INTRODUCTION TO PYTHON

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LESSON 1: INSTALLATION OF PYTHON AND JUPYTER

WHY PYTHON?

- Python was designed as an easy to use genral-purpose programming language.
- It supports object-oriented and functional programming paradigms.
- Python is very popular and has a strong user community.
- It can be used for a wide range of applications: including web development and machine learning.
- Why is it called “Python”? (your own homework!)

JUPYTER NOTEBOOK

- “The Jupyter Notebook is a web application for creating and sharing computational documents. It offers a simple, streamlined, document-centric experience” (Jupyter.org).

- We will use Jupyter Notebook as a development environment for writing and practicing Python programming. It provides a simple interactive experience for the programmer.

STEP1: INSTALL PYTHON

- Install Python 3 on your computer:

  https://www.python.org/downloads/

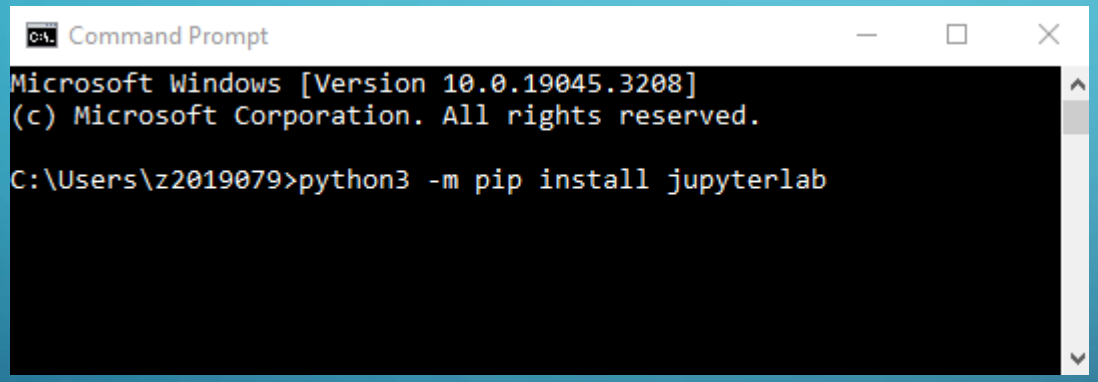
- Alternative to Install. Try out Python (Notebooks) at

  https://jupyter.org/try-jupyter/notebooks/?path=notebooks/Intro.ipynb

STEP2: INSTALL JUPYTER

- Install Jupyter Python Notebook using command line:

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



- Find further help on the web;

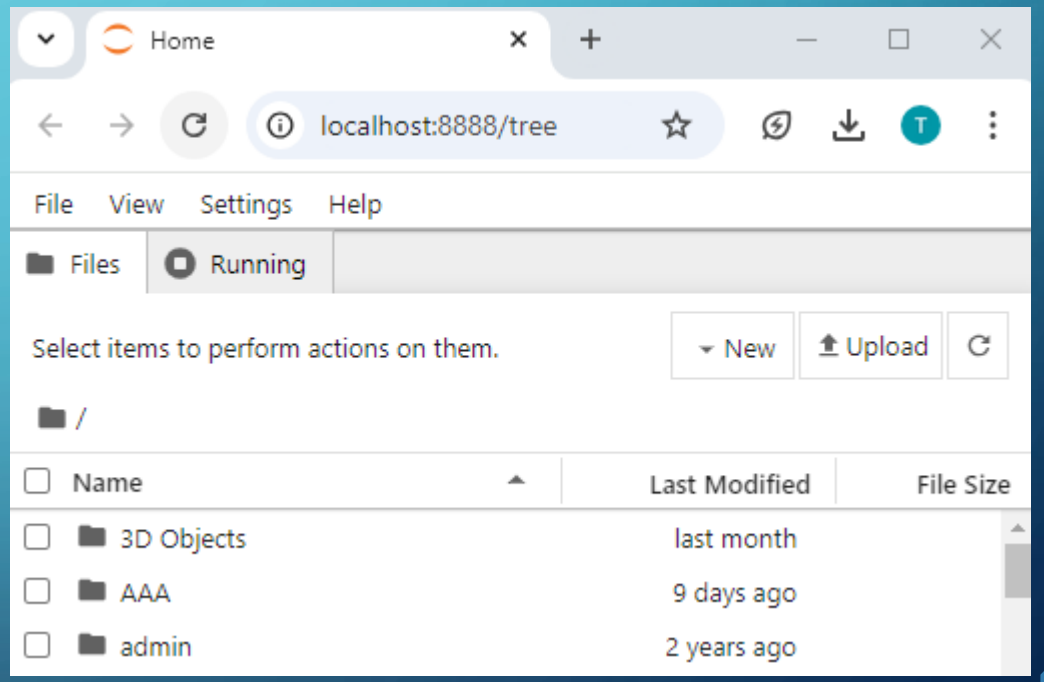
e.g. https://www.csestack.org/install-use-jupyter-notebook-python-example/

STEP 3: START PYTHON NOTEBOOK

- Run Python Notebook using the command line:

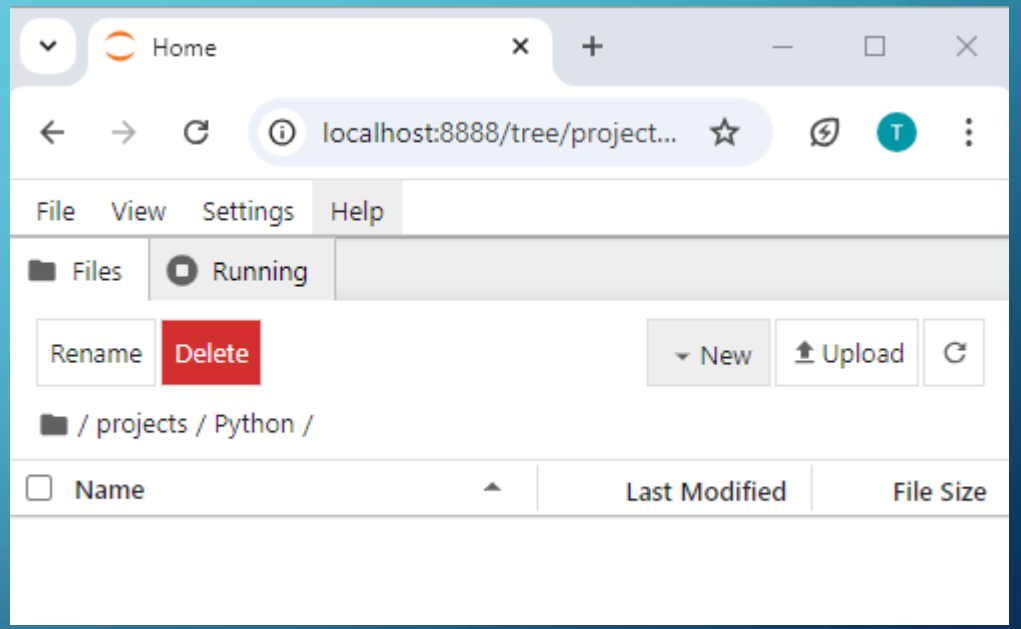
```
python3 -m notebook
```

- This opens a local Jupyter web page with URL http://localhost:8888/tree
- Do not close the terminal session!



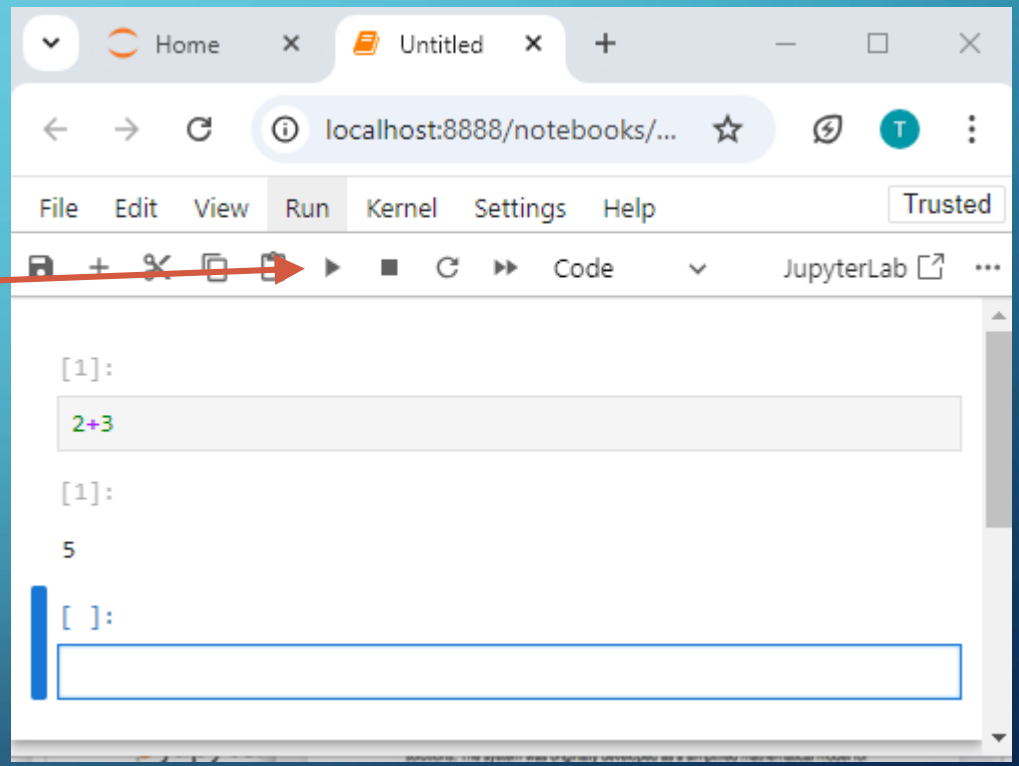
STEP 4: SELECT PROJECT DIRECTORY

- Create a directory for you to use to write your Python code.
- Navigate to this directory in the directory tree on the Jupyter web page.



STEP 5: CREATE A NEW PYTHON FILE

- Select New: Python3
- Type 2+3 in the prompt.
- Press he Run button.
- The answer 5 should be displayed.
- Save the Python file as test.ipynb from File->Save Notebook as…



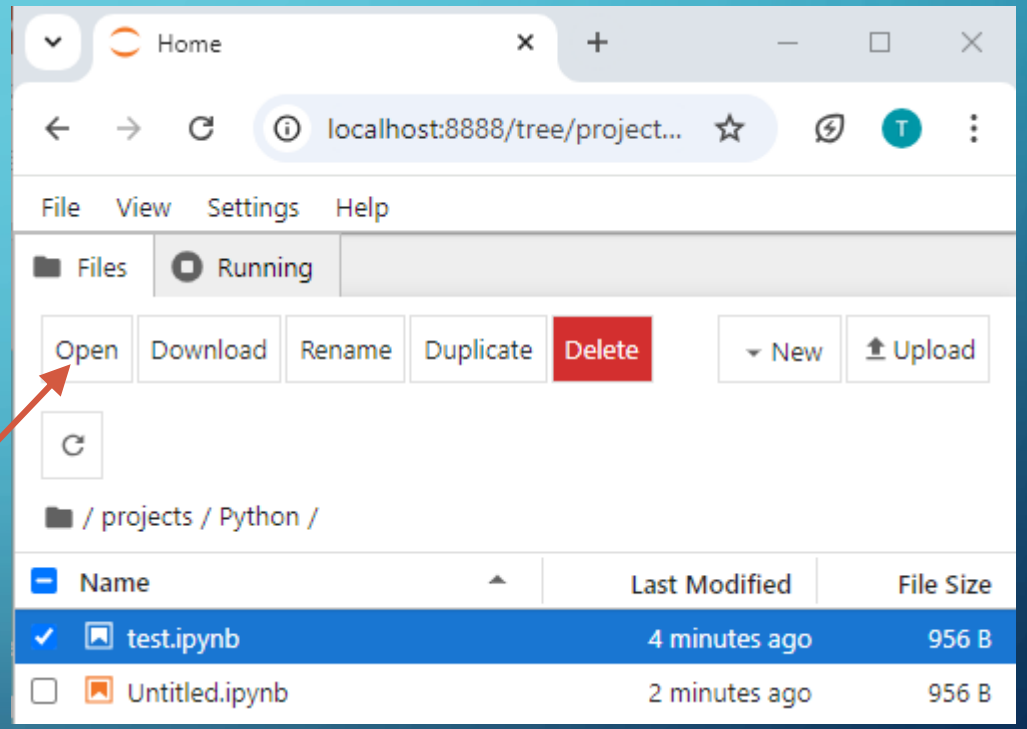
- Note: “ipynb” means “interactive Python notebook”.

STEP 6: RE-OPEN FILE

- Close your Python session form command line (interrupt or close).
- Re-run Python Notebook using the command line:

```
python3 -m notebook
```

- Navigate back to your working directory.
- Select your file and Open.
- This will retrieve your 2+3 session.



FIND OUT MORE ABOUT PYTHON

- Lots of resources on the internet or the library.
- Specific recommendation:

  Chapter: A Crash Course in Python

  United States: O'Reilly Media

  Data Science from Scratch, 2015

  Grus, Joel

  Available as e-copy from UNNC library.