and shut down all kernels (twice to skip confirmation).
[C 17:26:34.895 NotebookApp]

To access the notebook, open this file in a browser:
    file:///C:/Users/19107/AppData/Roaming/jupyter/runtime/nbserver-11112-open.html
Or copy and paste one of these URLs:
    http://localhost:8888/?token=341dc8a683411efea6019cf07bb4d4d7705d3005f2d443e6
    or http://127.0.0.1:8888/?token=341dc8a683411efea6019cf07bb4d4d7705d3005f2d443e6
```

Installation guide for Linux user

1. Download Anaconda Installer



You can find the anaconda installer you want in there [Anaconda | Individual Edition](https://www.anaconda.com/products/individual-d).



The screenshot shows the Anaconda Individual Edition download page for Linux. The page is titled "Anaconda Installers" and is divided into three columns for Windows, MacOS, and Linux. The Linux column is highlighted with a red border. The Linux column lists four installers for Python 3.8: 64-Bit (x86) Installer (544 MB), 64-Bit (Power8 and Power9) Installer (285 MB), 64-Bit (AWS Graviton2 / ARM64) Installer (413 M), and 64-bit (Linux on IBM Z & LinuxONE) Installer (292 M).

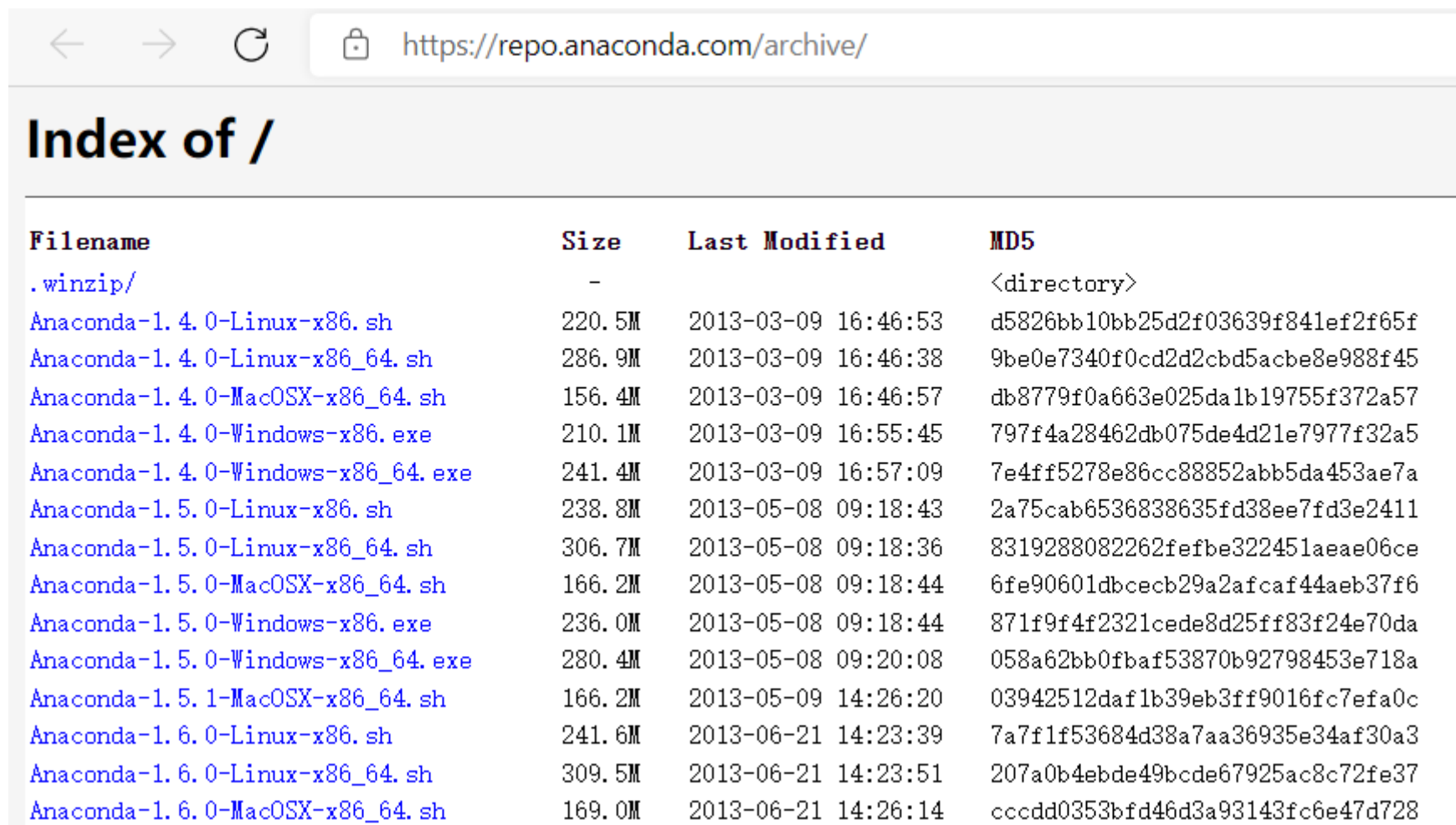
https://www.anaconda.com/products/individual-d

Anaconda Installers

Windows 	MacOS 	Linux 
Python 3.8 64-Bit Graphical Installer (477 MB) 32-Bit Graphical Installer (409 MB)	Python 3.8 64-Bit Graphical Installer (440 MB) 64-Bit Command Line Installer (433 MB)	Python 3.8 64-Bit (x86) Installer (544 MB) 64-Bit (Power8 and Power9) Installer (285 MB) 64-Bit (AWS Graviton2 / ARM64) Installer (413 M) 64-bit (Linux on IBM Z & LinuxONE) Installer (292 M)

1. Download Anaconda Installer

You can also find more additional installers in [Index of / \(anaconda.com\)](https://repo.anaconda.com/archive/).

A screenshot of a web browser showing the 'Index of /' page for the Anaconda repository. The browser's address bar displays 'https://repo.anaconda.com/archive/'. The page title is 'Index of /'. Below the title is a table with four columns: 'Filename', 'Size', 'Last Modified', and 'MD5'. The table lists various Anaconda installer files for different operating systems and versions, including Linux, macOS, and Windows, in both x86 and x86_64 architectures. The files are listed with their respective sizes, last modified dates and times, and MD5 hashes.

Filename	Size	Last Modified	MD5
.winzip/	-		<directory>
Anaconda-1.4.0-Linux-x86.sh	220.5M	2013-03-09 16:46:53	d5826bb10bb25d2f03639f841ef2f65f
Anaconda-1.4.0-Linux-x86_64.sh	286.9M	2013-03-09 16:46:38	9be0e7340f0cd2d2cbd5acbe8e988f45
Anaconda-1.4.0-MacOSX-x86_64.sh	156.4M	2013-03-09 16:46:57	db8779f0a663e025da1b19755f372a57
Anaconda-1.4.0-Windows-x86.exe	210.1M	2013-03-09 16:55:45	797f4a28462db075de4d21e7977f32a5
Anaconda-1.4.0-Windows-x86_64.exe	241.4M	2013-03-09 16:57:09	7e4ff5278e86cc88852abb5da453ae7a
Anaconda-1.5.0-Linux-x86.sh	238.8M	2013-05-08 09:18:43	2a75cab6536838635fd38ee7fd3e2411
Anaconda-1.5.0-Linux-x86_64.sh	306.7M	2013-05-08 09:18:36	8319288082262fefbe322451aeae06ce
Anaconda-1.5.0-MacOSX-x86_64.sh	166.2M	2013-05-08 09:18:44	6fe90601dbcecb29a2afcaf44aeb37f6
Anaconda-1.5.0-Windows-x86.exe	236.0M	2013-05-08 09:18:44	871f9f4f2321cede8d25ff83f24e70da
Anaconda-1.5.0-Windows-x86_64.exe	280.4M	2013-05-08 09:20:08	058a62bb0fbaf53870b92798453e718a
Anaconda-1.5.1-MacOSX-x86_64.sh	166.2M	2013-05-09 14:26:20	03942512daf1b39eb3ff9016fc7efa0c
Anaconda-1.6.0-Linux-x86.sh	241.6M	2013-06-21 14:23:39	7a7f1f53684d38a7aa36935e34af30a3
Anaconda-1.6.0-Linux-x86_64.sh	309.5M	2013-06-21 14:23:51	207a0b4ebde49bcde67925ac8c72fe37
Anaconda-1.6.0-MacOSX-x86_64.sh	169.0M	2013-06-21 14:26:14	ccccdd0353bfd46d3a93143fc6e47d728

2. Install Anaconda

Use “chmod +x” to give the installer execution permission and use “bash” to execute it. Then press Enter to continue.

```
[xupeng1.vendor@SH-IDC2-172-20-20-21 ~]$ chmod +x Anaconda3-2021.05-Linux-x86_64.sh
[xupeng1.vendor@SH-IDC2-172-20-20-21 ~]$ bash Anaconda3-2021.05-Linux-x86_64.sh

Welcome to Anaconda3 2021.05

In order to continue the installation process, please review the license
agreement.
Please, press ENTER to continue
>>> █
```

Read the license terms and input “yes” to accept it.

```
Export; Cryptography Notice
=====

You must comply with all domestic and international export laws and regulations that apply to the software, which in
dividual Edition includes cryptographic software. The country in which you currently reside may have restrictions on
ncryption software. BEFORE using any encryption software, please check your country's laws, regulations and policies
software, to see if this is permitted. See the Wassenaar Arrangement http://www.wassenaar.org/ for more information.

Anaconda has self-classified this software as Export Commodity Control Number (ECCN) 5D992.c, which includes mass ma
nctions with asymmetric algorithms. No license is required for export of this software to non-embargoed countries.

The Intel Math Kernel Library contained in Anaconda Individual Edition is classified by Intel as ECCN 5D992.c with r

The following packages listed on https://www.anaconda.com/cryptography are included in the repository accessible th

Last updated April 5, 2021

Do you accept the license terms? [yes|no]
[no] >>>
```

2. Install Anaconda

Anaconda will provide you a default destination location and you can change it by providing a new one. Then press Enter to continue.

```
Anaconda3 will now be installed into this location:  
/mnt/lustre/xupengl.vendor/anaconda3
```

- Press ENTER to confirm the location
- Press CTRL-C to abort the installation
- Or specify a different location below

```
[/mnt/lustre/xupengl.vendor/anaconda3] >>> █
```

Input yes to initialize your anaconda.

```
# All requested packages already installed.  
  
installation finished.  
Do you wish the installer to initialize Anaconda3  
by running conda init? [yes|no]  
[no] >>> █
```

3. Check your installation

Open another shell prompt. If you find there is a “(base)” in your shell prompt and the output of “conda -V” is similar to the image below, congratulations on your successfully installation.

```
(base) [xupeng1.vendor@SH-IDC2-172-20-20-21 ~]$ conda -V  
conda 4.10.1  
(base) [xupeng1.vendor@SH-IDC2-172-20-20-21 ~]$
```

Simple guidelines for the use of Anaconda

More useful information in [Conda — Conda documentation](#)

1. Create virtual environment

Use “conda create -n your_env_name python=X.X” to create a virtual environment with the python version of X.X and the environment will be named as your_env_name.

```
(base) C:\Users\19107>conda create -n Test python=3.6_
```

In Windows

```
(base) [xupeng1.vendor@SH-IDC2-172-20-20-21 ~]$ conda create -n Test python=3.6
```

In Linux

You can also install some additional packages while creating a virtual environment.

The command is “conda create -n your_env_name additional_packages python=X.X”

```
(base) C:\Users\19107>conda create -n Test opencv-python python=3.6
```

In Windows

```
(base) [xupeng1.vendor@SH-IDC2-172-20-20-21 ~]$ conda create -n Test opencv-python python=3.6
```

In Linux

2. Check environments

Through the part 1, we can find that the specific command to use anaconda is the same in both Windows and Linux. Use “conda env list” to check the list anaconda virtual environments.

```
(base) C:\Users\19107>conda env list
# conda environments:
#
base                * C:\Users\19107\anaconda3
Test                C:\Users\19107\anaconda3\envs\Test
```

Use “pip list” to check the packages installed in the virtual environment.

```
(base) C:\Users\19107>pip list
Package                               Version
-----
alabaster                             0.7.12
anaconda-client                       1.7.2
anaconda-navigator                   2.0.3
anaconda-project                     0.9.1
anyio                                 2.2.0
appdirs                              1.4.4
argh                                  0.26.2
argon2-cffi                          20.1.0
asn1crypto                           1.4.0
astroid                              2.5
astropy                              4.2.1
```

3. Use virtual environment

Use “conda activate your_env_name” to activate the virtual environment.

```
(base) C:\Users\19107>conda activate Test  
(Test) C:\Users\19107>_
```

Use “conda deactivate” to deactivate the virtual environment.

```
(Test) C:\Users\19107>conda deactivate  
(base) C:\Users\19107>_
```

Use “conda remove -n your_env_name --all” to delete the virtual environment.

```
(base) C:\Users\19107>conda remove -n Test --all  
  
Remove all packages in environment C:\Users\19107\anaconda3\envs\Test:  
  
No packages found in C:\Users\19107\anaconda3\envs\Test. Continuing environment removal  
  
(base) C:\Users\19107>_
```