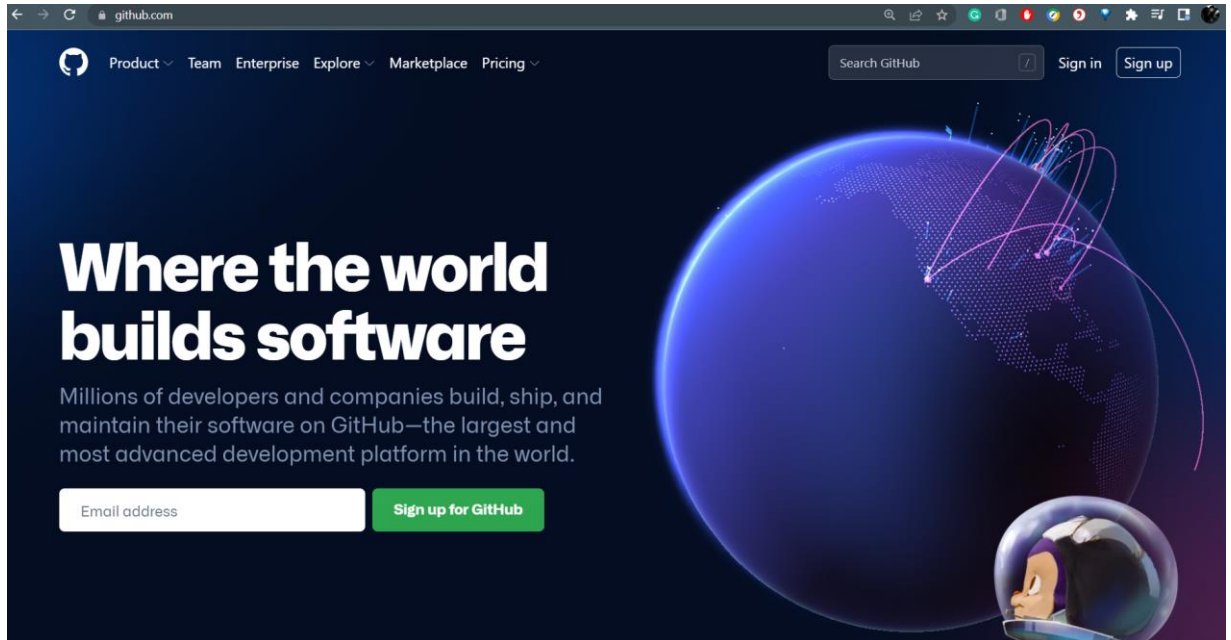


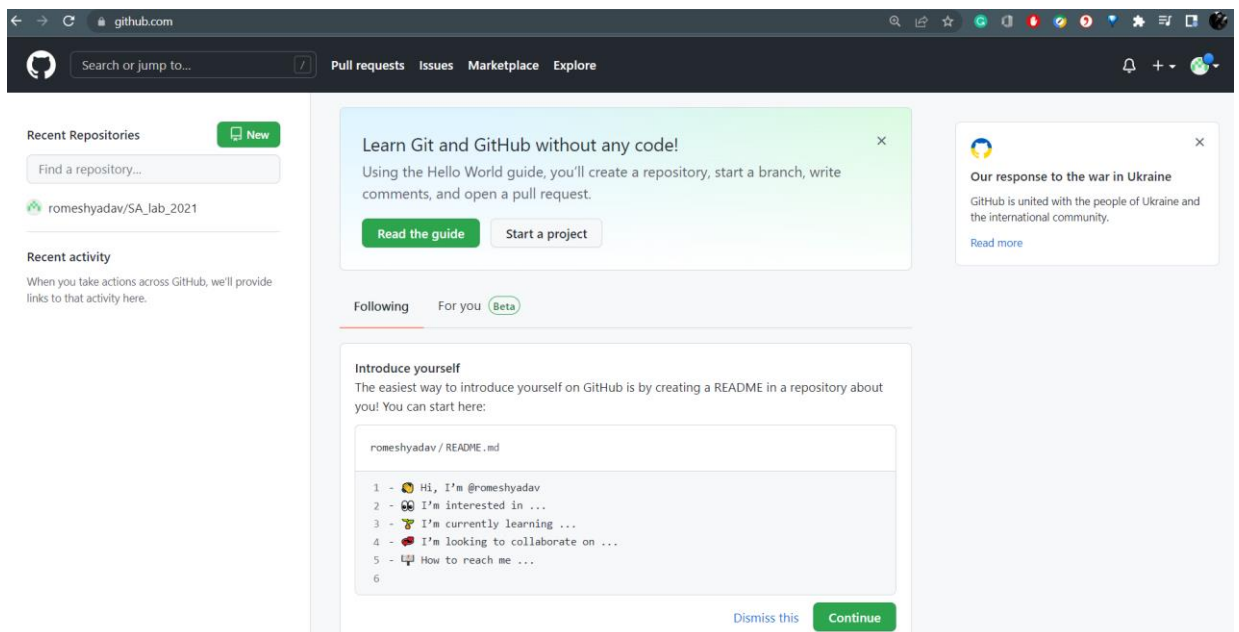
Linking GitHub with Anaconda (Python) and Jupyter Notebook

Steps:

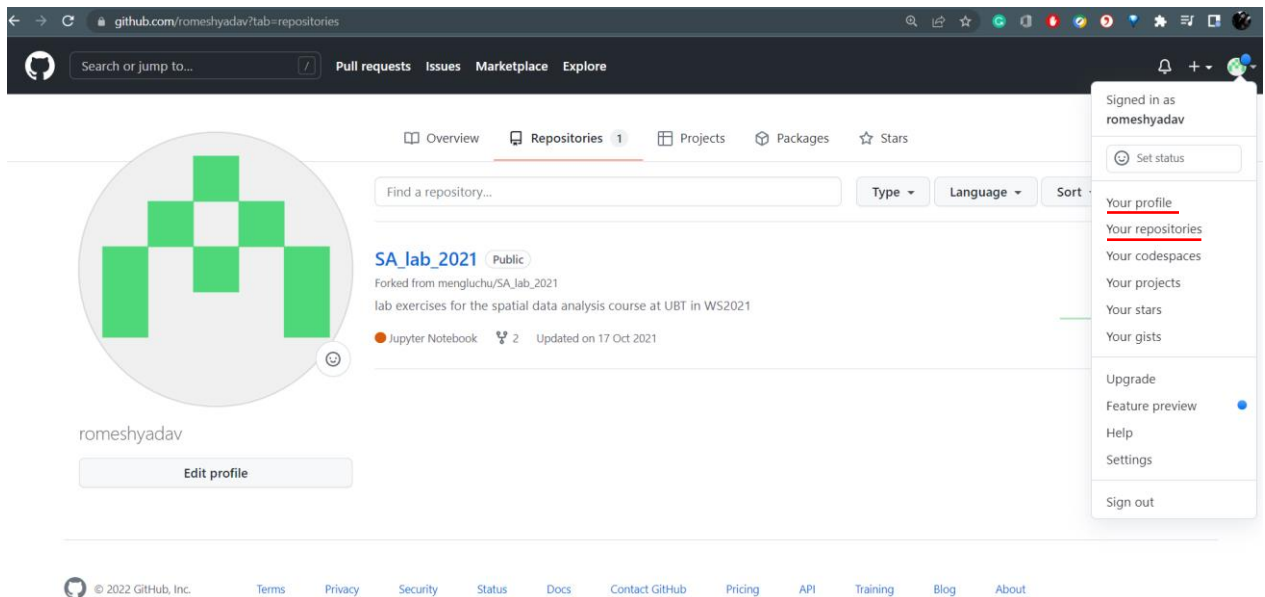
- 1) First of all, **Sign up** for an account in GitHub as seen below via 'github.com'.



- 2) An E-Mail with **verification request** will be sent thereupon.
- 3) **Verify** and **Log In** to your account.
- 4) After successfully logging in, you may see the dashboard page (*i.e., fig. below*) OR repositories or profile page (*i.e., the fig. thereafter*) as seen below.

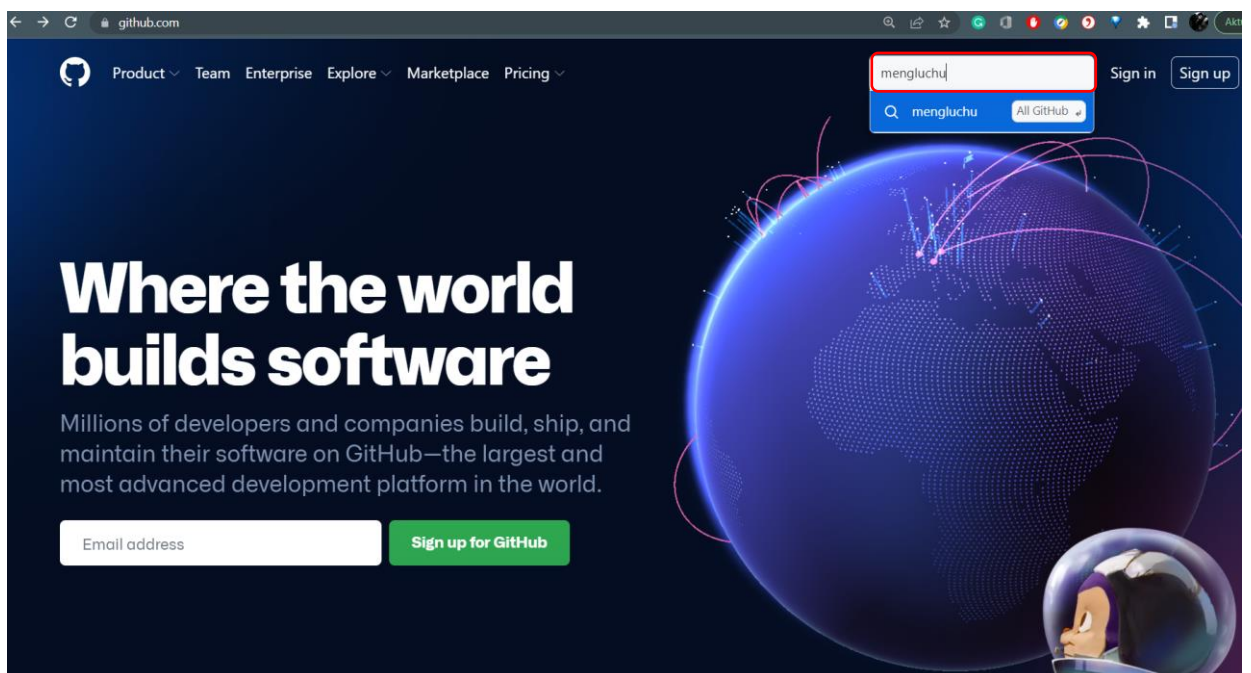


- 5) Existing 'repository-ies' (or profile page) can be accessed by clicking the highlighted (red-colored) sections (fig. iii below) respectively.

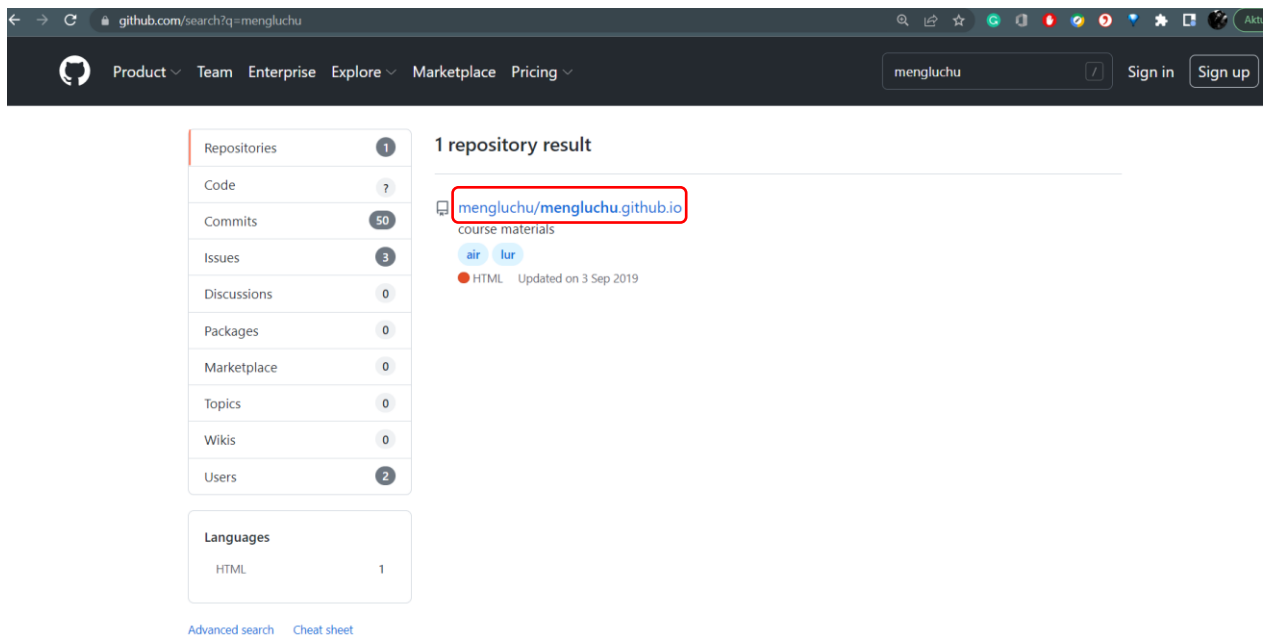


One can also download materials from GitHub without having a GitHub account!
(For e.g., see below)!

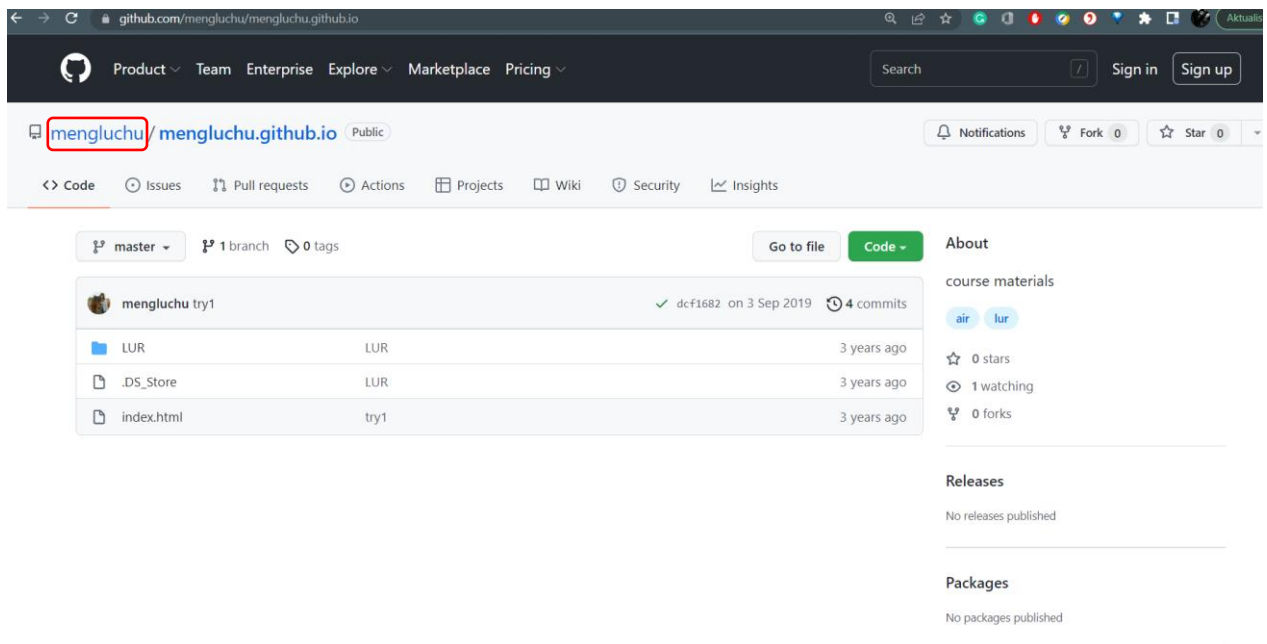
- 6) Open GitHub (www.github.com) and in the Search bar type for the contributor you are searching for (for e.g., here **Prof. Dr. Meng Lu's GitHub**).



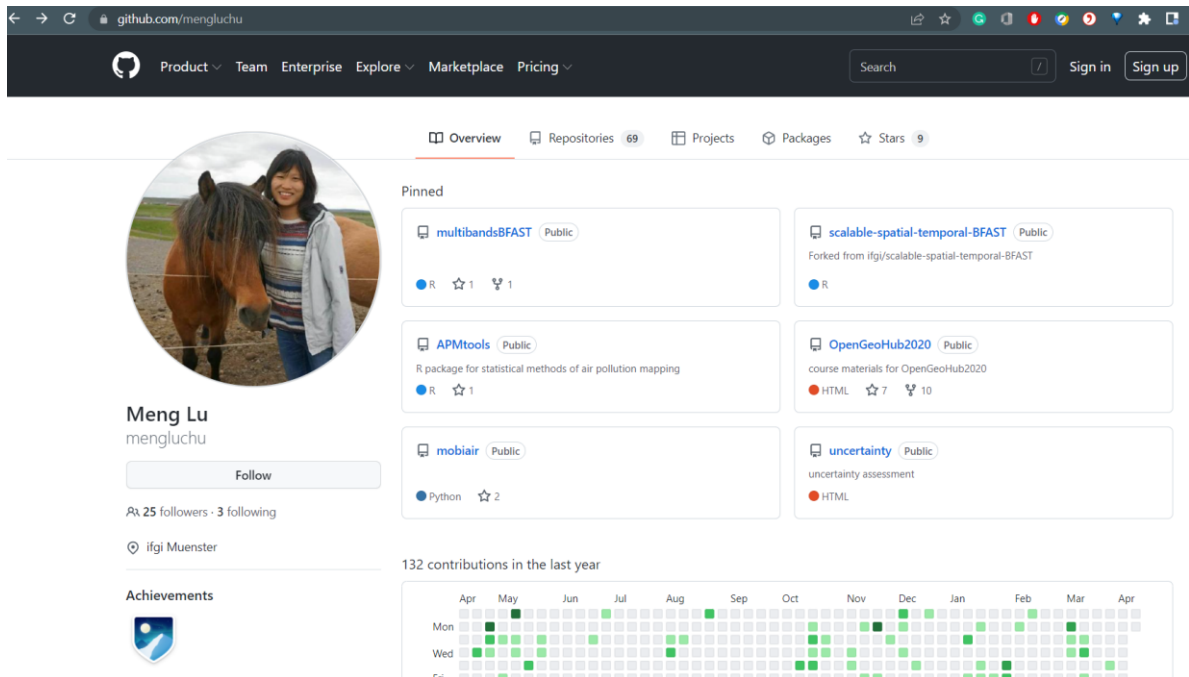
- 7) Upon searching, you will most likely see the page below. *Click* on the highlighted (red box) part.



- 8) Upon clicking, you will see the page as shown below. Now, *click* on the highlighted (red box) section as shown below.



9) Upon clicking, you will see Prof. Lu's GitHub **Overview** page as seen below.



The screenshot shows the GitHub profile page for Meng Lu (mengluchu). The page layout includes a header with navigation links (Product, Team, Enterprise, Explore, Marketplace, Pricing), a search bar, and sign-in/sign-up buttons. The profile section on the left features a circular profile picture of a woman with a horse, the name 'Meng Lu', the username 'mengluchu', a 'Follow' button, and statistics showing 25 followers and 3 following. Below this is a location tag 'ifgi Muenster' and an 'Achievements' section with a blue shield icon. The main content area is titled 'Overview' and displays a grid of pinned repositories: 'multibandsBFAST' (R, 1 star, 1 fork), 'scalable-spatial-temporal-BFAST' (R, forked from ifgi/scalable-spatial-temporal-BFAST), 'APMtools' (R, 1 star), 'OpenGeoHub2020' (HTML, 7 stars, 10 forks), 'mobaiir' (Python, 2 stars), and 'uncertainty' (HTML). At the bottom, a '132 contributions in the last year' heatmap shows activity across months and days of the week.

10) Click on the **Repositories** (as seen below). These repositories are different projects being worked upon. **For instance**, click on **SA_lab_2021** repository (which is also made Public, means, 'signing in' would not be necessary and vice-versa) and try to download some useful materials /folders/files/codes we need.

github.com/mengluchu?tab=repositories

Product Team Enterprise Explore Marketplace Pricing

Search Sign in Sign up

Overview **Repositories 69** Projects Packages Stars 9

Find a repository... Type Language Sort

mobileAP Public
study of sampling using modeled no2 from ggogle carview, ams, from Joel
R Updated 11 days ago

agentmodel Public
Python Updated 26 days ago

mobiairpaper Public
technical paper
TeX Updated on 13 Feb

r-inla Public
Forked from hrue/r-inla
PostScript 9 GNU General Public License v2.0 Updated on 5 Feb

uncertainty Public
uncertainty assessment
HTML Updated on 4 Feb

SA_lab_2021 Public
lab exercises for the spatial data analysis course at UBT in WS2021
Jupyter Notebook 1 2 Updated on 3 Feb

Meng Lu
mengluchu
Follow
25 followers · 3 following
ifgi Muenster
Achievements
Block or Report

11) Upon clicking on the SA_lab_2021 repository, we can **view** the **folders/materials** lying inside this repository as seen below.

Let us **open** the folder **lab_1_python** by clicking on it (you can open any folder as per your wish).

The screenshot shows the GitHub repository page for `mengluchu/SA_lab_2021`. The repository is public and contains 46 commits. The file list shows various folders and files, with `lab_1_python` highlighted. The README.md file is also visible.

File/Folder	Description	Commit Date
<code>.ipynb_checkpoints</code>	efficient programming	4 months ago
<code>comments</code>	Merge branch 'main' of https://github.com/mengluchu/SA_lab_2021	6 months ago
<code>img</code>	Initial commit	6 months ago
<code>lab_1_python</code>	linear regression, sklearn 1.0	4 months ago
<code>lab_2_descriptive</code>	update installation	4 months ago
<code>lab_3_Linear_reg</code>	linear regression, sklearn 1.0	4 months ago
<code>lab_4_CV</code>	rename folders	4 months ago
<code>lab_5_tree</code>	rename folders	4 months ago
<code>lab_6_Ensemble</code>	rename folders	4 months ago
<code>lab_7_classification</code>	rename folders	4 months ago
<code>.DS_Store</code>	linear regression, sklearn 1.0	4 months ago
<code>.Rhistory</code>	Updated_until_the_end	6 months ago
<code>.gitattributes</code>	Initial commit	6 months ago
<code>README.md</code>	Update README.md	5 months ago
<code>pcpool_software.docx</code>	update	6 months ago
<code>~\$w to run the jupyter notebooks.do...</code>	Initial commit	6 months ago

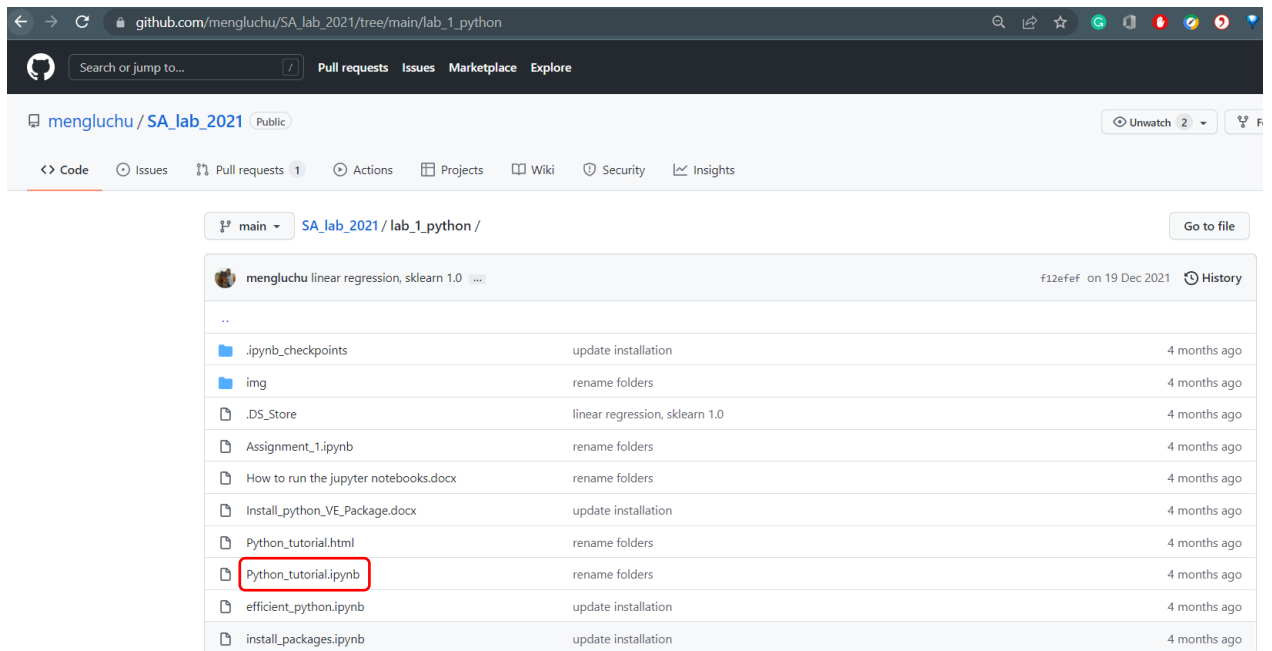
README.md

SA lab 2021

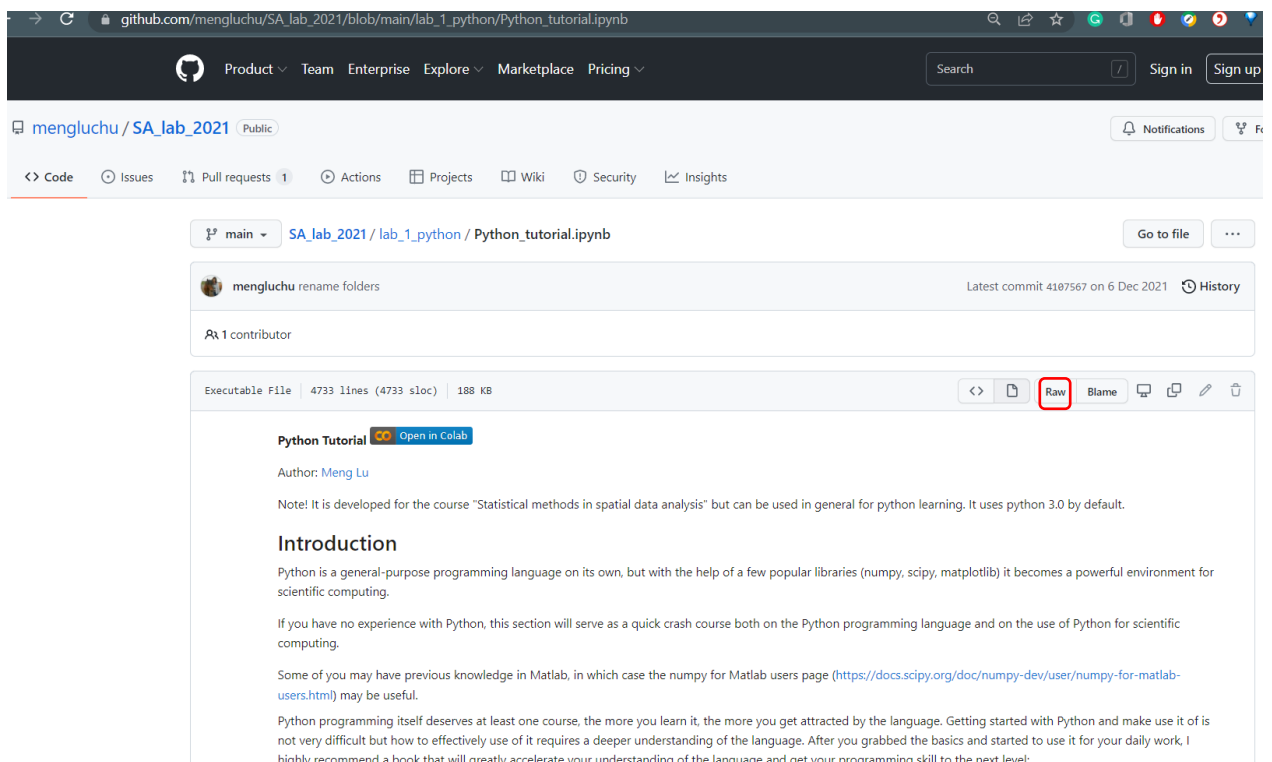
12) Upon opening the folder, let's open the **Python_tutorial.ipynb** file.

Note: `Python_tutorial.ipynb` file has `.ipynb` extension (IPython notebook). Jupyter notebooks were formerly known as IPython notebooks, which is why they use the `.ipynb` extension. While the IPYNB file format was originally created for use with IPython, it is now used primarily by Jupyter Notebook, which incorporates IPython.

One can open an IPYNB file in Jupyter Notebook (cross-platform), Jupyter Notebook Viewer (Web), Cantor (Linux), or Google Colaboratory – simply Colab (Web).



13) You can now open the file and see what's inside it as seen below. If you want to **save** this file (*to run the commands and codes on your own*) on your personal PC or local hard drive, you need to click on **Raw** (inside the red box below).



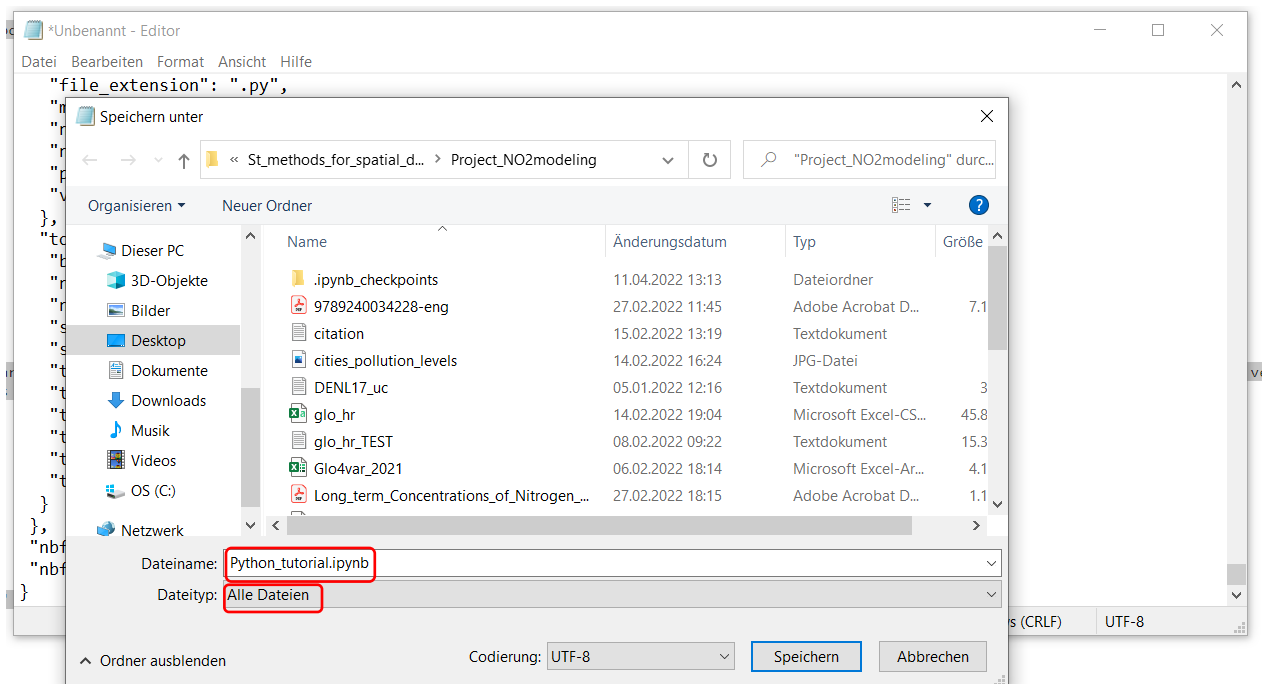
- 14) After clicking on Raw, the file opens showing both the **markdown** (from Python script, "cell_type": "markdown",) and **code** (from Python script, "cell_type": "code",) cell types in Python. Press **ctrl+A** to select all the writings/contents of the file (as seen below).



```

{
  "cells": [
    {
      "cell_type": "markdown",
      "metadata": {
        "id": "dzhgoc19eP"
      },
      "source": [
        "**Python Tutorial**\n",
        "[[Open in Colab](https://colab.research.google.com/assets/colab-badge.svg)]()\n",
        "Author: [Meng Lu](https://tomatofox.wordpress.com)\n",
        "\n",
        "Note: It is developed for the course \"Statistical methods in spatial data analysis\" but can be used in general for python learning. It uses python 3.0 by default."
      ]
    },
    {
      "cell_type": "markdown",
      "metadata": {
        "id": "qVvfo-1hi9e5"
      },
      "source": [
        "## Introduction"
      ]
    },
    {
      "cell_type": "markdown",
      "metadata": {
        "id": "9tigkp9PL9eV"
      },
      "source": [
        "Python is a general-purpose programming language on its own, but with the help of a few popular libraries (numpy, scipy, matplotlib) it becomes a powerful environment for scientific computing.\n",
        "\n",
        "If you have no experience with Python, this section will serve as a quick crash course both on the Python programming language and on the use of Python for scientific computing.\n",
        "\n",
        "Some of you may have previous knowledge in Matlab, in which case the numpy for Matlab users page (https://docs.scipy.org/doc/numpy-dev/user/numpy-for-matlab-users.html) may be useful."
      ]
    },
    {
      "cell_type": "markdown",
      "metadata": {
        "id": "U1PvveR9L9eK"
      },
      "source": [
        "Python programming itself deserves at least one course, the more you learn it, the more you get attracted by the language. Getting started with Python and make use of it is not very difficult but how to effectively use of it requires a deeper understanding of the language. After you grabbed the basics and started to use it for your daily work, I highly recommend a book that will greatly accelerate your understanding of the language and get your programming skill to the next level: \n",
        "\n",
        "Learn Python the hard way"
      ]
    }
  ]
}
```

- 15) Go to the **Start** menu (bottom-left in Windows). Type and open **Editor**. Once the Editor app is open, paste (**ctrl+V**) the copied contents to it. Now save (**ctrl+S**) the file by giving a suitable file name (here: Python_tutorial) with **.ipynb** extension manually (instead of **.txt** extension) and change the data type to **All Data** instead of Text Data (*.txt). Click **Save**.



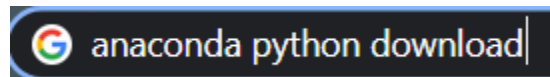
- 16) Now the saved file **Python_tutorial** with **.ipynb** extension is *suitable* to open (and manipulate) with **Jupyter Notebook** online. *Let's check it out!*

NOTE: Firstly, **Anaconda** (one of the distribution platforms for Python programming language) needs to be downloaded to run Python program files on Jupyter Notebook (cross-platform) online!

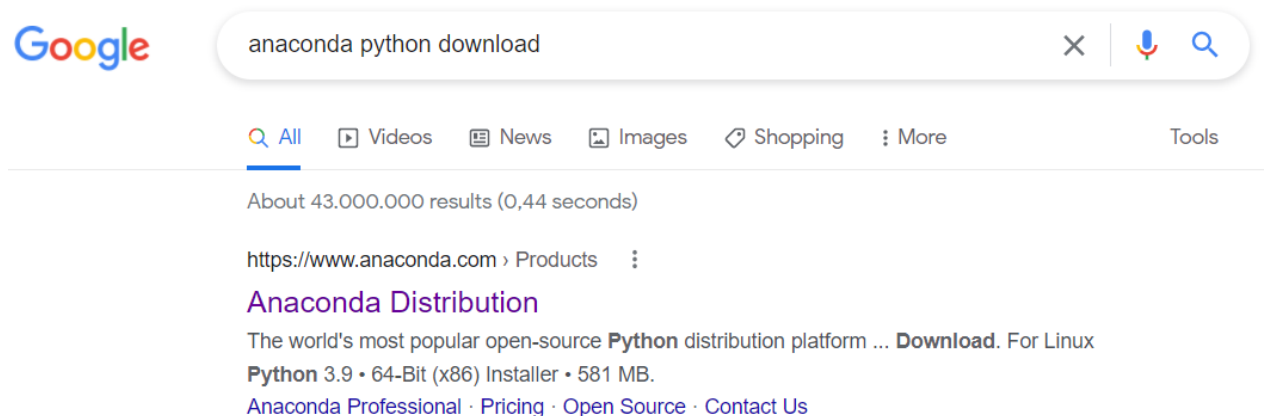
Follow this link carefully (for Windows; and see for macOS, Linux, etc. as well):
<https://docs.anaconda.com/anaconda/install/windows/>

DOWNLOAD ANACONDA:

- Search for **Anaconda Python download** via web-browser.



- Click on **Anaconda Distribution**.



- Click on **Download** button (right-hand-side for Windows) as seen below for Python 3.9 version with 64-bits.

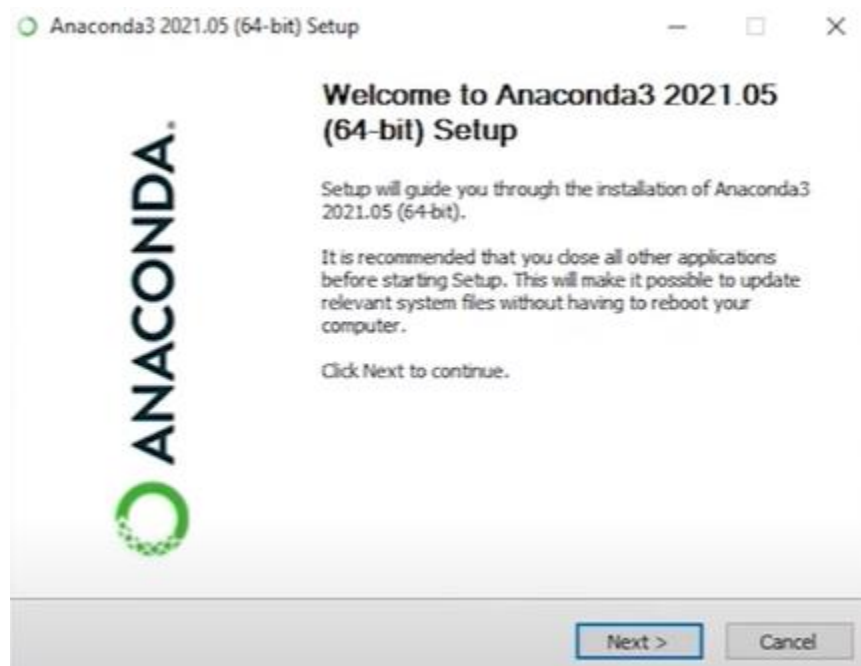
Individual Edition is now

ANACONDA DISTRIBUTION

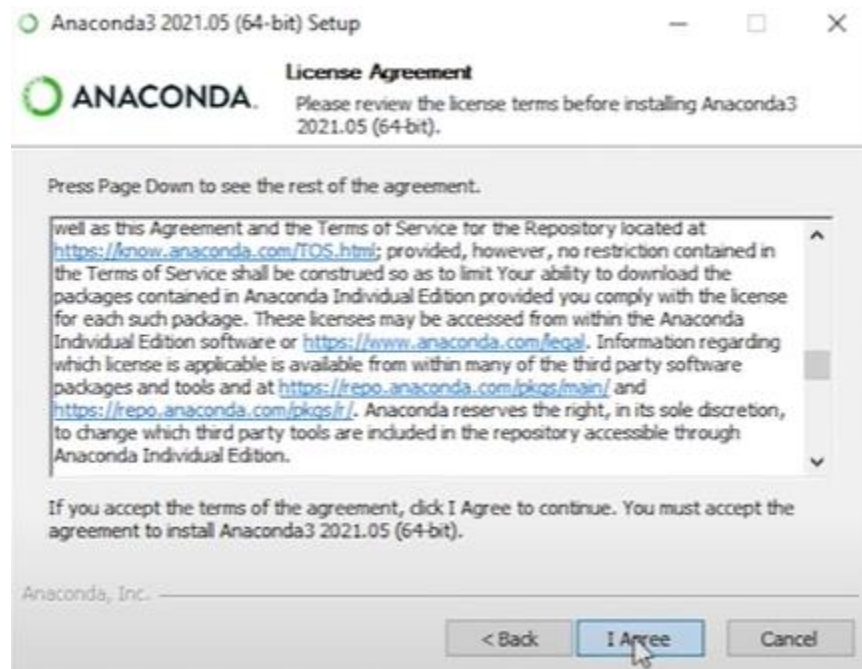
The world's most popular open-source Python distribution platform



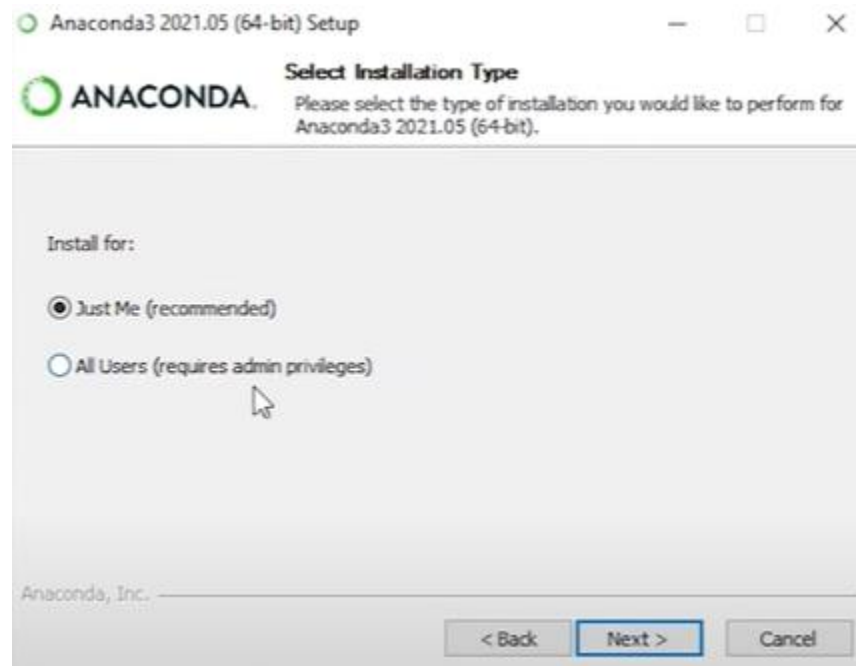
- After downloading it, **open** or **execute** it.
- You may assume to get such a dialog box (as seen below).



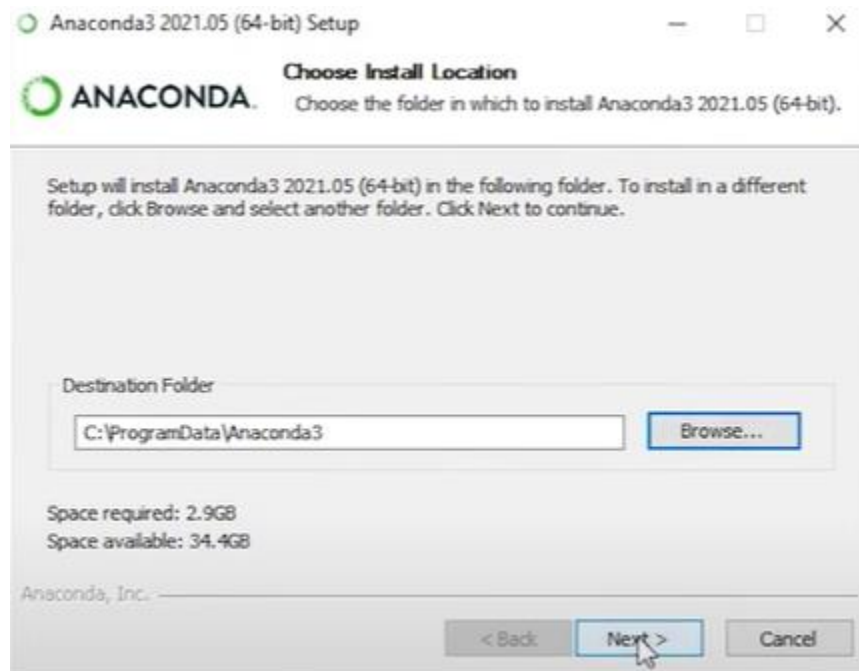
- Click on **Next**. Read the License Agreement and click on **I Agree**.



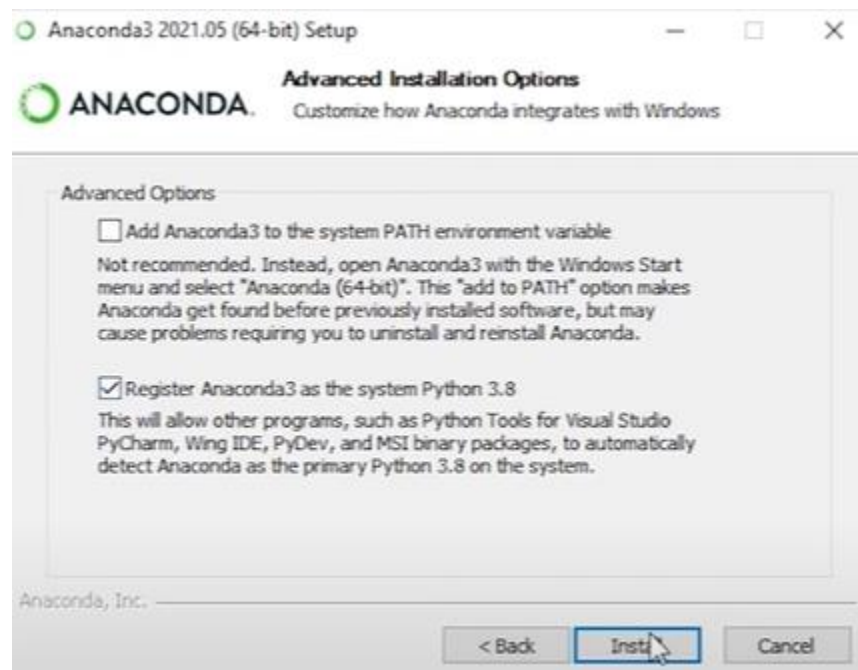
- Click on Install for: **Just Me** (recommended).



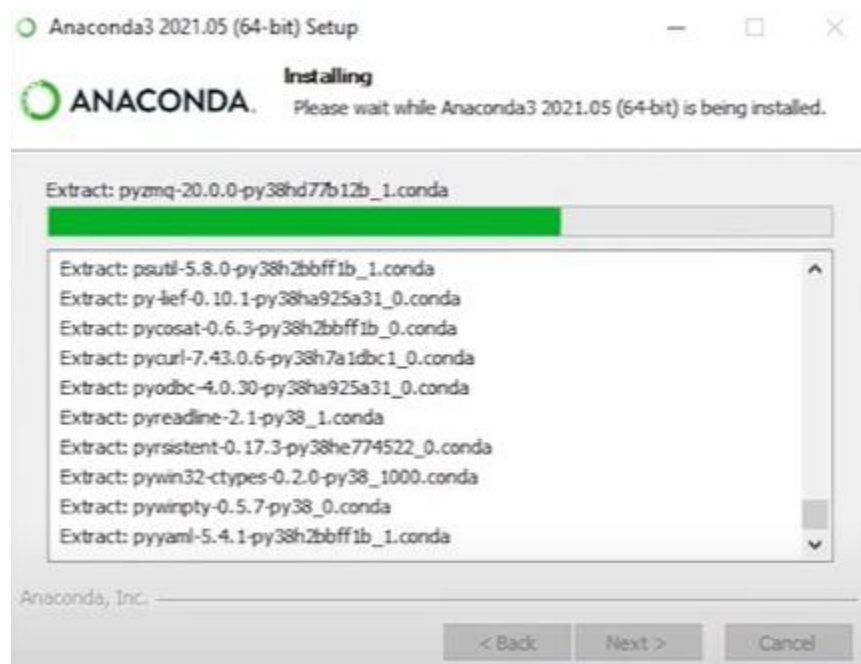
- Browse for the location where you want to **store** and save Anaconda and click **Next**.



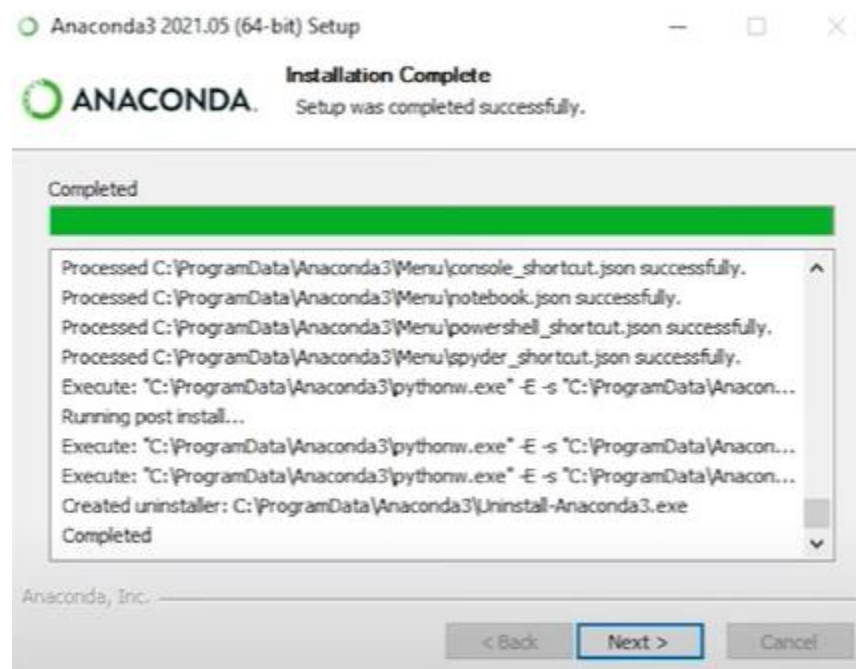
- Select **Register** Anaconda3 as the system Python 3.8 **OR** Python 3.9 depending upon your available download and click **Install**.



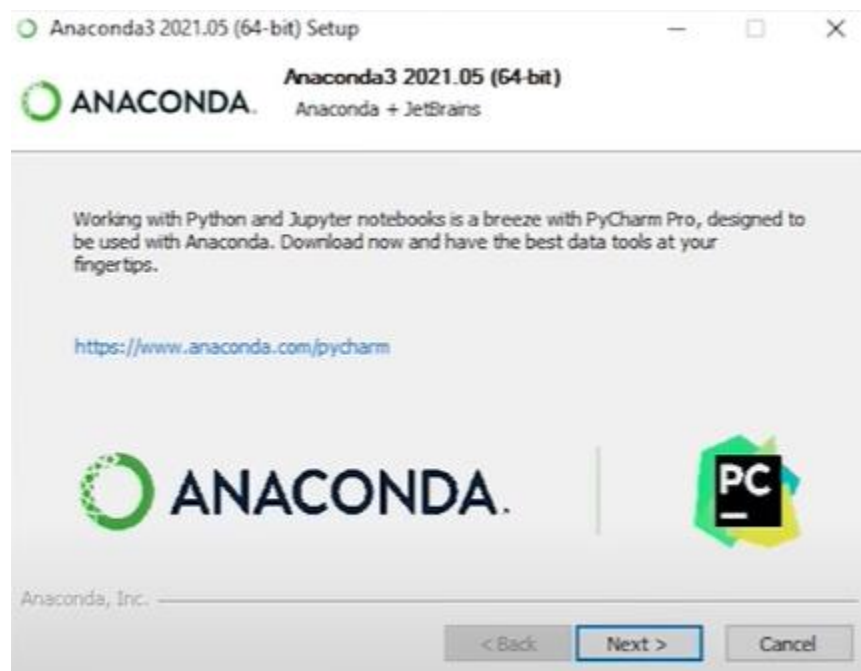
- Now you can see the **installation progress** (along with Python it installs most of the required Python libraries too, which is why it takes few minutes to install).



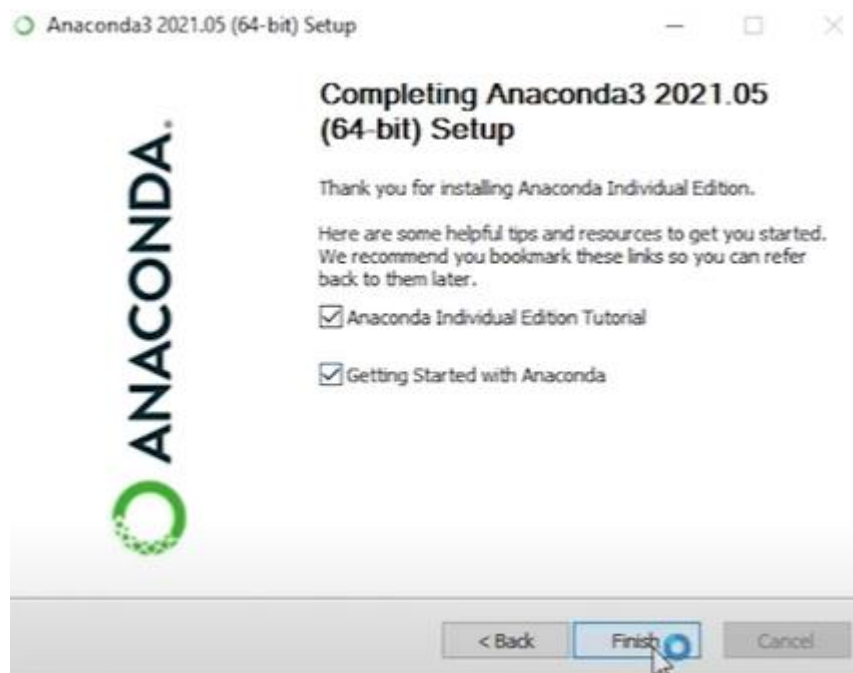
- After a while, you will see that the **installation process is complete**. Click **Next**.



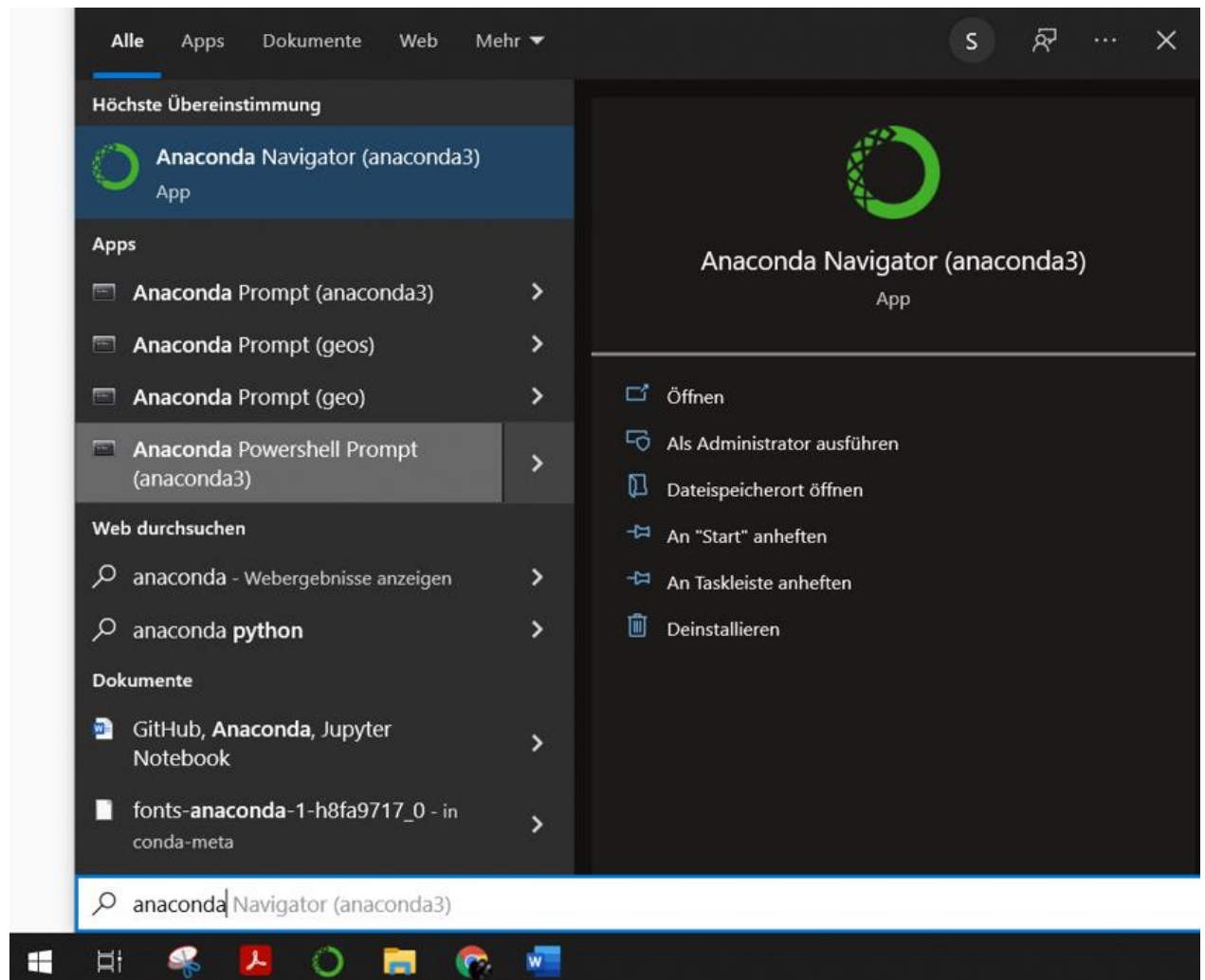
- Click **Next**.



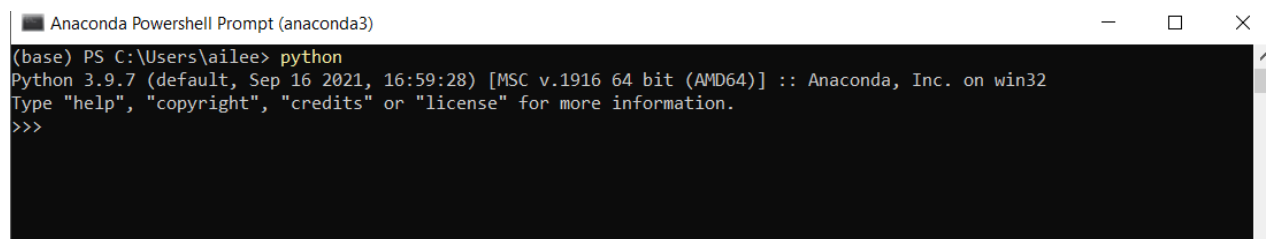
- Click **Finish**.



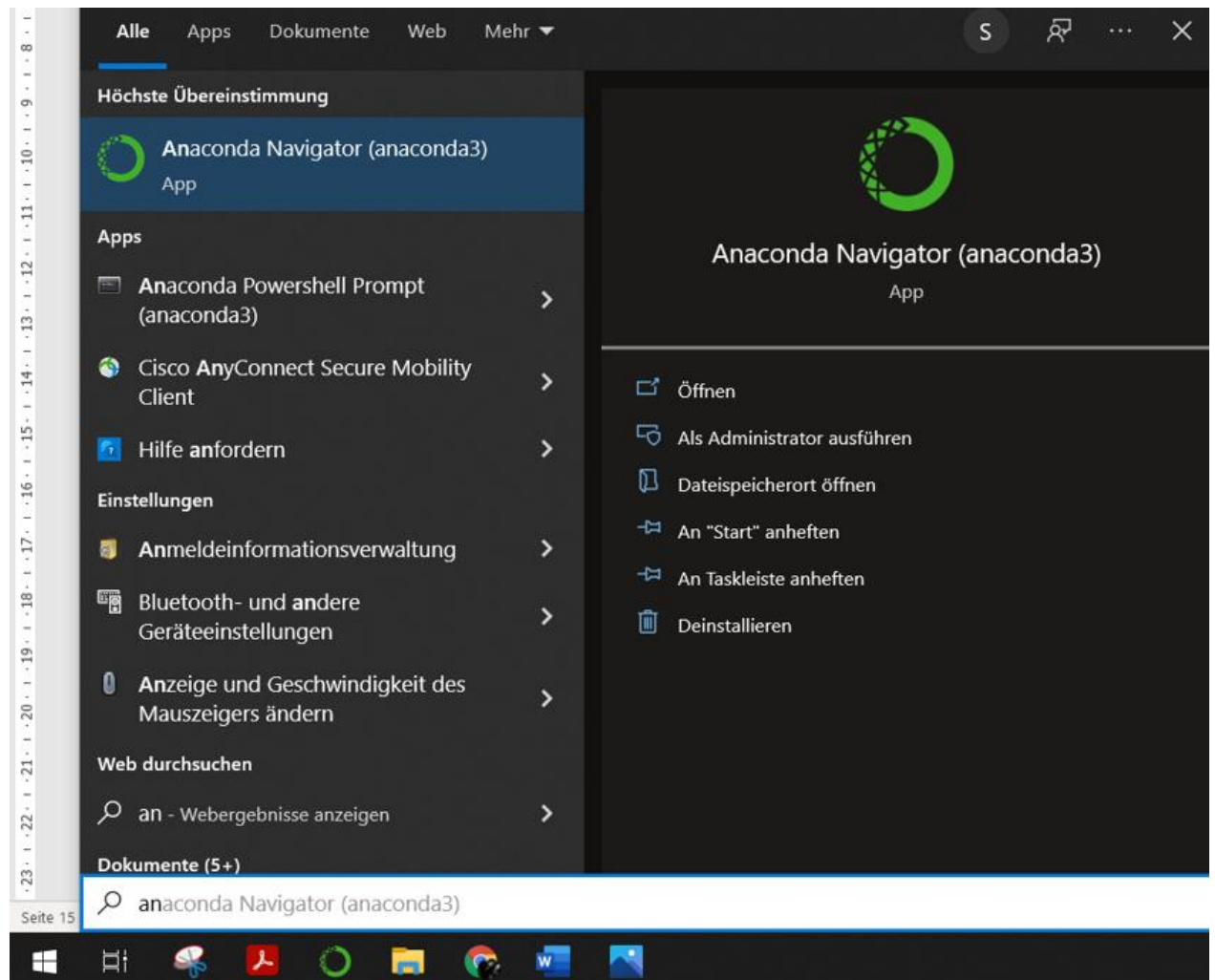
- After successful installation of Anaconda, quickly check for Anaconda by going to the **Start** menu (bottom-left in Windows operating system) in your PC/laptop and **search** by typing **Anaconda**. **Click on Anaconda Powershell Prompt (anaconda3)**.



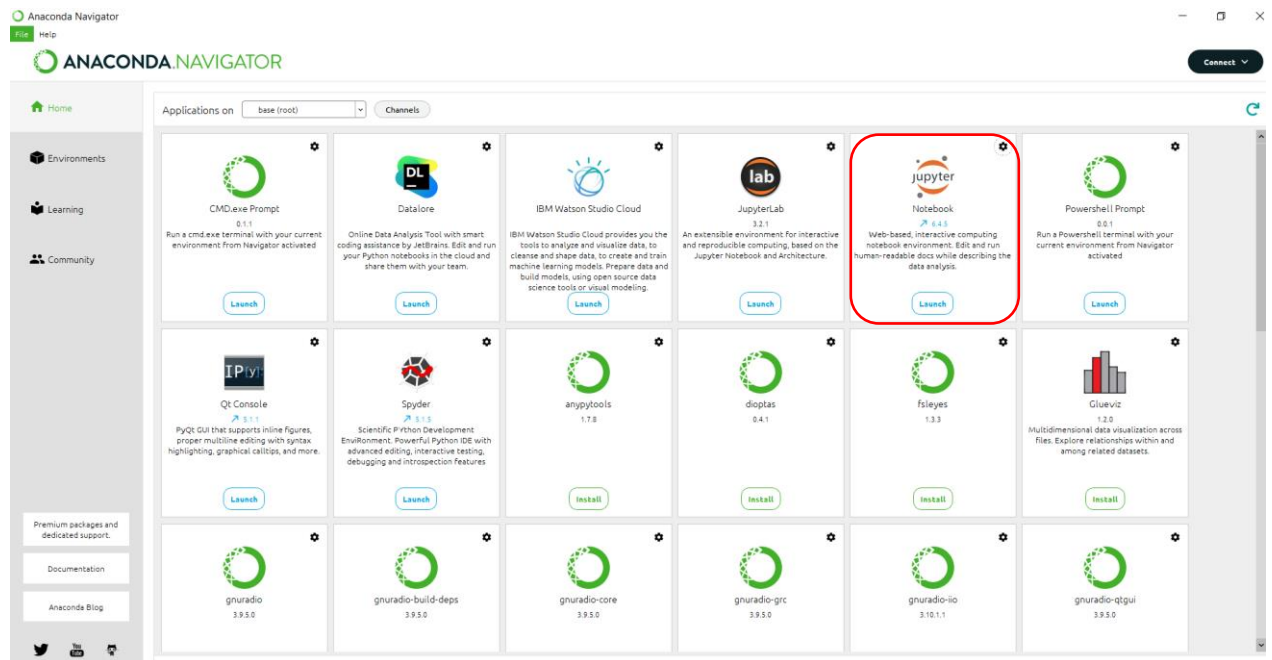
- **Type Python** once you *open* the Anaconda Powershell Prompt. It shows the **version** of Python downloaded on your machine (*in my case: Python 3.9.7 which means, Python is working correctly!*). It can differ on your machine depending upon the Python installation process with different version downloaded.



- Next thing up, type **Anaconda Navigator** on **Start** menu (bottom-left of the screen) to open **Jupyter Notebook**.



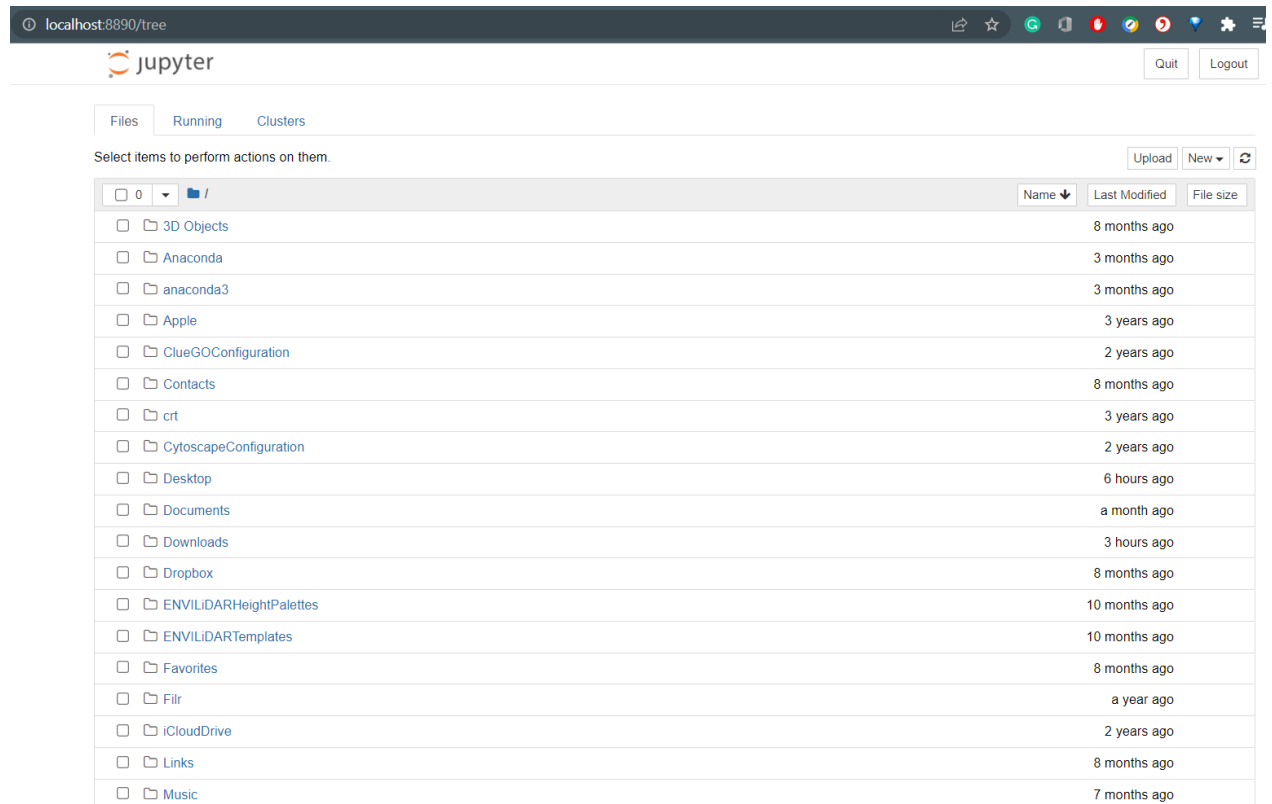
- Once Anaconda Navigator is open, click on **Launch Jupyter Notebook**.



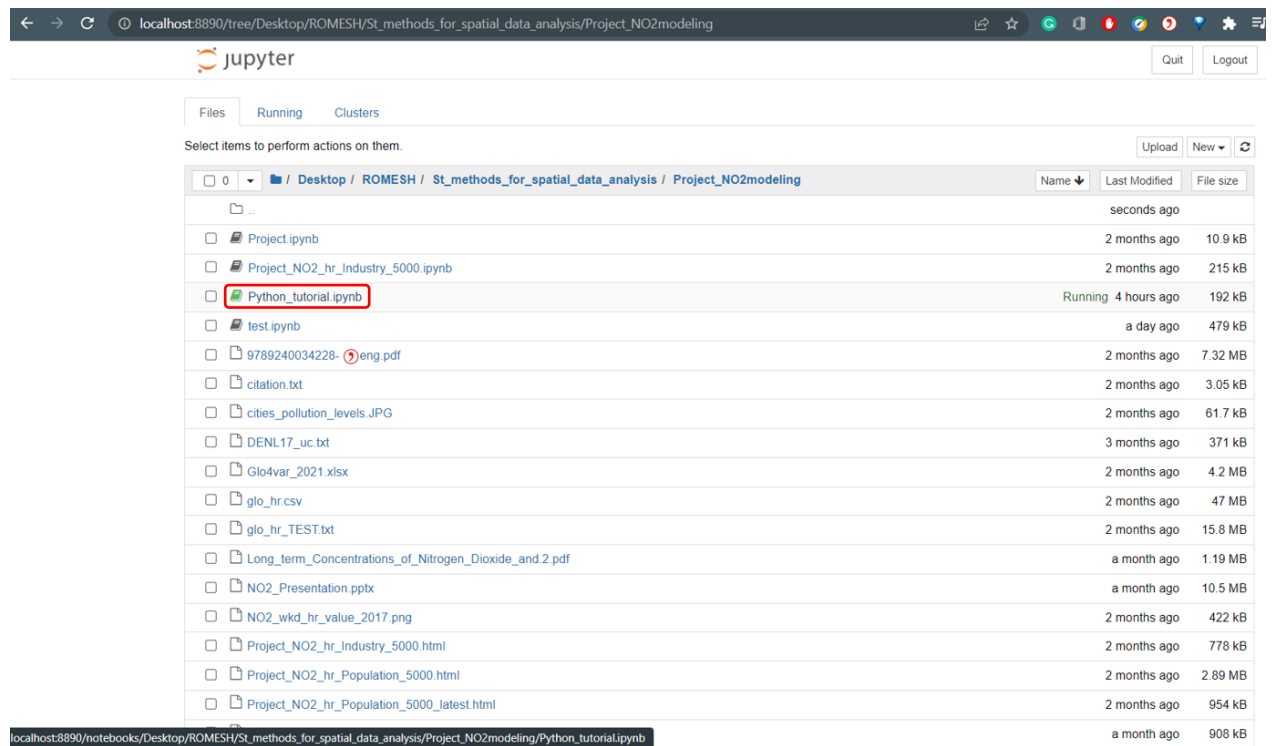
- **Jupyter Notebook** is a web-based interactive computing notebook environment which helps to open Python files (with **.ipynb** and **.py** extension), pdf files, html files, image files(.png), etc. with UTF-8 encoding stored in the local hard drive (or at other accessible locations).

Note: *Jupyter Notebook helps eliminate the problems associated with python files viewing, manipulating, and editing specified in the **point (16)** above.*

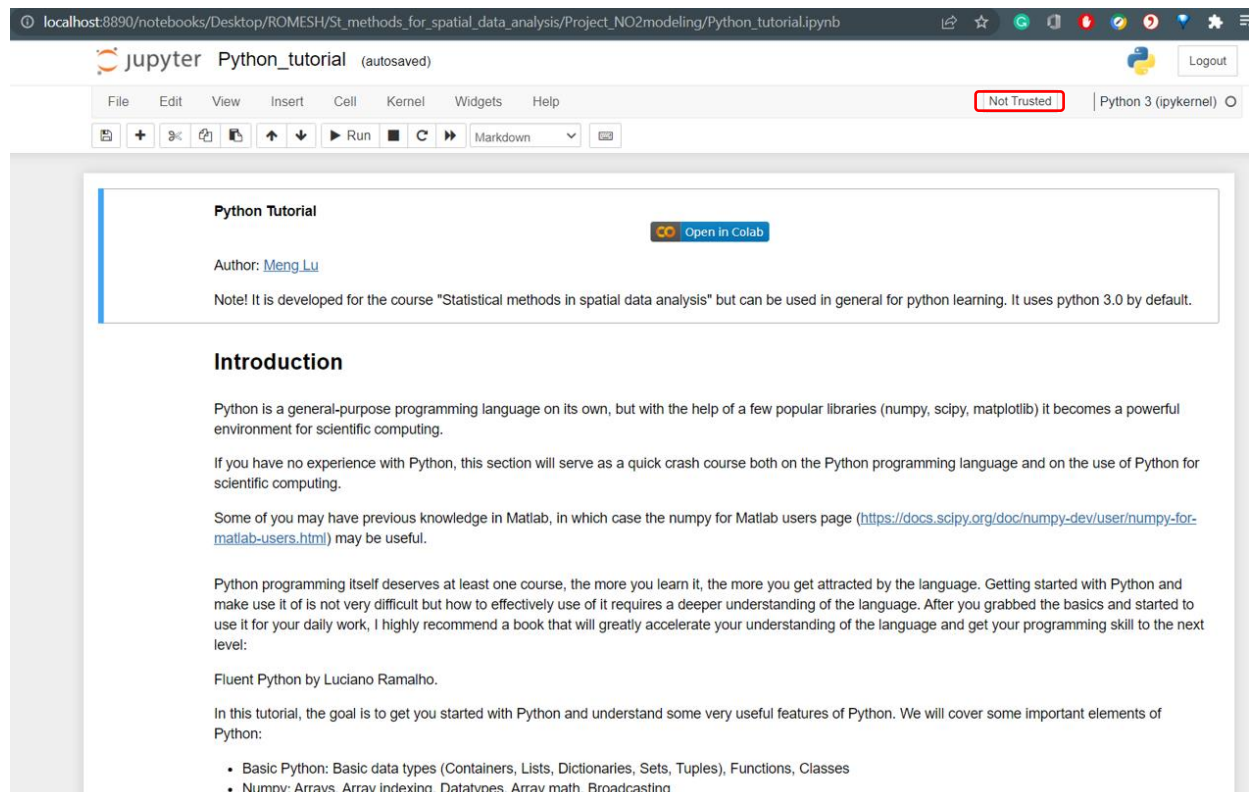
- Now, we see **Jupyter Notebook** open.



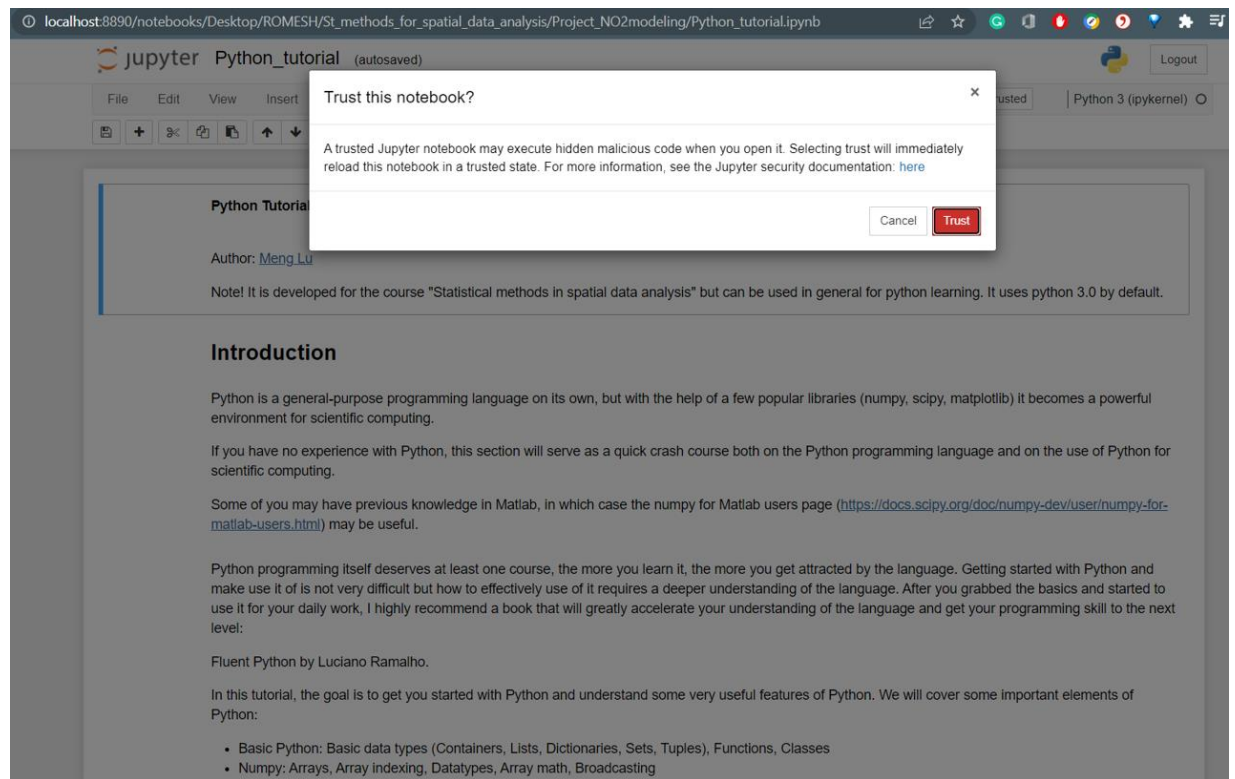
- Navigate to the **appropriate folder** where you have saved the **Python_tutorial.ipynb** python file as mentioned in the **point (15) above**. In my case, I have saved here. **Click** this file to **open** it.



- You may see that the notebook is **Not Trusted** once you open the file (as seen below).



- Click on **Not Trusted** first and then click on **Trust** icon later, to make the notebook Trusted!



- Now, you may observe that the **notebook** appears **Trusted**!

Most important of all, you can see that the **Python_Tutorial.ipynb** file is *readable*, can be *manipulated*, and *executed* too in the Jupyter Notebook environment.

localhost:8890/notebooks/Desktop/ROMESH/St_methods_for_spatial_data_analysis/Project_NO2modeling/Python_tutorial.ipynb

jupyter Python_tutorial (autosaved)

File Edit View Insert Cell Kernel Widgets Help Trusted Python 3 (ipykernel)

Python Tutorial

Author: [Meng Lu](#)

Note! It is developed for the course "Statistical methods in spatial data analysis" but can be used in general for python learning. It uses python 3.0 by default.

Introduction

Python is a general-purpose programming language on its own, but with the help of a few popular libraries (numpy, scipy, matplotlib) it becomes a powerful environment for scientific computing.

If you have no experience with Python, this section will serve as a quick crash course both on the Python programming language and on the use of Python for scientific computing.

Some of you may have previous knowledge in Matlab, in which case the numpy for Matlab users page (<https://docs.scipy.org/doc/numpy-dev/user/numpy-for-matlab-users.html>) may be useful.

Python programming itself deserves at least one course, the more you learn it, the more you get attracted by the language. Getting started with Python and make use of it is not very difficult but how to effectively use of it requires a deeper understanding of the language. After you grabbed the basics and started to use it for your daily work, I highly recommend a book that will greatly accelerate your understanding of the language and get your programming skill to the next level:

Fluent Python by Luciano Ramalho.

In this tutorial, the goal is to get you started with Python and understand some very useful features of Python. We will cover some important elements of Python:

- Basic Python: Basic data types (Containers, Lists, Dictionaries, Sets, Tuples), Functions, Classes
- Numpy: Arrays, Array indexing, Datatypes, Array math, Broadcasting

- Press **Shift+Enter** on individual cells (both 'markdown cells' and/or 'code cells') in the **Python_Tutorial.ipynb** file (or any other file of interest) to **execute** those cells and see the **output** (as seen below).

localhost:8890/notebooks/Desktop/ROMESH/St_methods_for_spatial_data_analysis/Project_NO2modeling/Python_tutorial.ipynb

jupyter Python_tutorial (unsaved changes)

File Edit View Insert Cell Kernel Widgets Help Trusted Python 3 (ipykernel)

A Brief Note on Python Versions

As of January 1, 2020, Python has [officially dropped support](#) for python2. You can check your Python version at the command line by running `python --version`. In Colab, we can enforce the Python version by clicking `Runtime -> Change Runtime Type` and selecting `python3`. Note that as of April 2020, Colab uses Python 3.6.9 which should run everything without any errors.

```
In [18]: !python --version
Python 3.9.7
```

```
In [19]: ls
Datenträger in Laufwerk C: ist OS
Volumeseriennummer: B00B-29CE

Verzeichnis von C:\Users\aillee\Desktop\ROMESH\St_methods_for_spatial_data_analysis\Project_NO2modeling

11.04.2022 18:04 <DIR>          .
11.04.2022 18:04 <DIR>          ..
11.04.2022 18:00 <DIR>          .ipynb_checkpoints
27.02.2022 12:45          7.321.751 9789240034228 -eng.pdf
15.02.2022 14:19          3.051 citation.txt
14.02.2022 17:24          61.699 cities_pollution_levels.JPG
05.01.2022 13:16          370.682 DENL17_uc.txt
14.02.2022 20:04          46.967.894 glo_hr.csv
08.02.2022 10:22          15.756.617 glo_hr_TEST.txt
06.02.2022 19:14          4.199.111 Glo4var_2021.xlsx
27.02.2022 19:15          1.193.073 Long_term_Concentrations_of_Nitrogen_Dioxide_and.2.pdf
10.03.2022 23:11          10.491.484 NO2_Presentation.pptx
13.02.2022 23:05          421.777 NO2_wkd_hr_value_2017.png
08.02.2022 11:03          10.896 Project.ipynb
12.02.2022 18:24          778.439 Project_NO2_hr_Industry_5000.html
12.02.2022 17:41          214.695 Project_NO2_hr_Industry_5000.ipynb
15.02.2022 20:00          2.886.141 Project_NO2_hr_Population_5000.html
```

In this way, we can download the GitHub materials, download Anaconda and run Jupyter Notebooks (for Python programming language usage).
