香港城市大學
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Introduction to Python, Anaconda, Jupyter Notebook, and Google Colab

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Outline

- Python
- Anaconda
- Jupyter Notebook
- Google Colab

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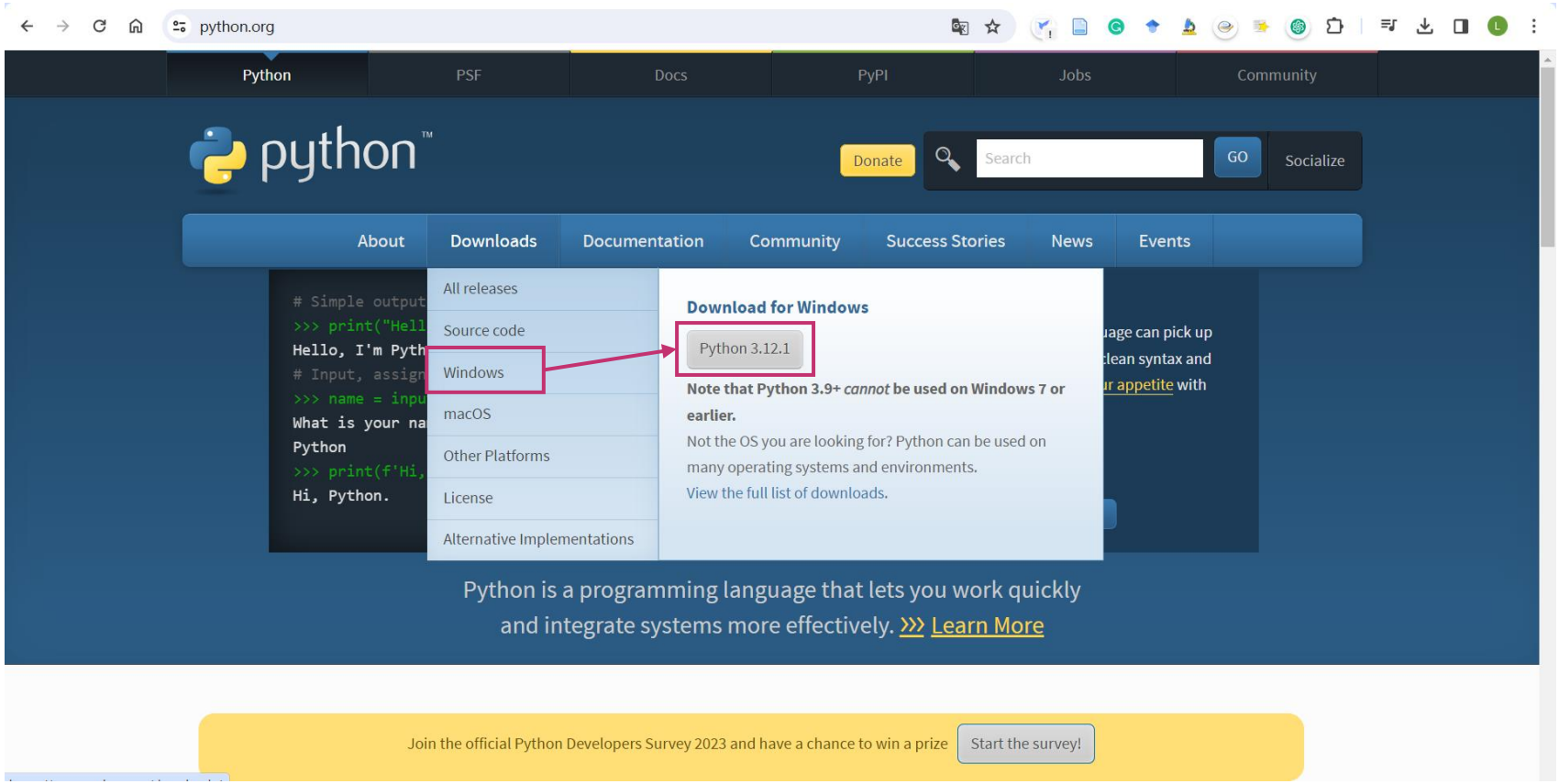
What is Python?

- **Python** is a high-level, interpreted programming language known for its simplicity and readability.
- Created by **Guido van Rossum** and first released in 1991, Python has since become one of the most popular programming languages globally.
- It is designed to be easy to learn and emphasize code readability, making it an excellent choice for beginners and experienced developers alike.

Download and install

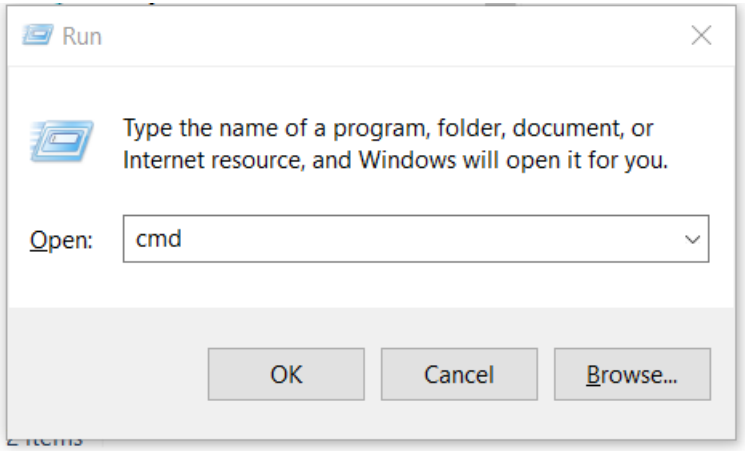
- Download and install Python from the official website: https://www.python.org/.

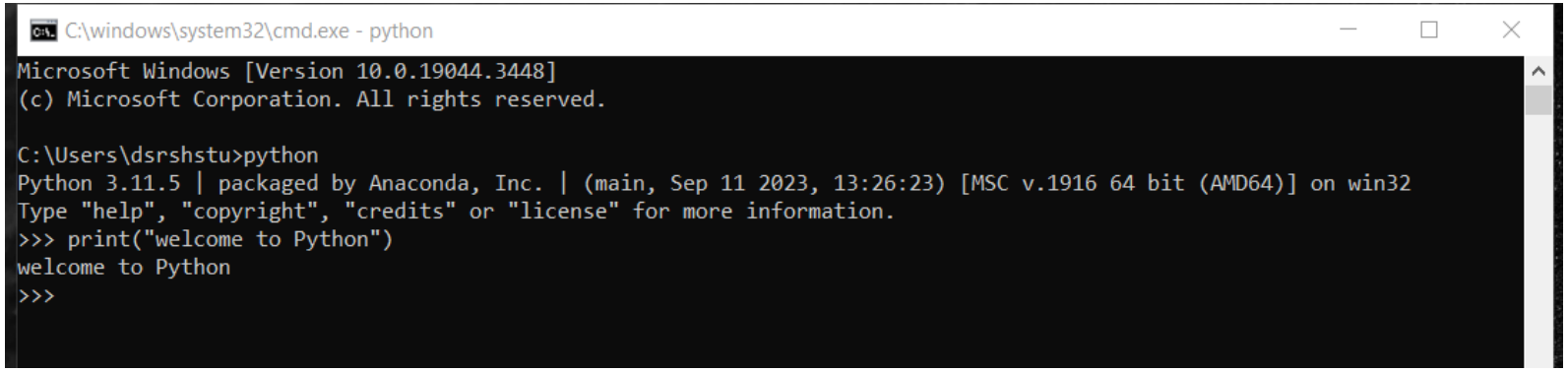


Download and install

Windows Python test

- Open the Command Prompt in Windows
  - Windows + R to open “Run” box
  - Type “cmd” and click “OK”
- Check version and print welcome message
  - Type “python”
  - Type “print("welcome to Python")”





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You can learn more…

- https://docs.python.org/3/tutorial/
- https://wiki.python.org/moin/BeginnersGuide/Programmers
- https://www.w3schools.com/python/
- https://chat.openai.com/

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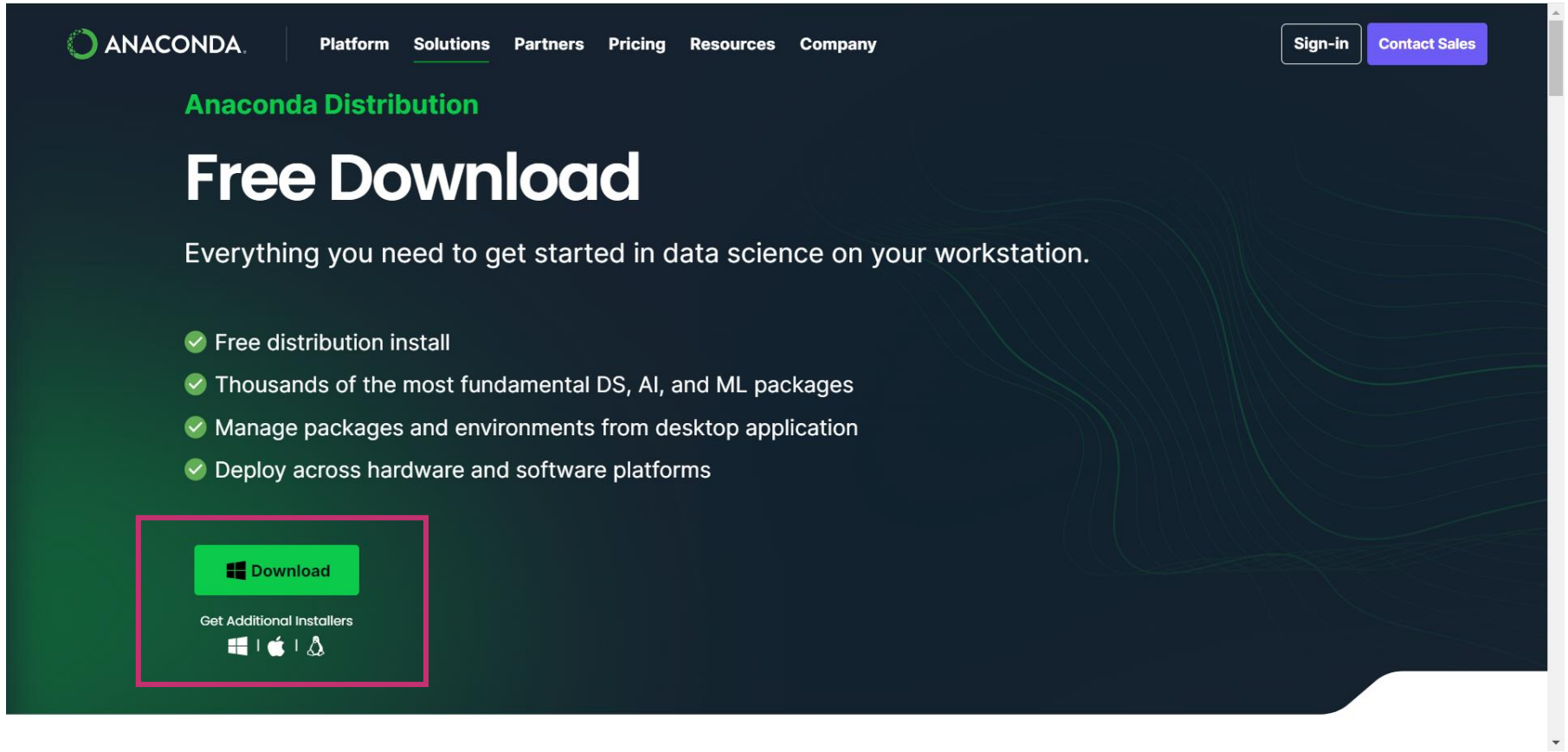
What is Anaconda?

- **Anaconda** is a package manager, an environment manager, and Python distribution that contains a collection of many open source packages.
- An installation of Anaconda comes with many packages such as numpy, scikitlearn, scipy, and pandas preinstalled and it is also the recommended way to install Jupyter Notebooks.

Download and install

- Download and install Anaconda from the official website: https://www.anaconda.com/download.



Download and install

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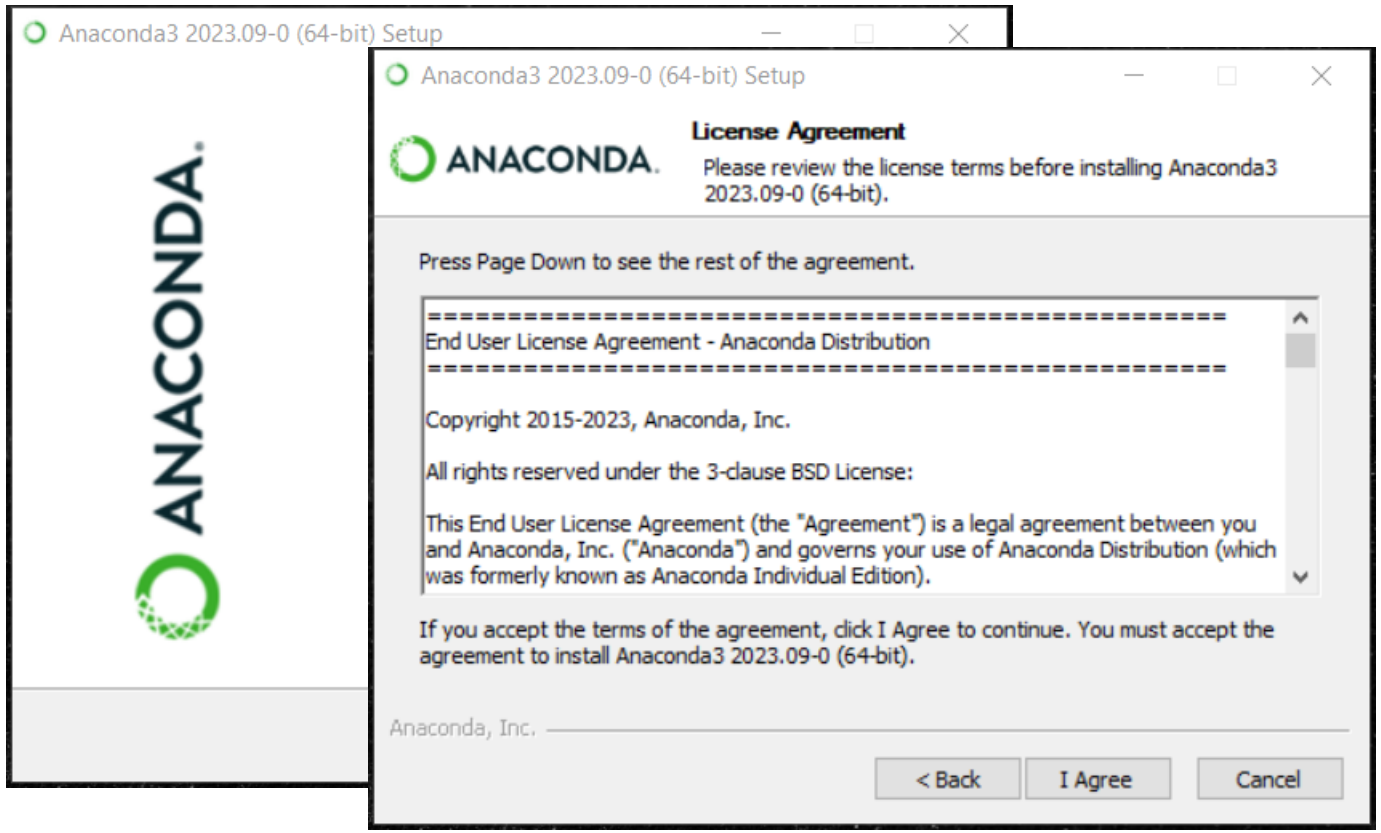

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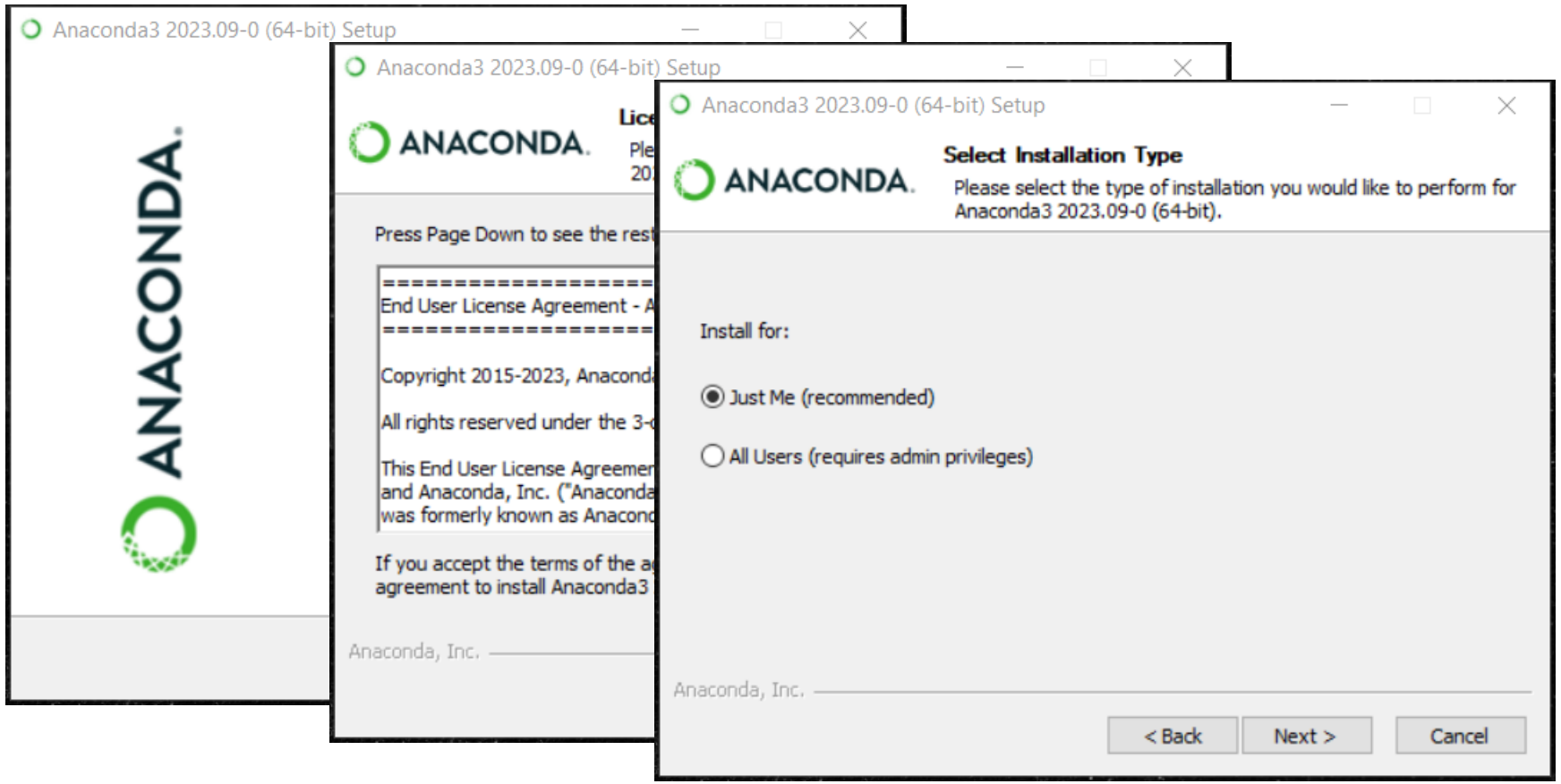
Download and install



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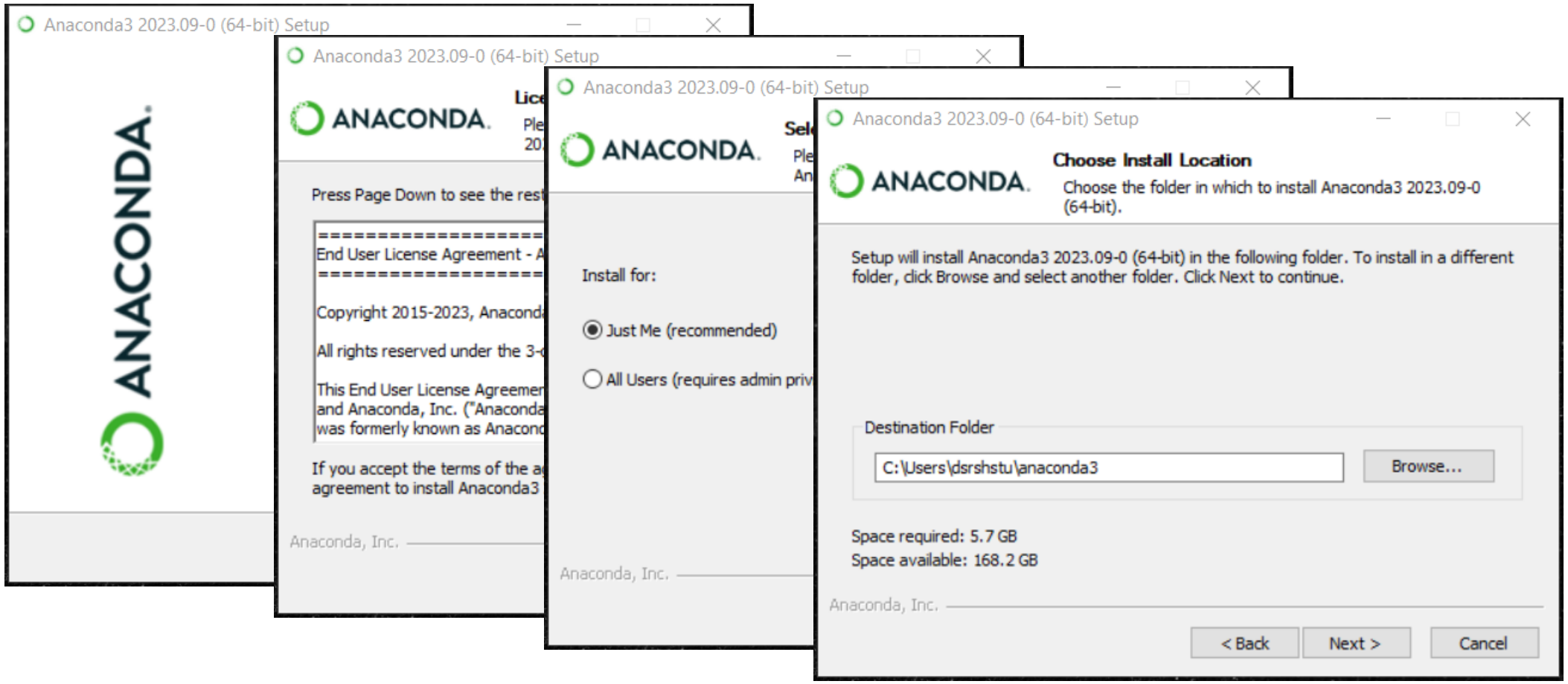

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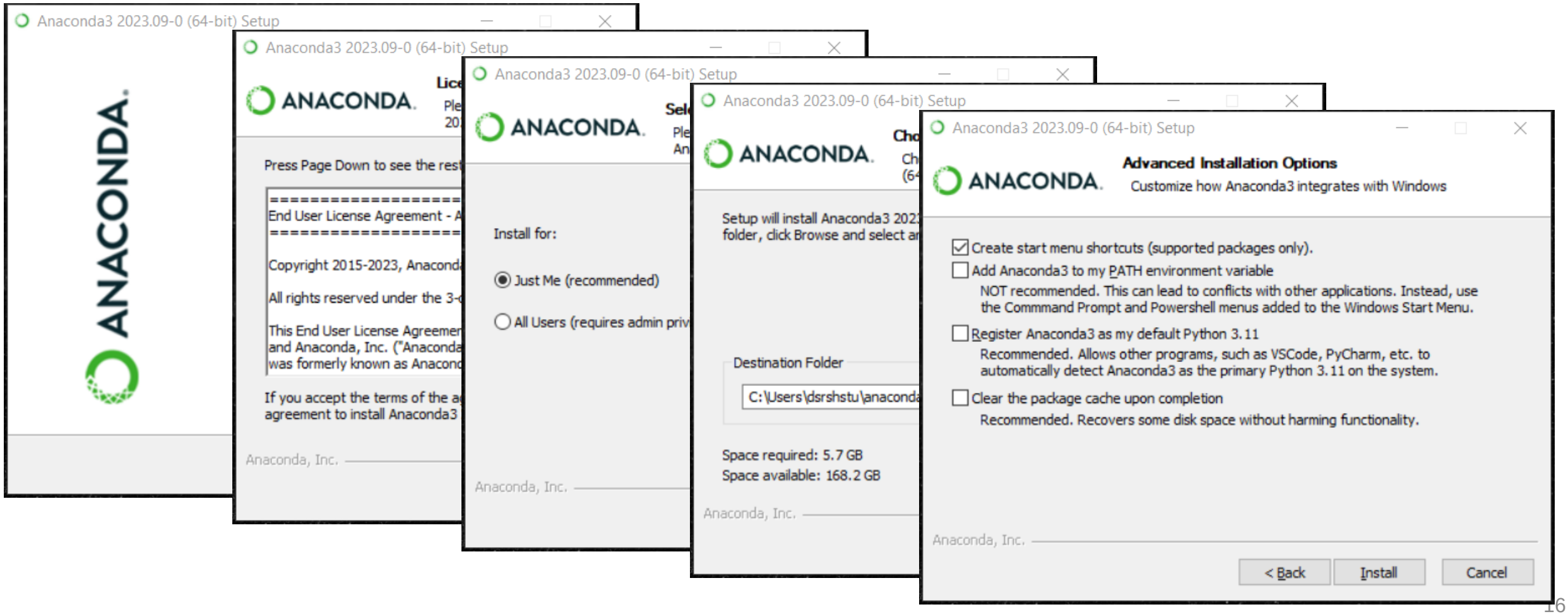
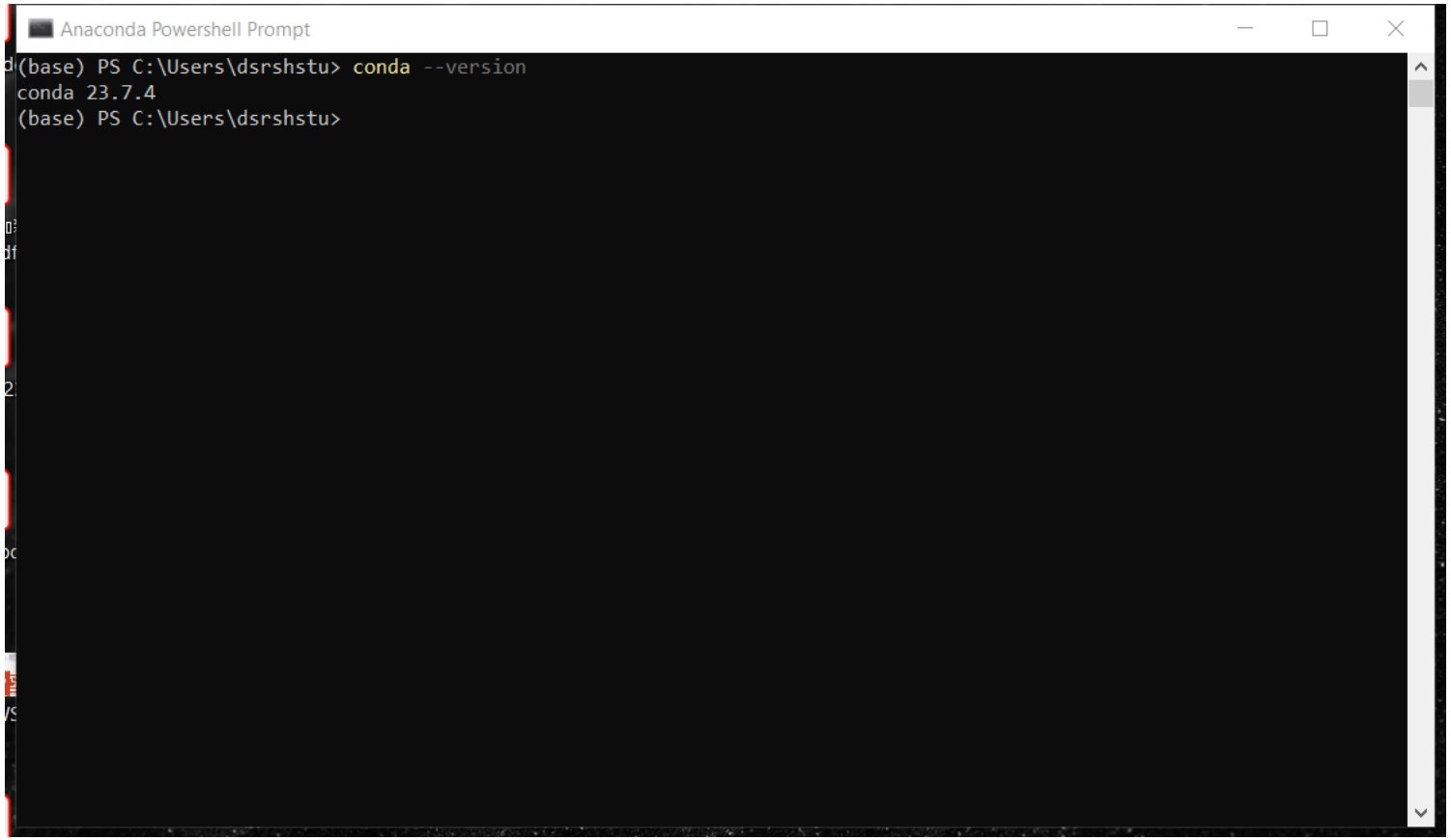


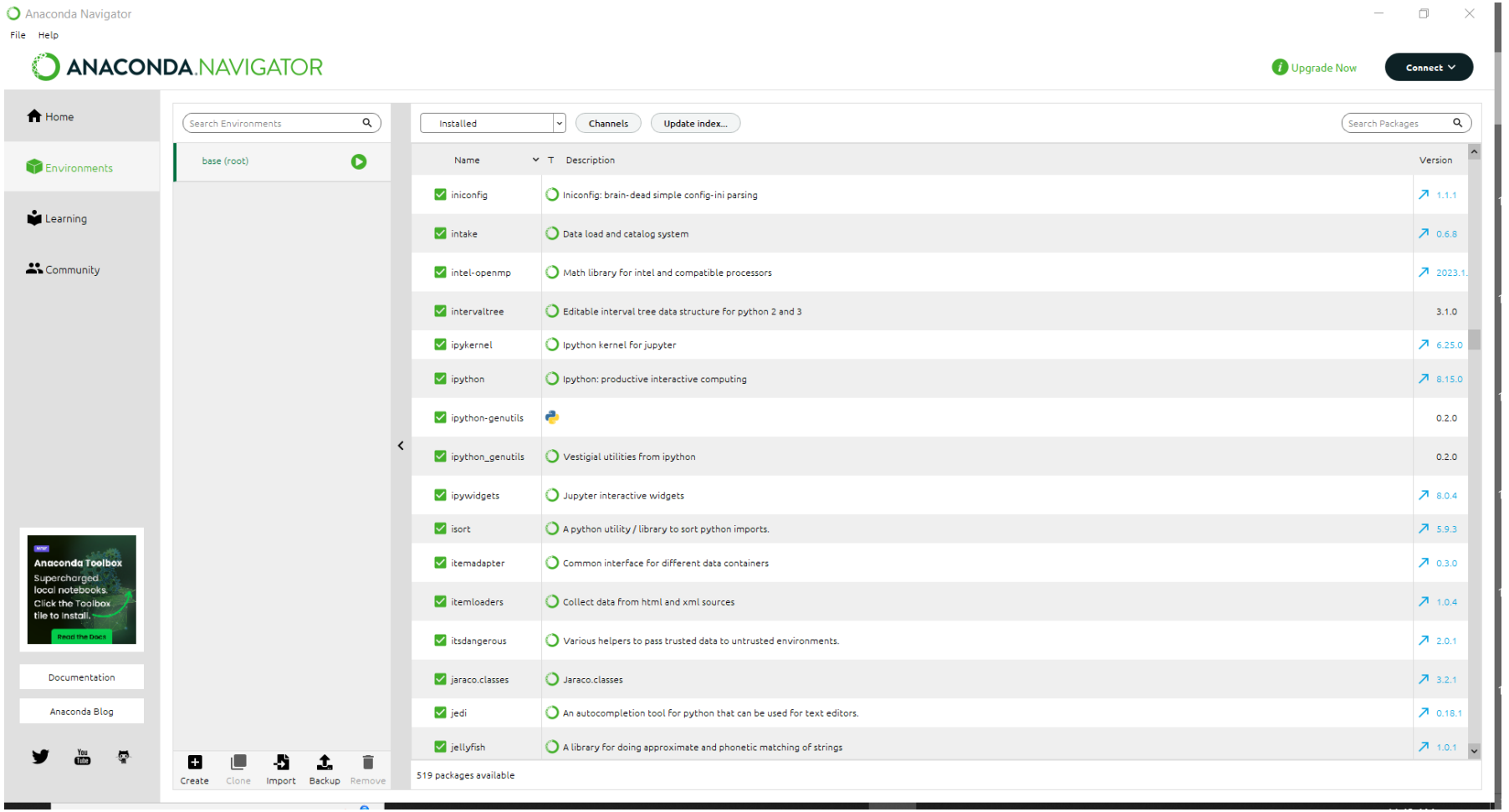
Anaconda test – Anaconda Powershell Prompt (CLI)

- Type “conda --version”



https://docs.anaconda.com/free/anaconda/getting-started/index.html

Anaconda test – Anaconda Navigator (UI)



https://docs.anaconda.com/free/navigator/tutorials/

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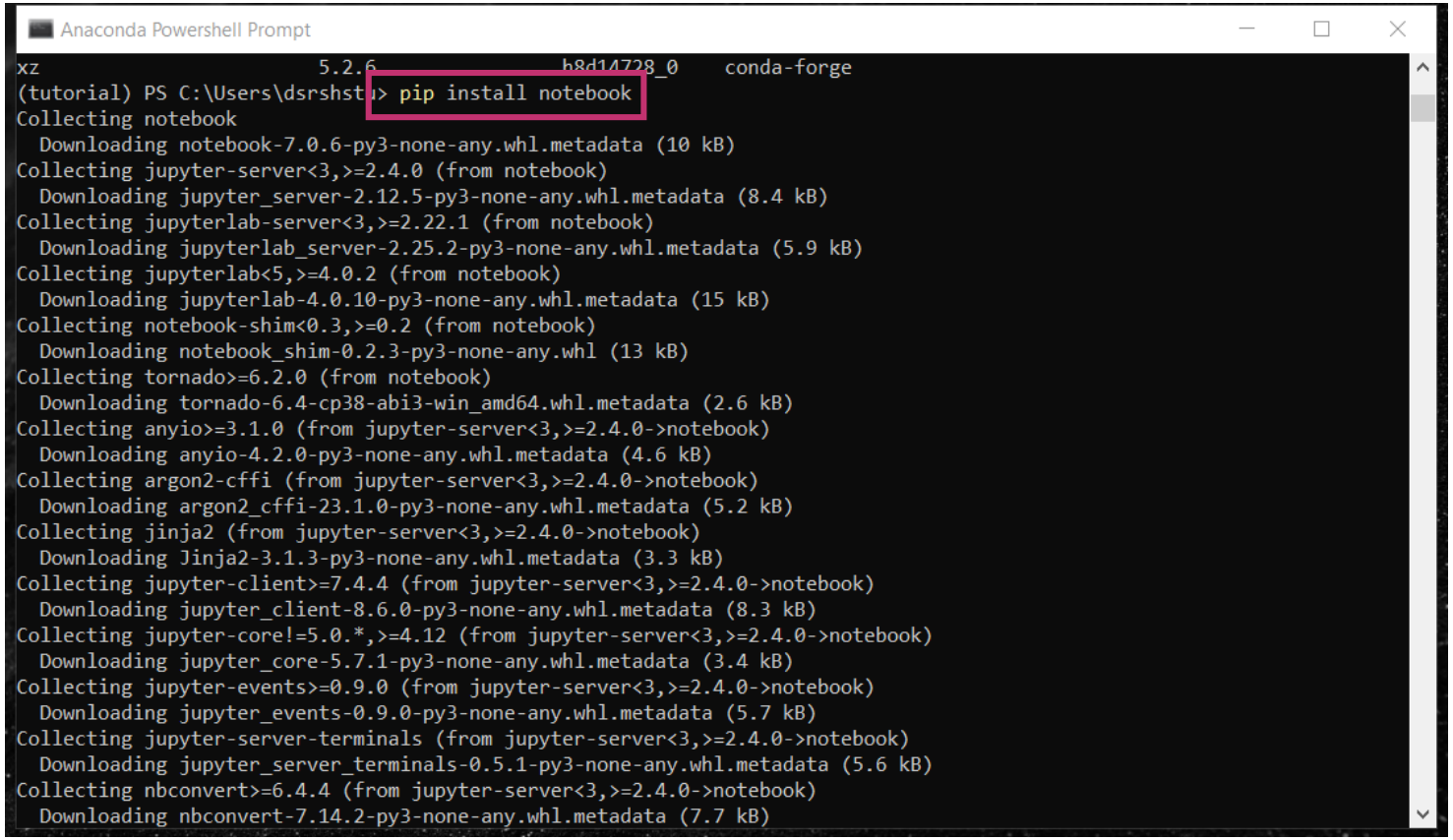
What is Jupyter Notebook?

- **Jupyter Notebook** is an open-source web application that allows you to create and share documents containing live code, equations, visualizations, and narrative text.

Download and install

- Type “pip install notebook” in Anaconda Powershell Prompt



https://jupyter.org/install

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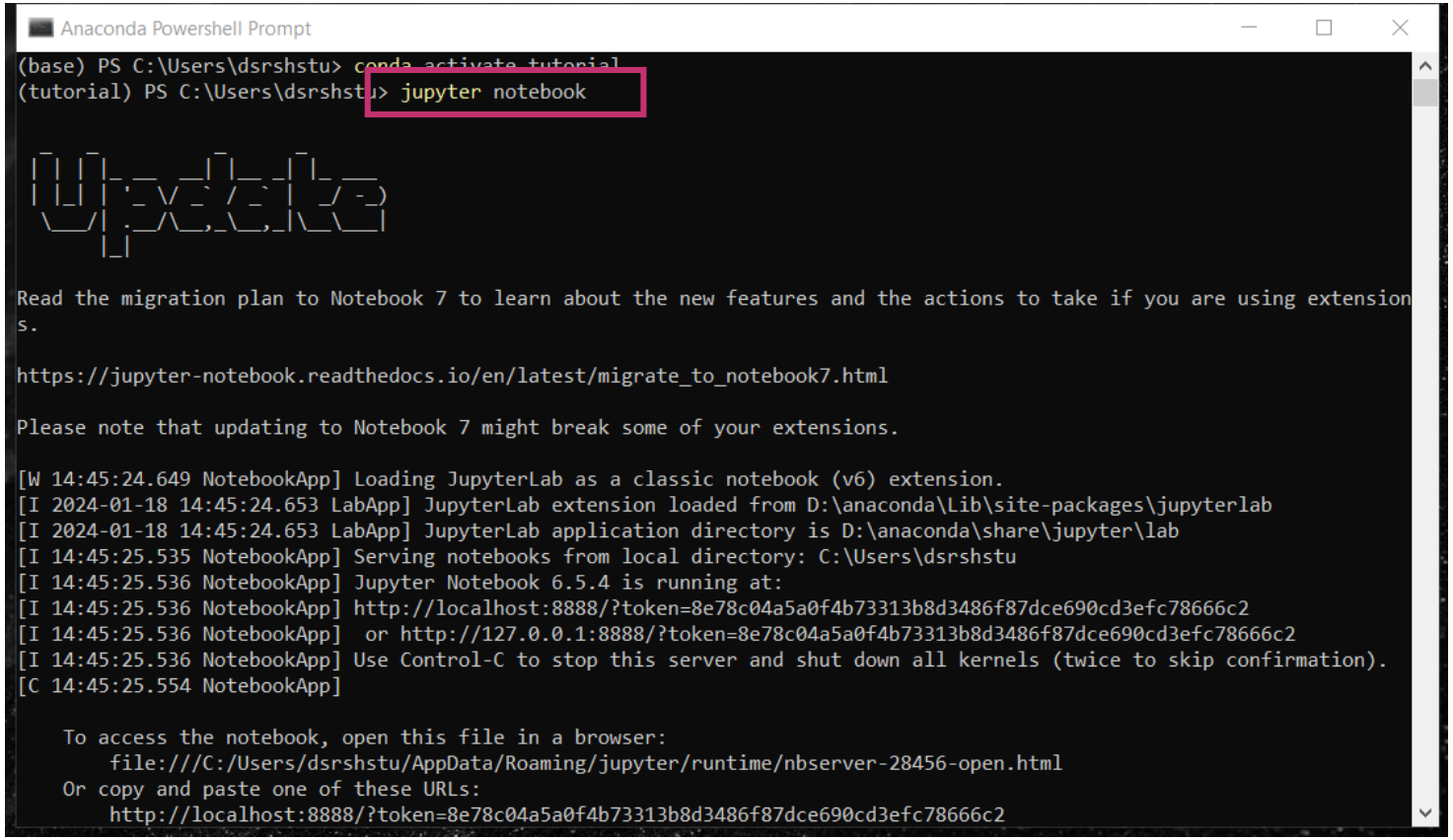
Jupyter notebook test

- Type “jupyter notebook” in Anaconda Powershell Prompt



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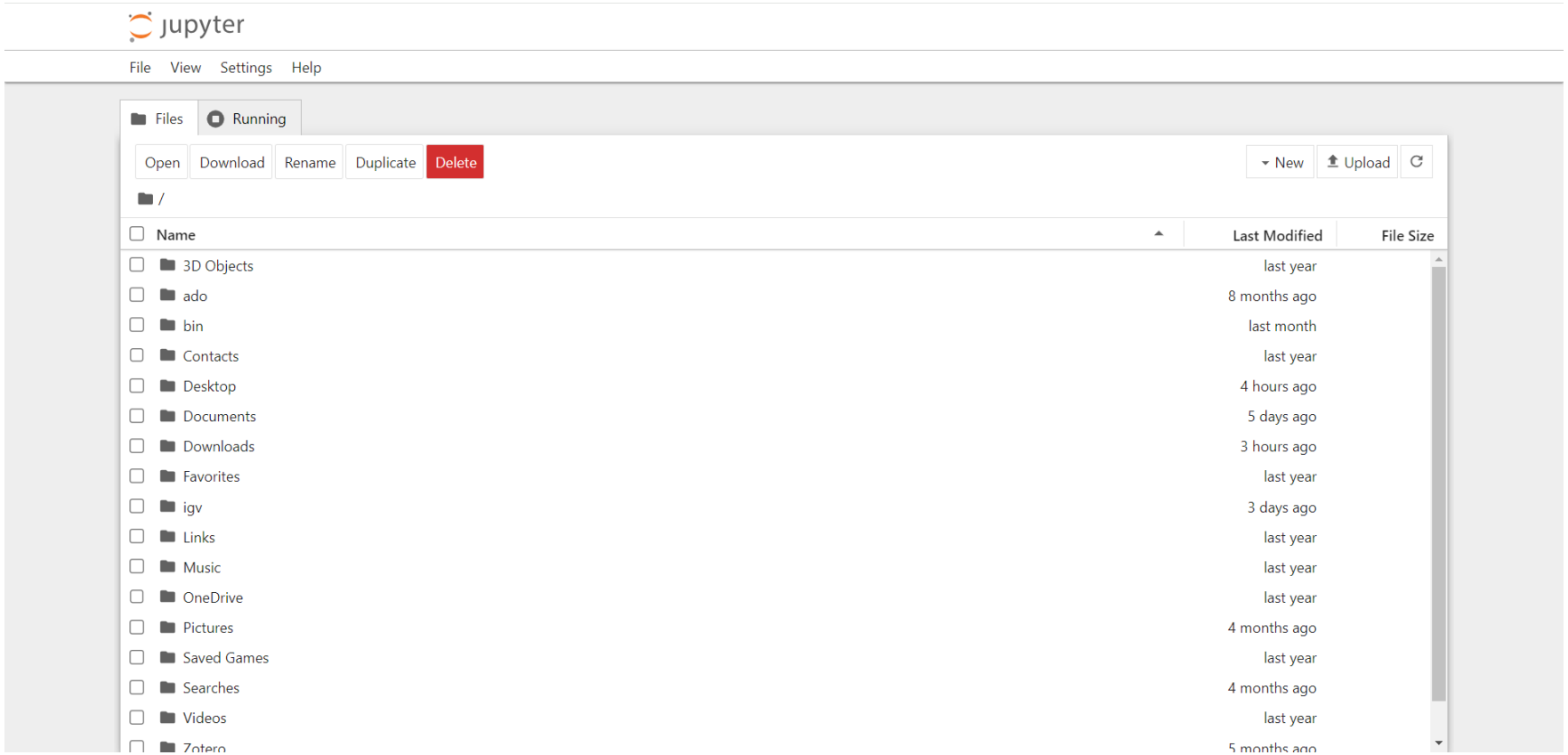
Jupyter notebook test



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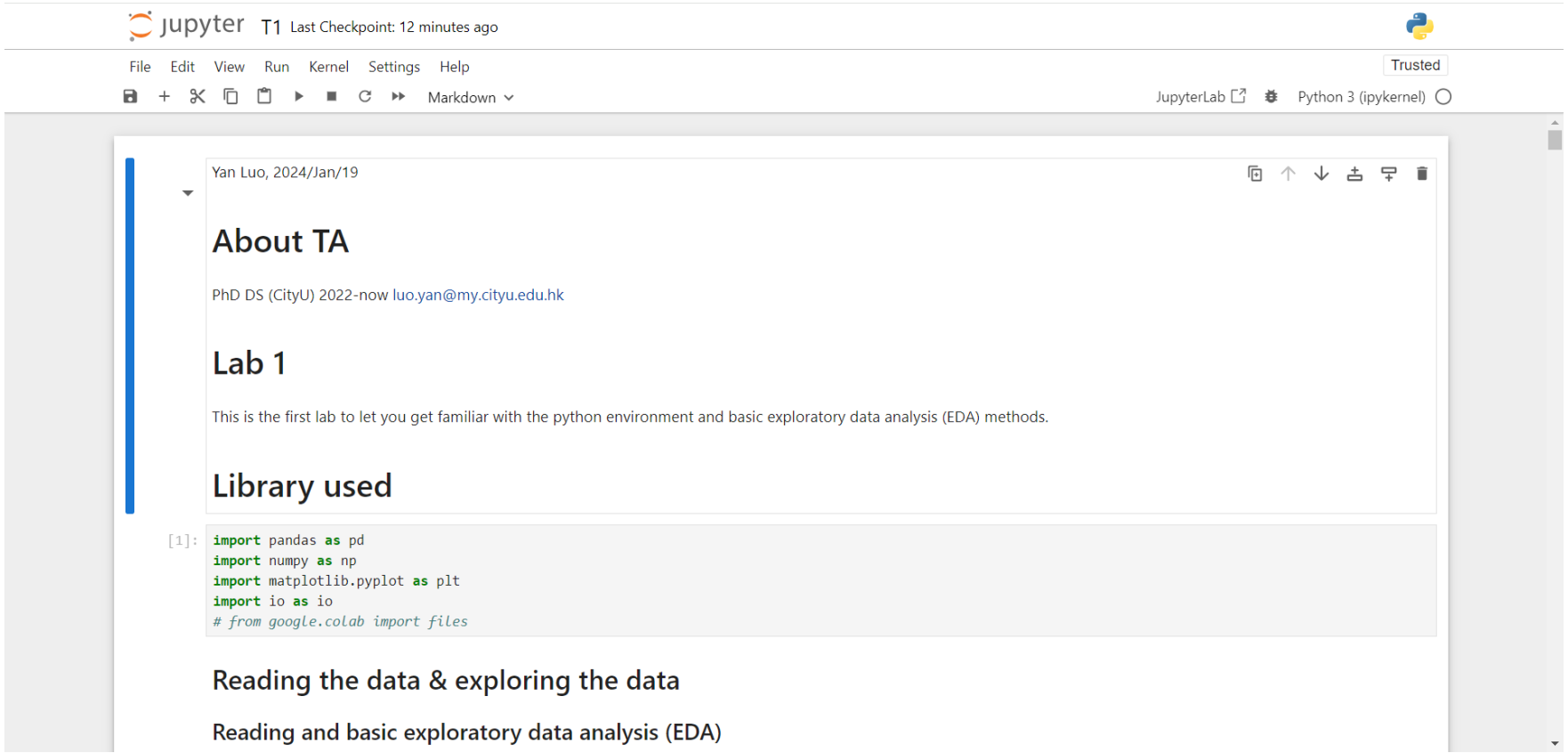
Jupyter notebook test



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What is Google Colab?

Colab, or "Colaboratory", allows you to write and execute Python in your browser, with

- Zero configuration required
- Free access to GPUs
- Easy sharing

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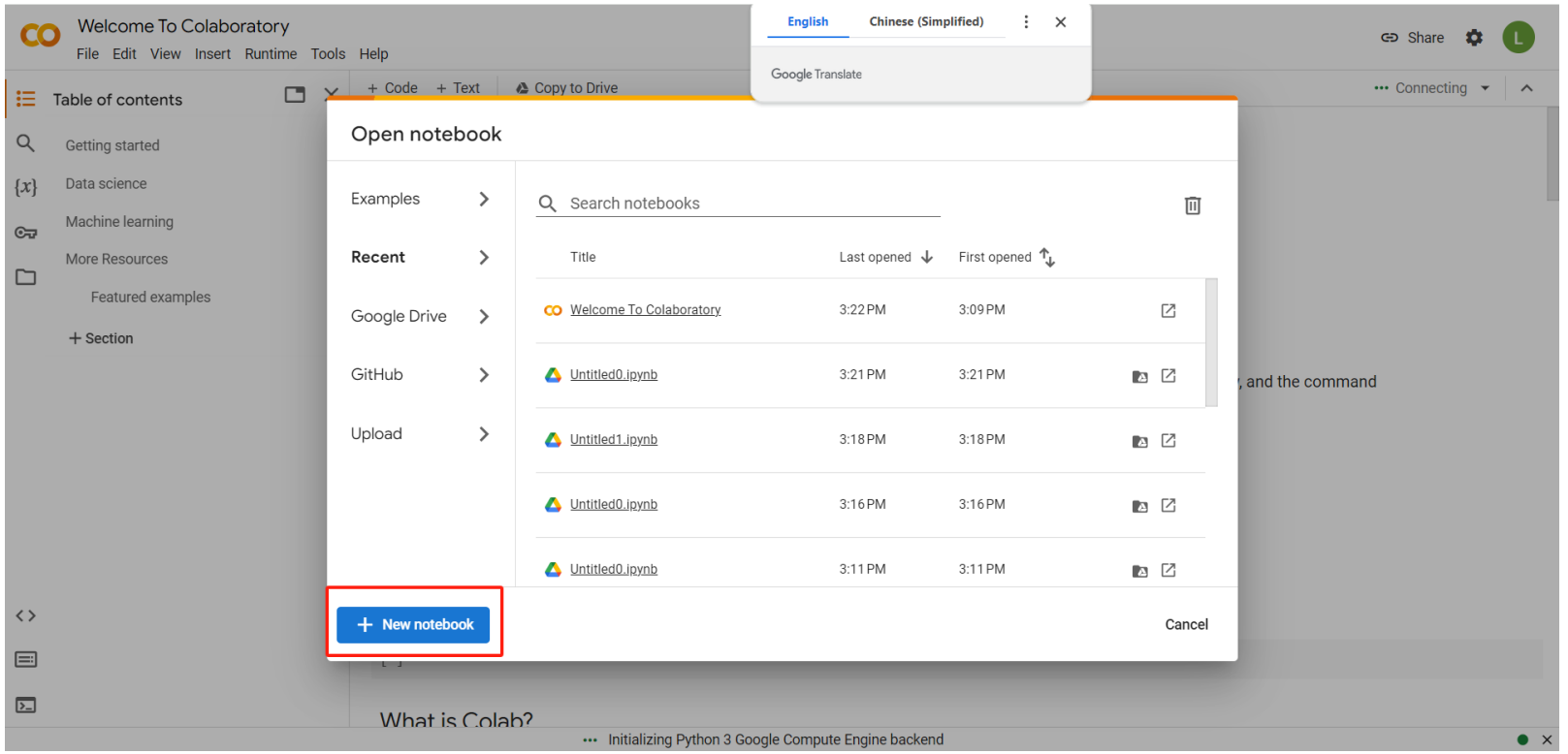
Getting Started

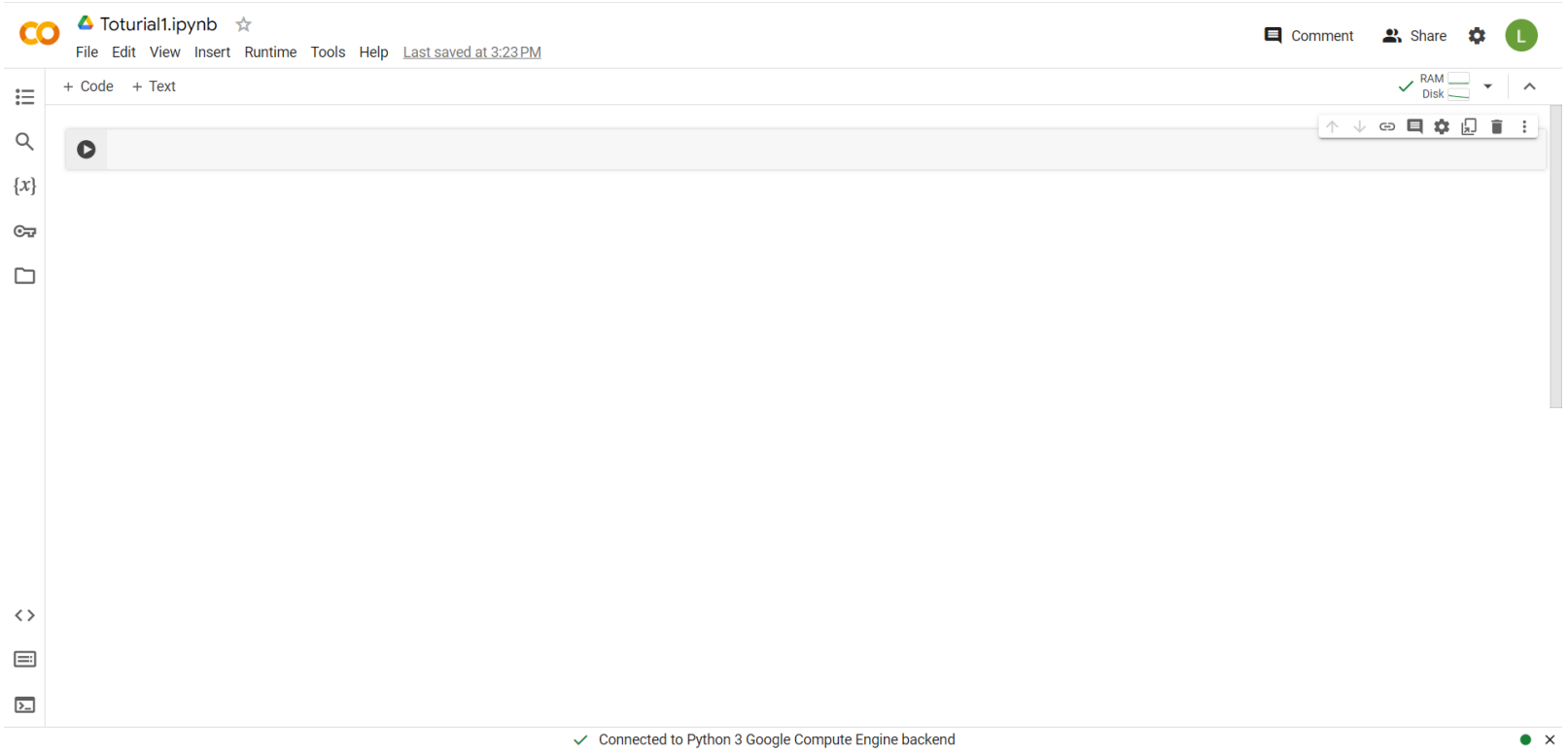
Creating a new notebook



https://colab.research.google.com/

Getting Started

Creating a new notebook



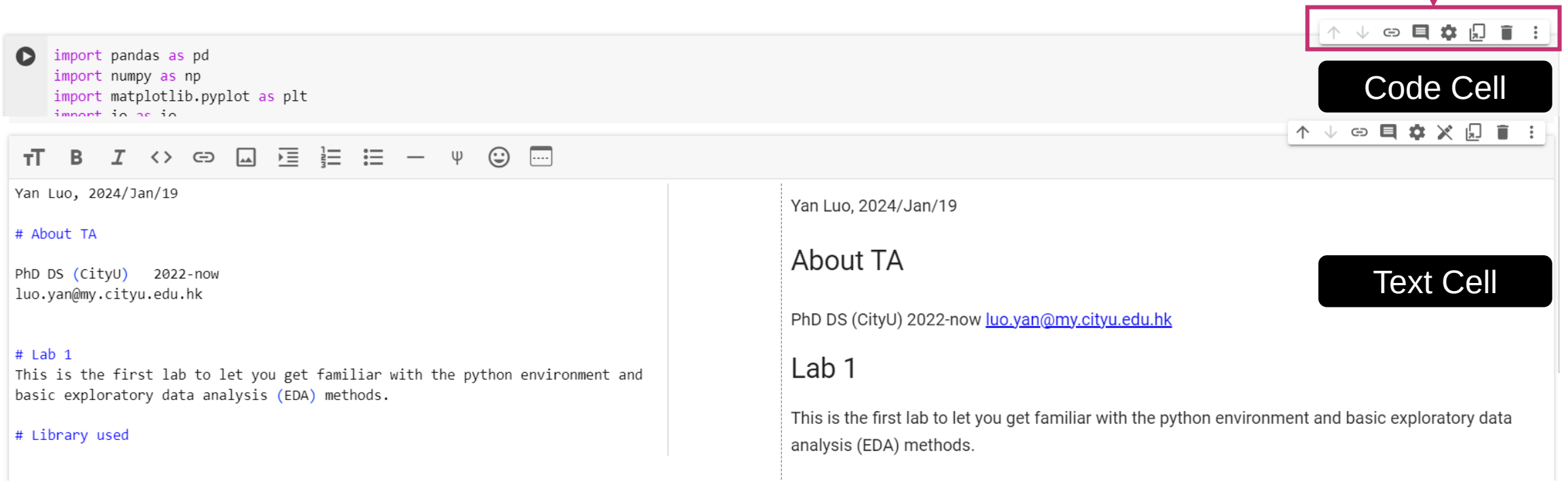
https://colab.research.google.com/

Getting Started

Creating a new cell

You can create a new code cell by clicking on + Code, clicking on + Text generates a text cell.

There are options for moving your cell up/down or copy or delete it.



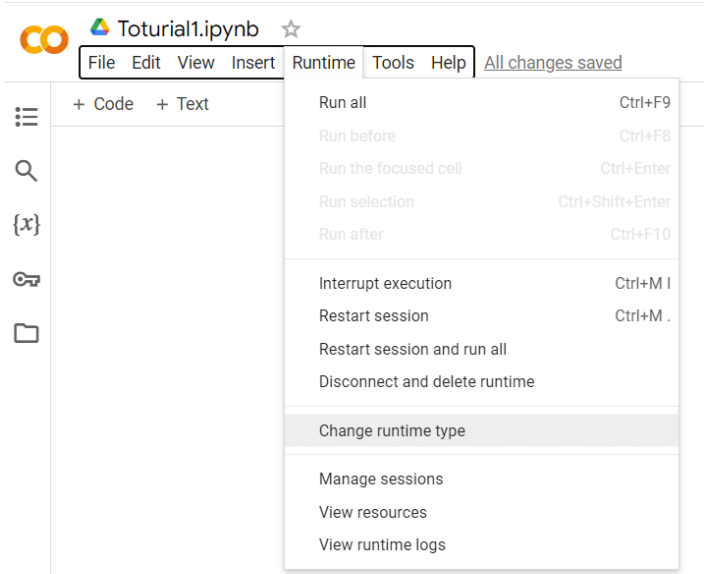
Changing Runtime

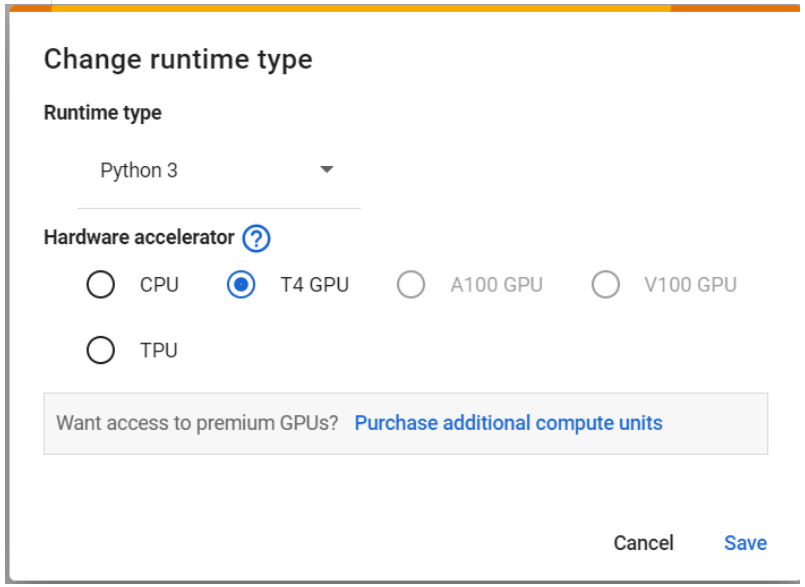
To utilize the free GPU provided by google,

click on "Runtime" → "Change Runtime Type“

select any "**GPU**" for "Hardware Accelerator"

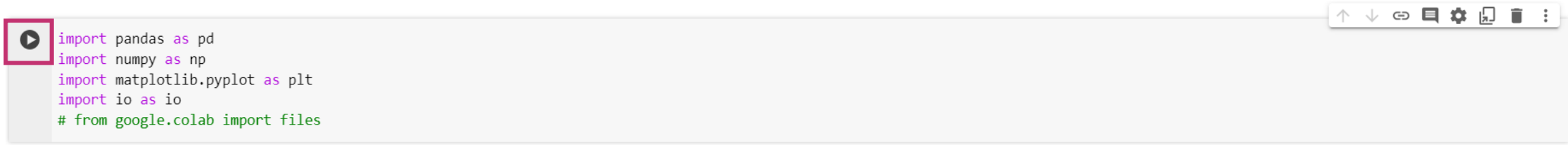
Doing this will restart the session, so make sure you change to the desired runtime before executing any code.



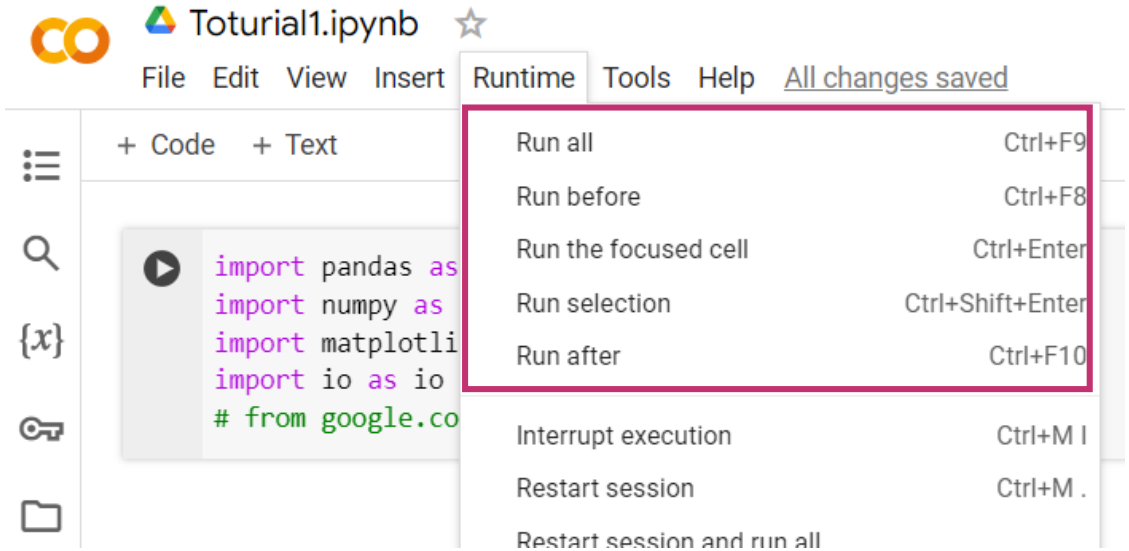


Executing Code Block

Click on the play button to execute a specific code cell

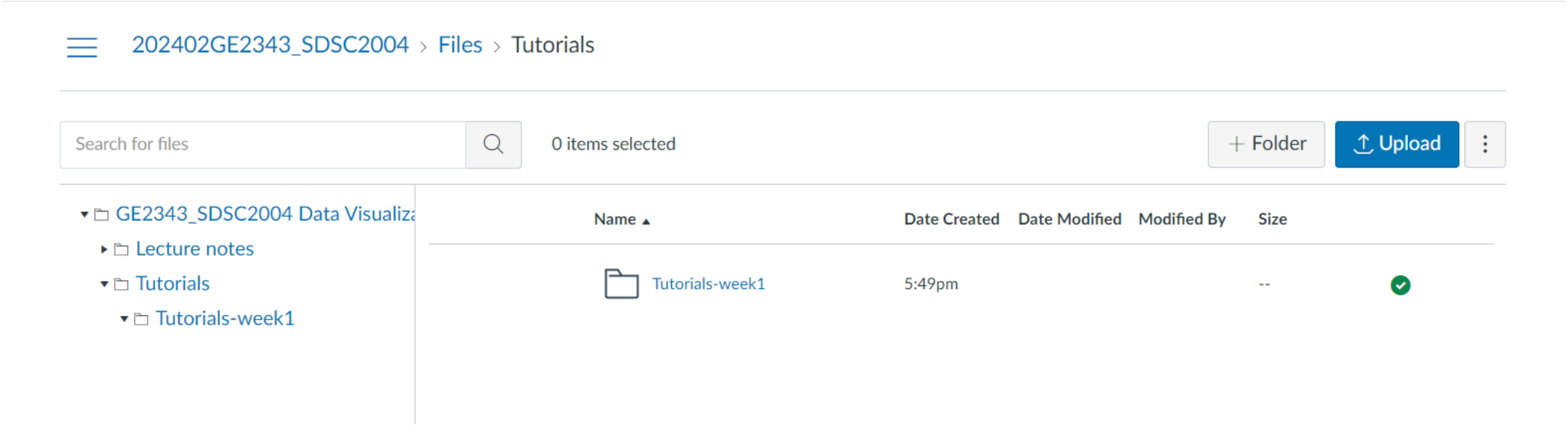


Other options to run your code



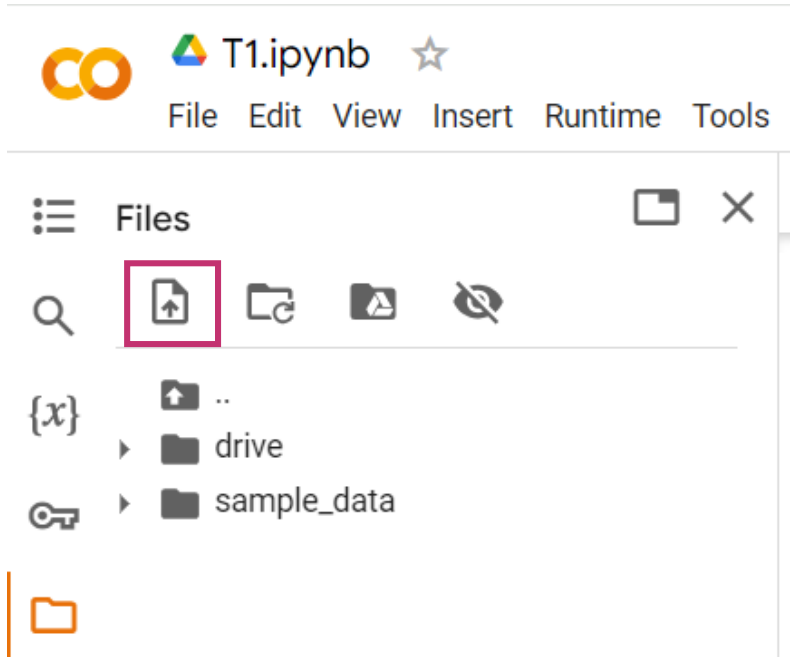
Upload and Download Files

Download the file folder from the Canvas.

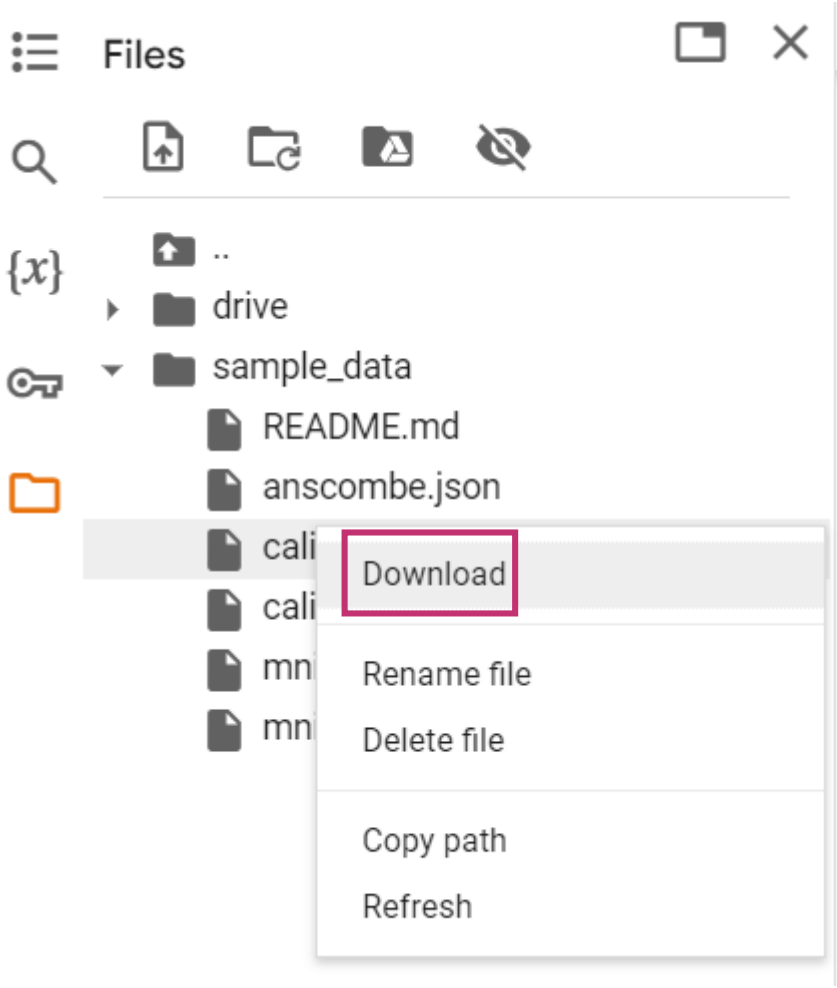


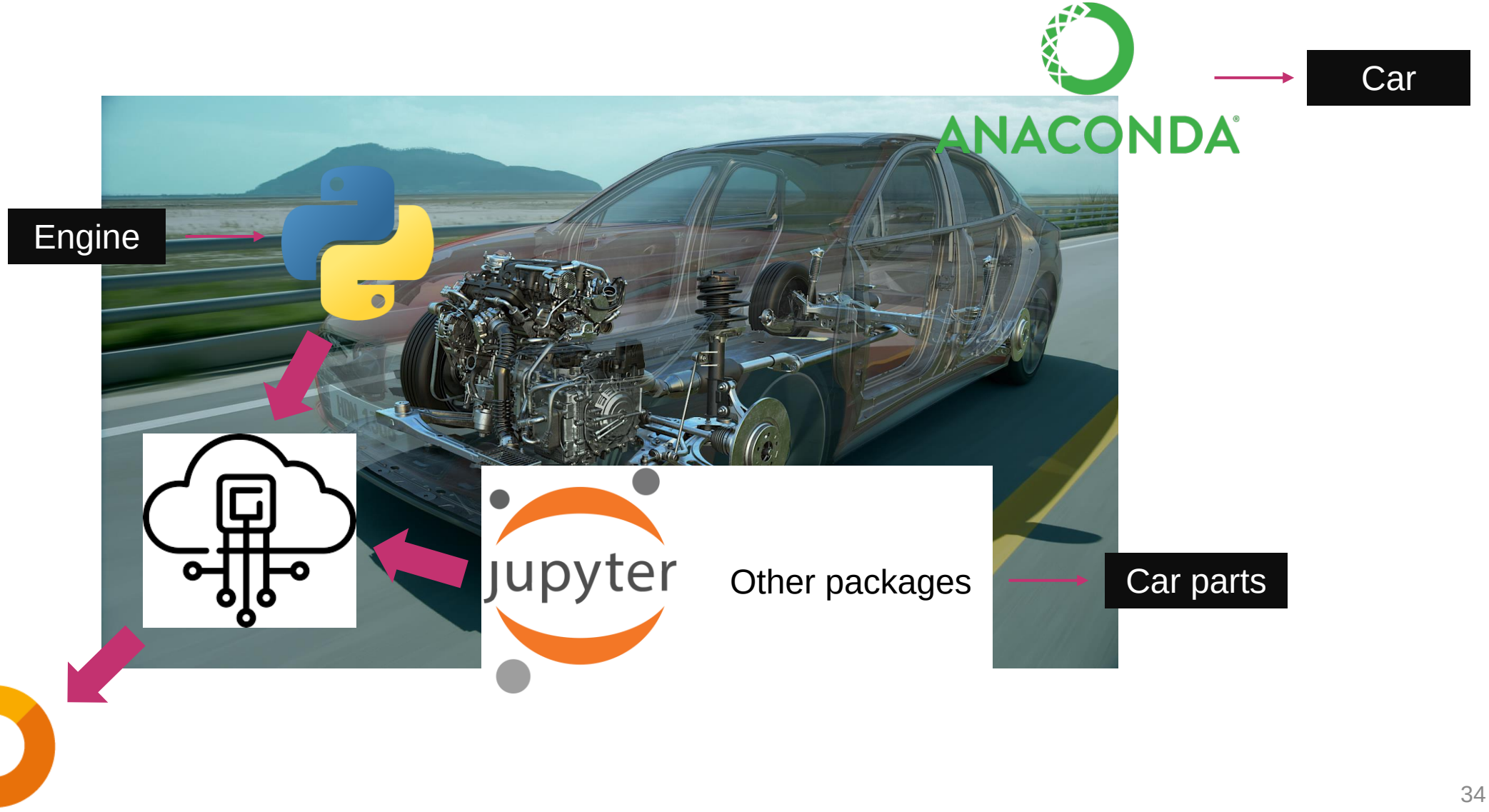
Upload and Download Files

Click the upload icon to upload local files to your session.



Click ⋮ to download files to your local machine.




Car
ANACONDA
Engine
jupyter
Other packages
Car parts