Python and its working platforms

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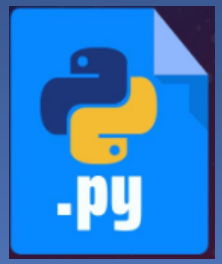
Recognize Python File



- The .py extension is used for Python source code files.
- Python scripts are written in Python programming language and are executed sequentially by the Python interpreter.
- Python scripts can be executed from the command line or from within an integrated development environment (IDE) such as VS code, PyCharm or Spyder.

- The .ipynb extension is used for Jupyter Notebook files.
- Jupyter Notebooks are a web-based interactive computing environment that allows you to create and share documents that contain code, visualizations, and text.
- Jupyter Notebooks are widely used in data science and scientific research, and are particularly useful for exploratory data analysis and data visualization.
- Jupyter Notebooks can be run locally on your computer or in the cloud using services like Google Colab

Platforms to Operate Python

Web-Based Platforms:

Benefits:

- Accessible from anywhere with an internet connection
- Provides a notebook-style interface for interactive data analysis, scientific computing, and machine learning tasks
- Easy to share with others via web link

Use Cases:

- Data analysis and exploration
- Experimenting with machine learning algorithms
- Collaborating with others on a project

Platforms to Operate Python

IDE-Based Platforms

Benefits:

- Provides a comprehensive environment for writing, debugging, and running Python code
- Offers features such as code highlighting, code completion, debugging tools, and integrated development environments for building larger and more complex software projects
- Can be customize with plugin and extention

Use Cases:

- Developing complex software applications
- Building web applications with frameworks like Django and Flask
- Working with version control systems like Git

Google Colab

- Google Colab is a web-based platform for writing and running Python code
- It offers a notebook-style interface with support for code cells, Markdown cells, and rich text formatting
- It is free to use
- It can be used with Google Drive for easy storage and sharing of notebooks
- Link: https://colab.research.google.com/

Jupyter Notebook -Jupyter lab

- Jupyter notebooks are popular among Python programmers for data science tasks.
- JupyterLab is an upgraded version of Jupyter that offers new improvements while retaining popular features.
- Consider JupyterLab as an alternative to Jupyter notebooks for a modern coding environment for data science.

Features of Jupyterlab

1. Everything under one roof
2. Flexible Layouts
3. Cell rearrangement
4. Copying cells between notebooks
5. Same notebook, more views
6. Code Consoles
7. Themes everywhere
8. Run code from a Text file
9. Simultaneous preview for Markdown
10. Easy switch to classic Notebook view

https://www.analyticsvidhya.com/blog/2020/06/10-powerful-reasons-jupyterlab-data-science/

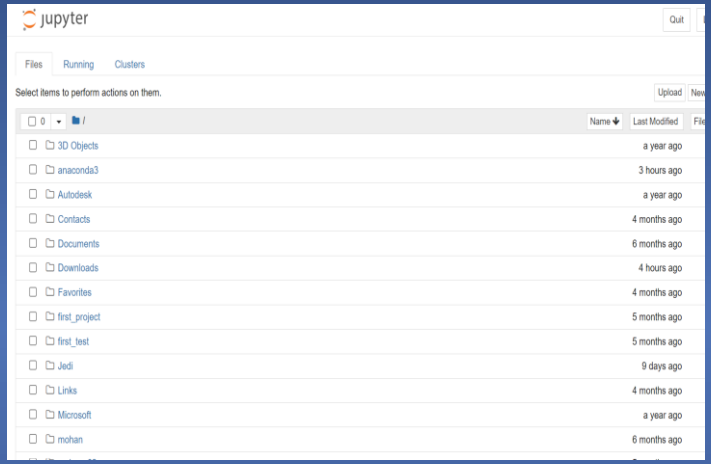
pip
notebook

Install Jupyter

Open PowerShell or CMD from search

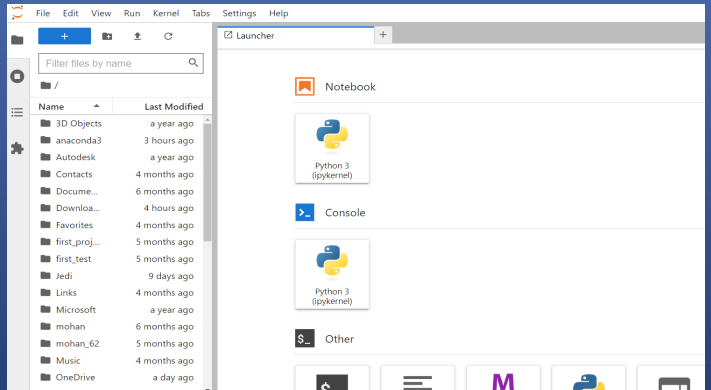
Install- pip install notebook

Open- jupyter notebook



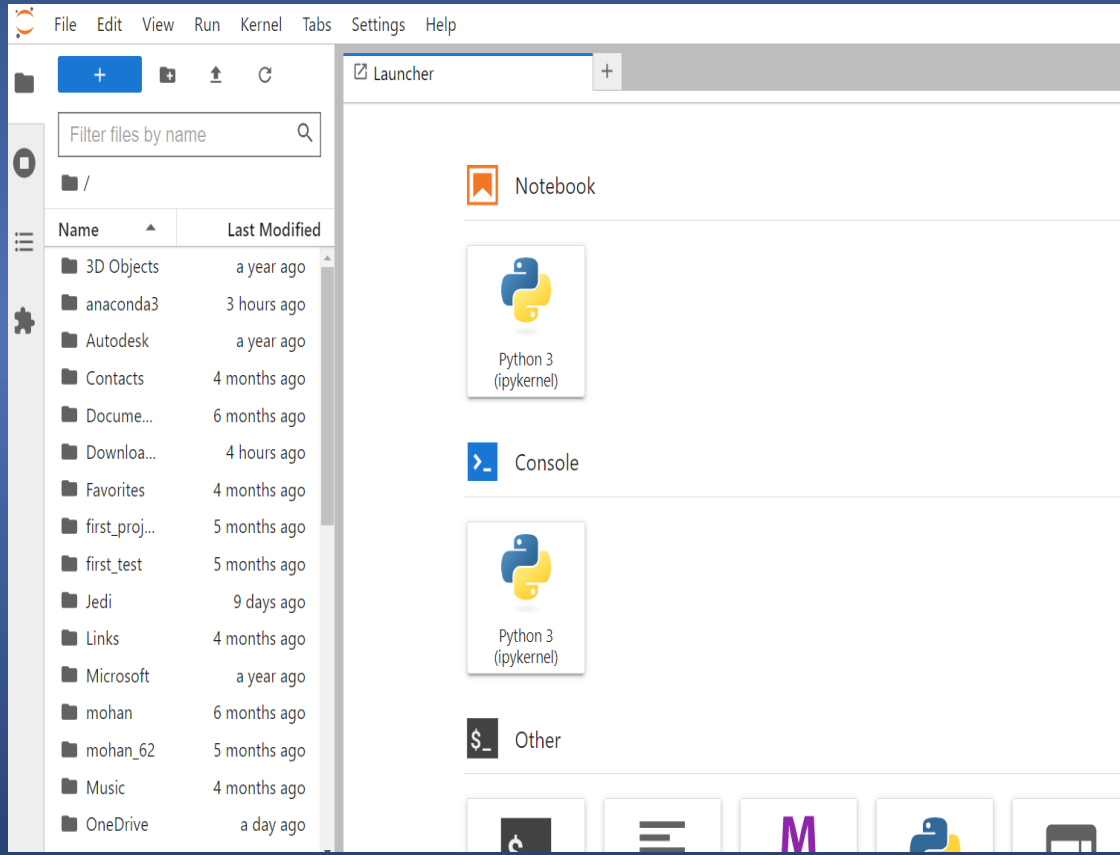
Install- pip install jupyterlab

Open- jupyter lab



Working directory(Location) of Jupyter

- When you open Jupyter from PowerShell, the default location of the notebook will be the user's folder in the C drive.
- By default, you can only access files in this folder. If you want to open a specific folder in Jupyter, you first have to change the working directory to the folder that you want to open, and then open Jupyter.



Working with the Shell Terminal(s)

A “shell” is a program that’s used to interact with the operating system (e.g. Windows, MacOS, Linux, etc). Just like there are many programming languages, there are many different shell languages. For example

- Cmd: This is the shell language used in Microsoft's earlier operating systems such as MS-DOS and the Windows Command Prompt
- Powershell: This is a more powerful shell language than Cmd and is the default shell in modern versions of Windows. It is object-oriented and has a rich set of commands and scripting features that make it popular among system administrators and developers.
- Bash: This is the default shell language in many Unix-based operating systems, including Linux and macOS. It is a powerful and flexible shell language that supports scripting and automation, and it comes with a wide range of built-in commands and utilities

Filesystem Commands Reference

	Description	Bash	Cmd	PowerShell
0	List files and folders	ls	dir	Get-ChildItem
1	Change directory	cd	cd	Set-childItem
2	Show Working directory	pwd	cd	Get-Location
3	Clear the Screen	clear	cls	cls, clear
4	Copy a file	cp	copy	Copy-Item
5	Remove or delete a file	rm	del	Remove-Item
6	Print a string	echo	echo	Write-Host
7	Display file contents	cat	type	Get-Content
8	Create a new text file	touch "filename"	type nul > <your_file.txt>	New-Item <filename.txt>
9	Make a new folder	mkdir	mkdir	New-Item <foldname> -ItemType "directory"
10	See folder structure	tree	tree	tree

Exercise

a. Show the current working directory
b. List all the files/folders in the current working directory
c. Change the working directory to D drive
d. Open jupyter notebook at D drive

Get Materials from git

Download Materials folder once:

- Change directory where you want to keep the folder from cmd
- Type “git clone https://github.com/pudasainimohan/Materials.git’

Get updated materials :

- Open cmd in inside the materials folder
- Type “git clone”