

# Jupyter Notebook tutorial

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**Great Learning**

# Session Takeaways

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## Jupyter Notebook tutorial

- **What** is a Jupyter Notebook?
- **Key features** of Jupyter Notebooks
- **Who** uses Jupyter Notebooks?
- How to **install** Jupyter Notebook?
- **Hands-on:** Jupyter Notebook with Python
- **Benefits** of using Jupyter Notebooks



# What is a Jupyter Notebook?

# What is a notebook?

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A single document that consists of a variety of information

- A notebook is used to integrate code, data, visualizations and other mathematical equations into a single document.
- A single document that will help you to not only run the code but also display the output along with explanation and more.



# What is a Jupyter notebook?

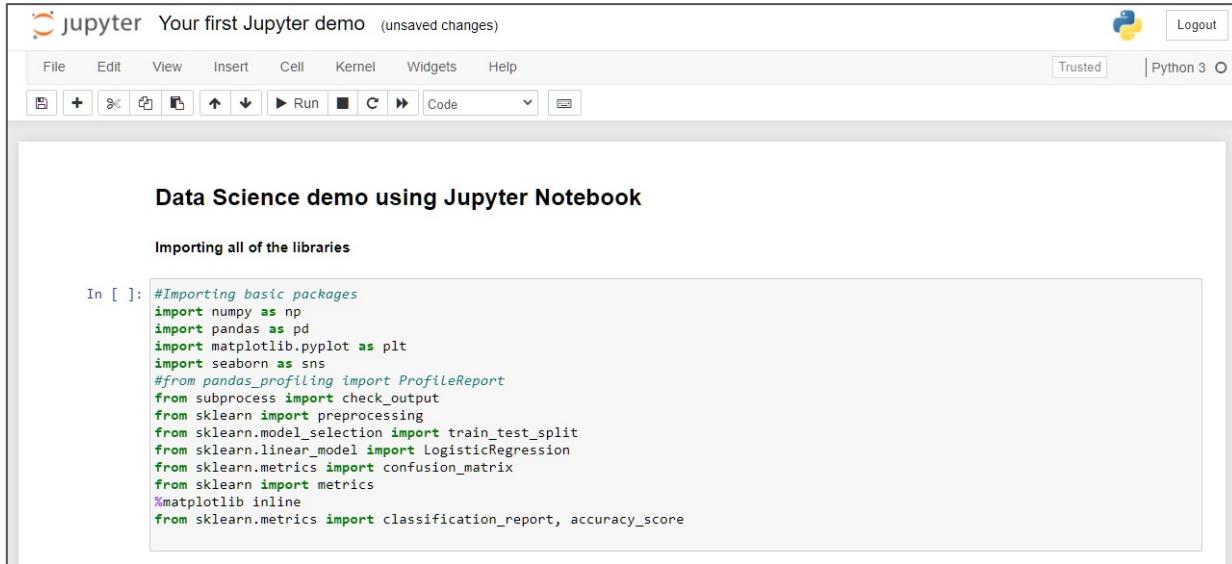
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Extremely popular open-source GUI for coders

- Jupyter is an **interactive** web-based computational notebook.
- Developed in the year **2014** as a part of Project Jupyter
- **Extremely popular** for quick prototyping and exploratory analysis



# What does the User Interface (UI) look like?



Looks **fantastic**, doesn't it?

# Jupyter Notebook and research

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Here is an important thing to note:



Jupyter is so **popular** that it is considered as the default environment for research!

# Jupyter Notebook for Data Science

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The most handy tool for programmers in Data Science!



Notebooks are an **important part** of Data Science

# Is Jupyter Notebook a paid tool ?

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Project Jupyter is completely open source!



Jupyter Notebooks are completely free!

# Key features of Jupyter Notebooks

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Support for multiple languages



Jupyter supports over 40 programming languages!

# Key features of Jupyter Notebooks

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Interactive user interface



Jupyter helps you **understand** the output better!

# Key features of Jupyter Notebooks

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Ability to share notebooks



Notebooks can be shared via the cloud, email or even GitHub!

# Key features of Jupyter Notebooks

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## Big data integration



Ability to leverage big data tools like Spark from Python, R and Scala

# Who uses Jupyter Notebooks?

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Jupyter Notebooks are used by millions of people!

- There are over **700 programming languages** in the world today.
- Some of these programming languages have multiple IDEs.
- **Example:** Python can be coded on PyCharm, Google Colab etc.



# Who uses Jupyter Notebooks?

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- 200,000 notebooks in 2015
- Over 3 million notebooks in 2018!

# How to install Jupyter Notebook?

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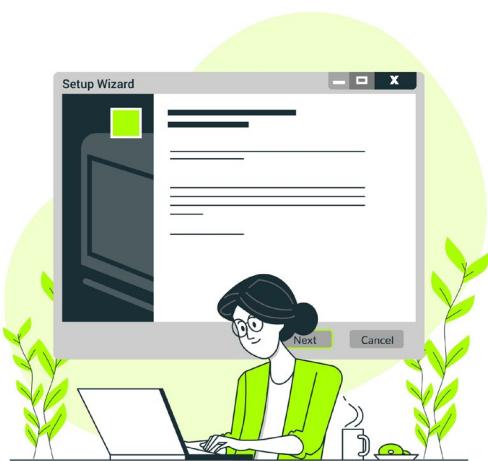
Here is an important prerequisite:



While Jupyter supports multiple programming languages, it is important to know that **Python is a compulsory requirement!**

# How to install Jupyter Notebook?

There are many way to install:



- Installation using **pip**
- Installation using **Anaconda**

# How to install Jupyter Notebook?

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## Installation using pip:

- Python's package manager is called **pip**.
- **Here are the commands needed to install:**
  - `pip3 install --upgrade pip` ➡ Used to update pip first
  - `pip3 install jupyter` ➡ Used to install Jupyter notebook

# How to install Jupyter Notebook?

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## Installation using Anaconda:

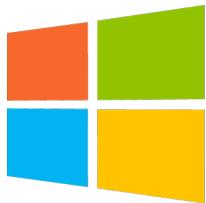
1. Download latest version of **Anaconda Individual Edition** (500Mb)
2. An easy to follow step-by-step guided **installation**
3. **Verify** the installation and open the notebook from the start menu!



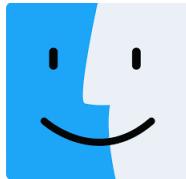
# How to install Jupyter Notebook?

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Anaconda supports a wide variety of operating systems:



Windows



MacOS

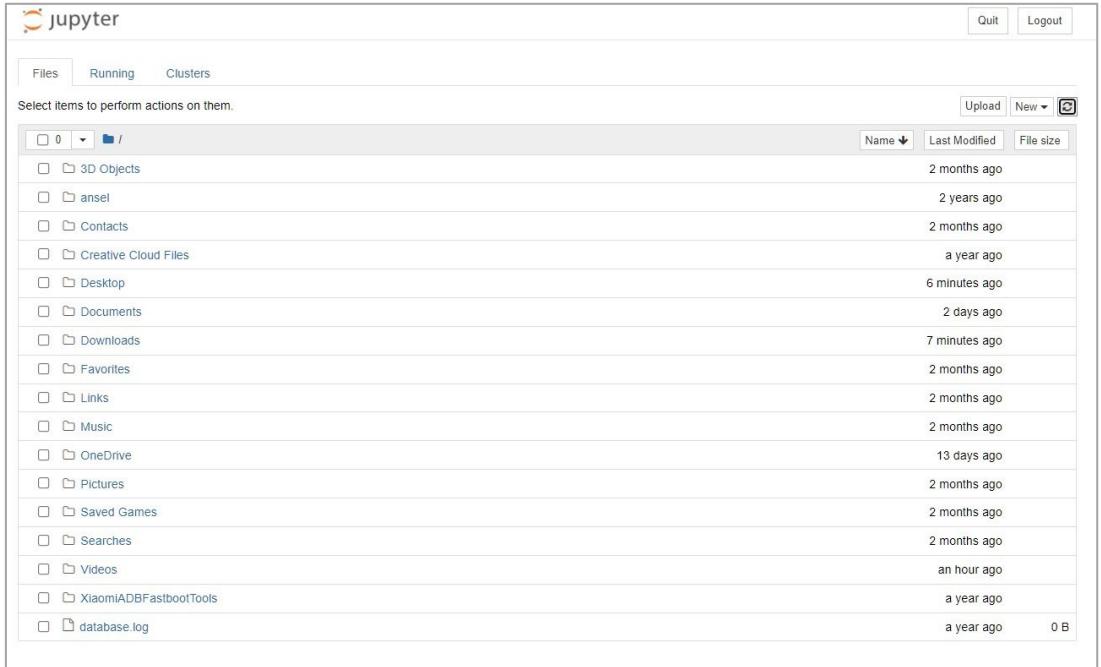


Linux



Individual Edition

# Welcome to Jupyter!



The screenshot shows the Jupyter Notebook dashboard. At the top, there are tabs for "Files", "Running", and "Clusters". On the right, there are buttons for "Quit" and "Logout". Below the tabs, there's a message: "Select items to perform actions on them." A sidebar on the left lists various locations with checkboxes: "0" (selected), "3D Objects", "ansel", "Contacts", "Creative Cloud Files", "Desktop", "Documents", "Downloads", "Favorites", "Links", "Music", "OneDrive", "Pictures", "Saved Games", "Searches", "Videos", "XiaomiADBFastbootTools", and "database.log". To the right of the sidebar is a table with columns: "Name", "Last Modified", and "File size". The table lists files with their last modified dates and sizes:

Name	Last Modified	File size
2 months ago		
2 years ago		
2 months ago		
a year ago		
6 minutes ago		
2 days ago		
7 minutes ago		
2 months ago		
2 months ago		
2 months ago		
13 days ago		
2 months ago		
2 months ago		
an hour ago		
a year ago		
a year ago	0 B	

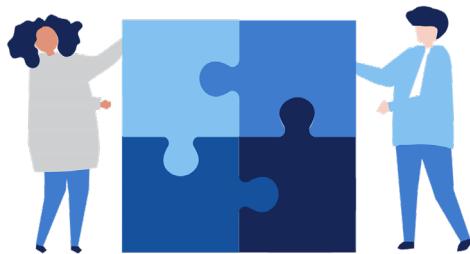
This is the Jupyter Dashboard!

# Hands-on: Jupyter Notebook with Python

# Benefits of using Jupyter Notebooks

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Modular division of code helps immensely

# Benefits of using Jupyter Notebooks

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Platform-independency and language-independency

# Benefits of using Jupyter Notebooks

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Code + explanation made easy!

# Summary