

Lab setup

We will be using the Python programming language for the lab assignments. You will write your report on JupyterLab or Google Colab as an *ipynb* file, which you will submit on Canvas. The simplest way to work on your lab assignments is by using Google Colab, a cloud-based coding environment (no installation needed). If you want to work offline on your computer, you will need to install Python and JupyterLab. The following instructions will show you how to set up Python, JupyterLab, and Google Colab. Keep in mind that:

- Python is a programming language,
- JupyterLab and Google Colab are coding platform for Python.

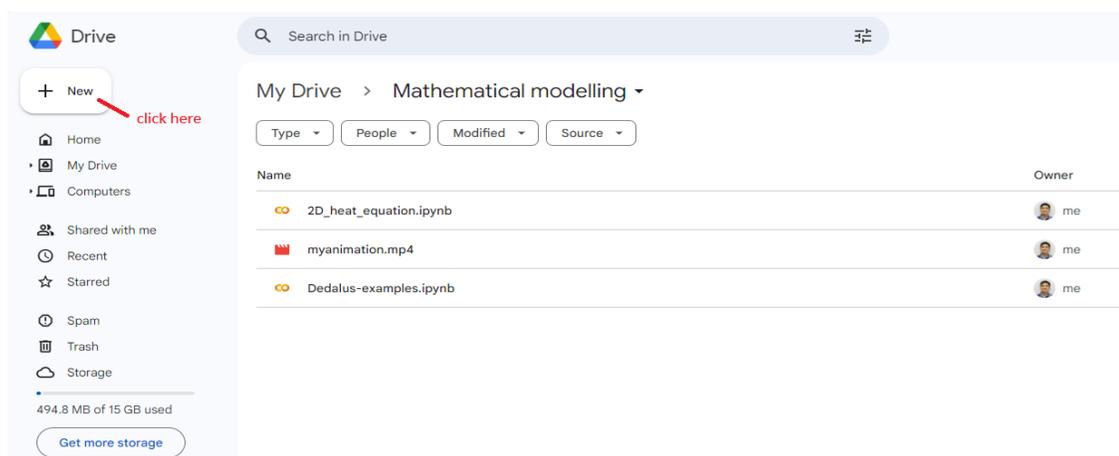
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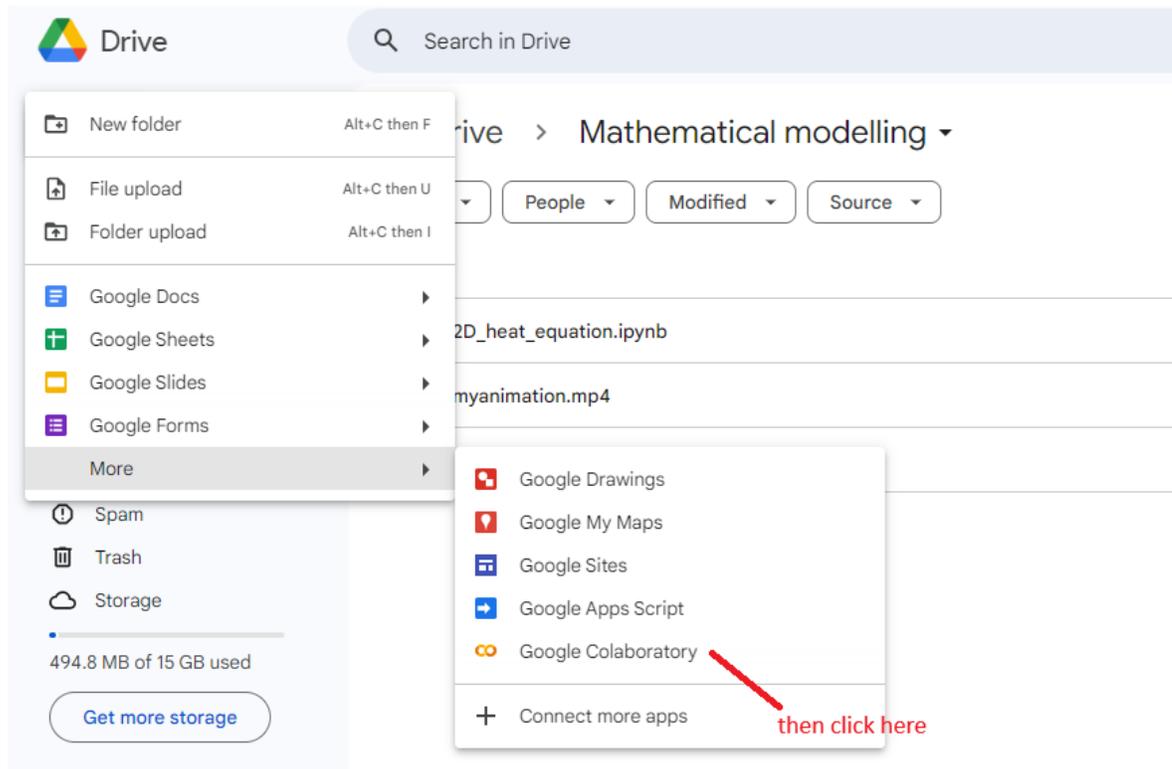
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Working on ipynb file with Google Colab

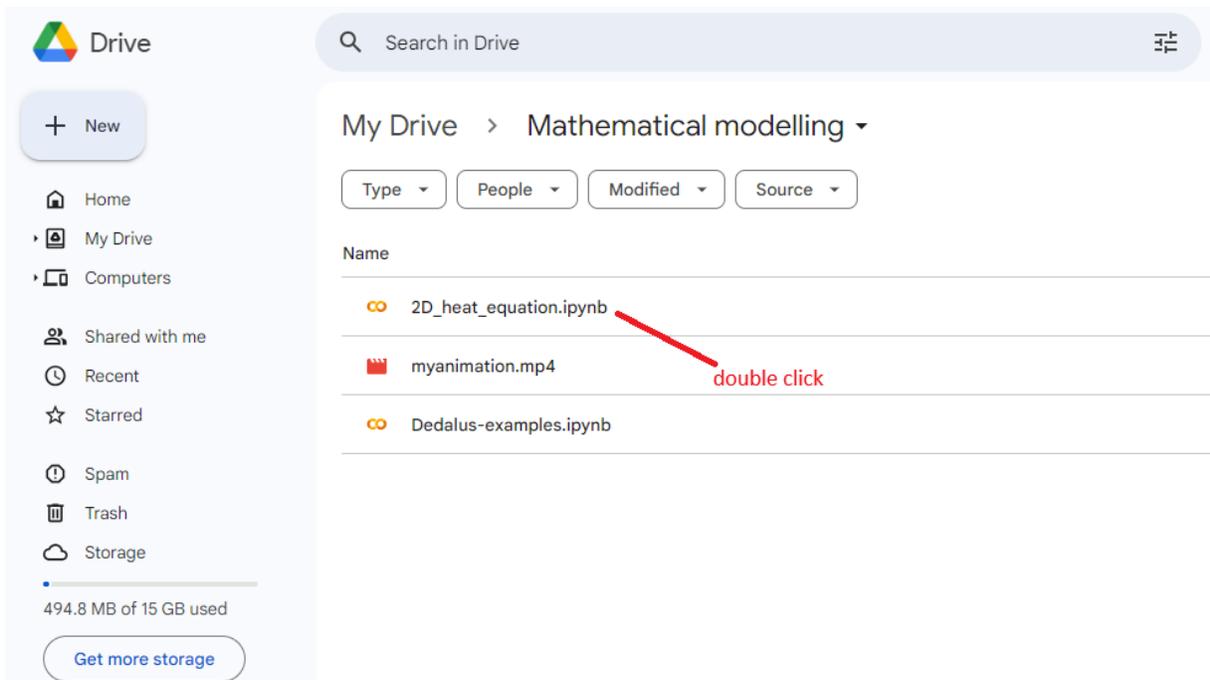
If you have an ipynb file stored on Google Drive, you can create/open/run/edit it as follows:

1. Go to Google Drive
2. To create a blank ipynb file, click on the plus sign “New”.





3. To open an existing ipynb file, just double click on that file.



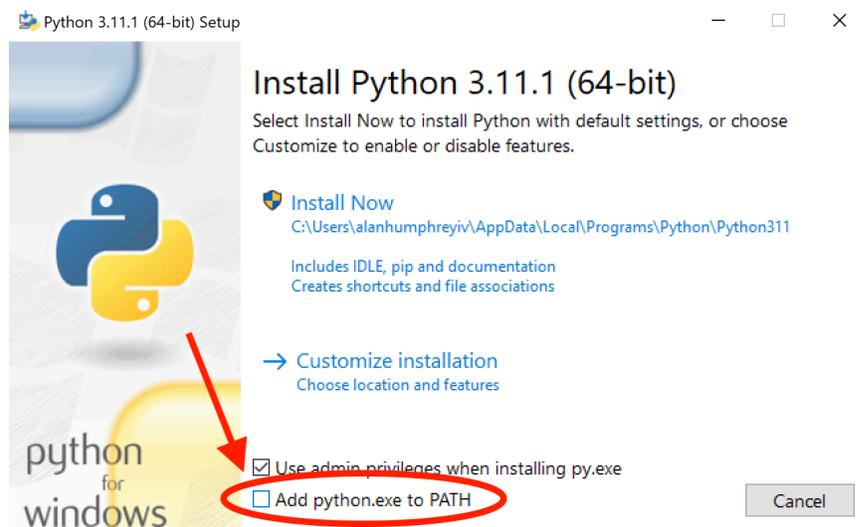
Set up Python

Download the latest version of Python from <https://www.python.org/downloads/>

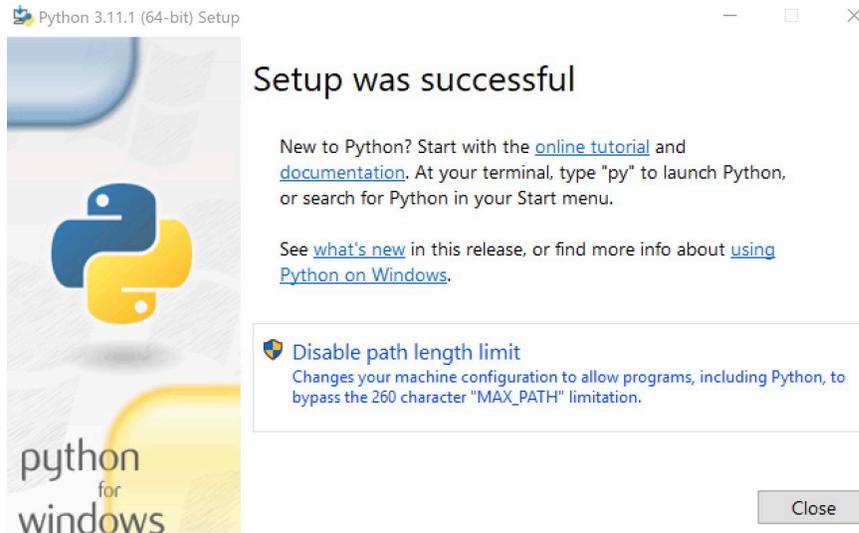


On Windows

Open the .exe file that was downloaded. Check “**Add python.exe to PATH**”. Then press  **Install Now** and continue the installation.

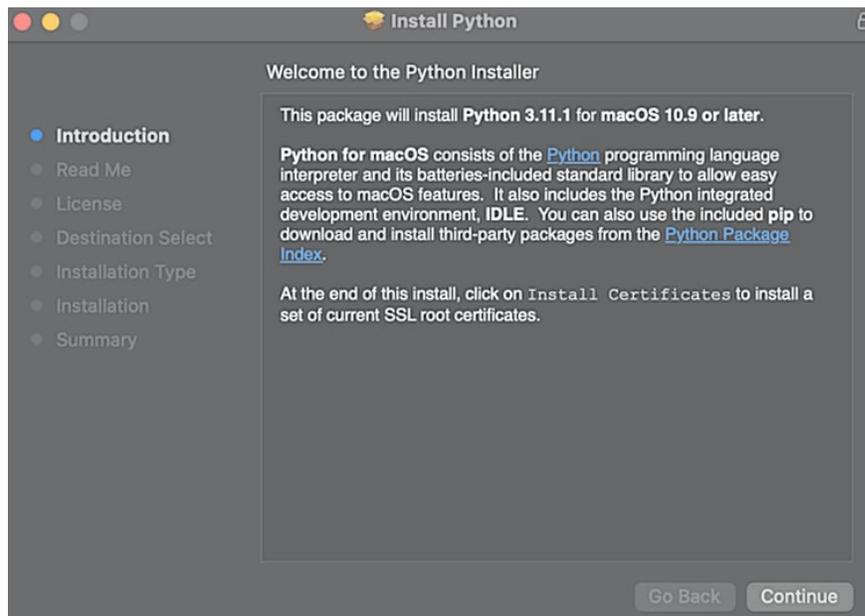


Before closing the installer, make sure to click on “**Disable PATH length limit**” and agree to the changes.

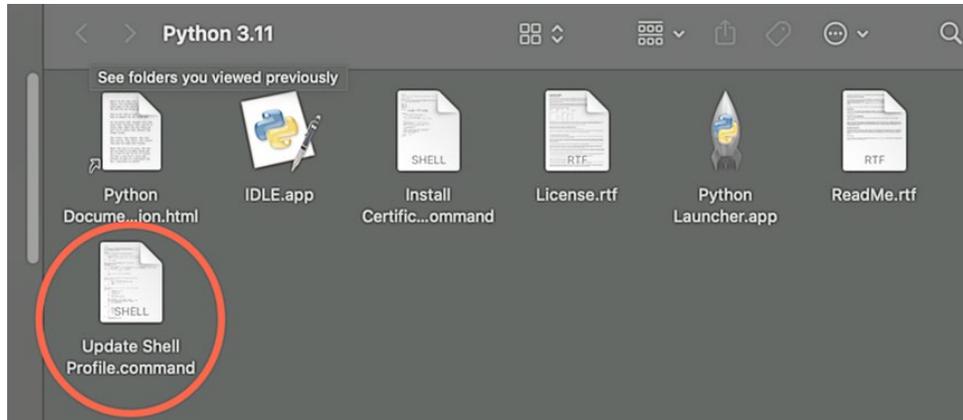


On Mac

Open the .pkg file that was downloaded and go through the Installation prompts. All default options should be fine.



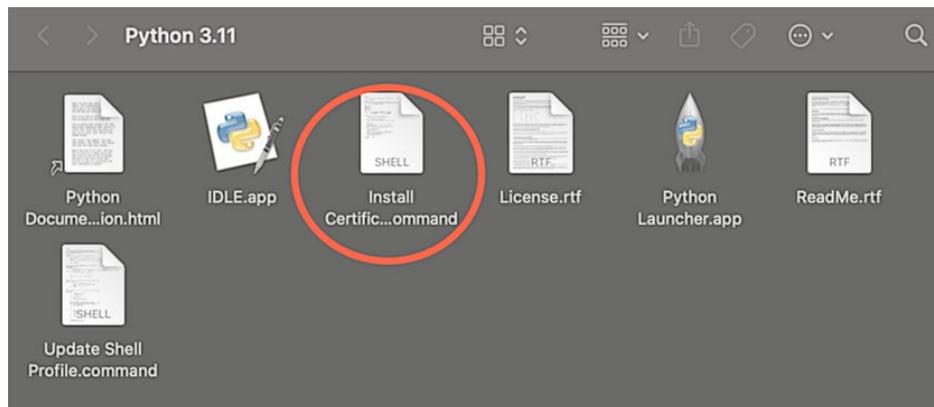
In the folder that is opened, double click “Update Shell Profile.command”. This will open the terminal and should finish with “[Process completed]”.



```
Saving session...  
...copying shared history...  
...saving history...truncating history files...  
...completed.
```

```
[Process completed]
```

Now double click “Install Certificates.command”. This should open the terminal and finish with “[Process completed]”.



Python should be installed. You can now exit out of the terminals and the Finder window and move the installer to the trash.

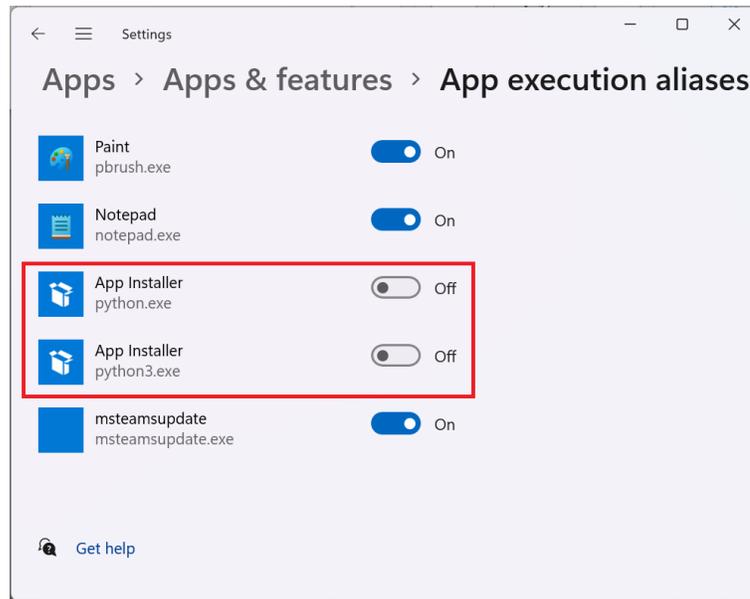
Set up JupyterLab

Install JupyterLab

Open the terminal (both Windows and Mac) and run the following command:

```
python3 -m pip install jupyterlab
```

On Windows, you may receive an error message “Python not found...” In that case, go to Start  and type “Manage App Execution Aliases”. Go to it and turn off Python (see the screenshot below). You might need to restart your computer for the change to take effect. Then go back to the terminal and try again the previous command (in red).



Working on ipynb file with JupyterLab

You can work create/open/edit an ipynb file on your local computer using JupyterLab. Suppose that you have a file testing.ipynb in the folder *Summer 2024*. You can open/run/edit this file *on your local computer* as follows (see the screenshots attached):

1. On your computer, navigate to the local folder Summer 2024.
2. On the address bar, type **jupyter lab** and press Enter. If JupyterLab doesn't open on the web browser, try the command **python -m jupyterlab** instead.
3. A terminal will pop up and a JupyterLab session will open on your web browser. Simply navigate to the file testing.ipynb on the left panel.
4. To end a JupyterLab session, you close the web browser tab and press Ctrl+C (or Cmd+C for Mac) in the terminal.

