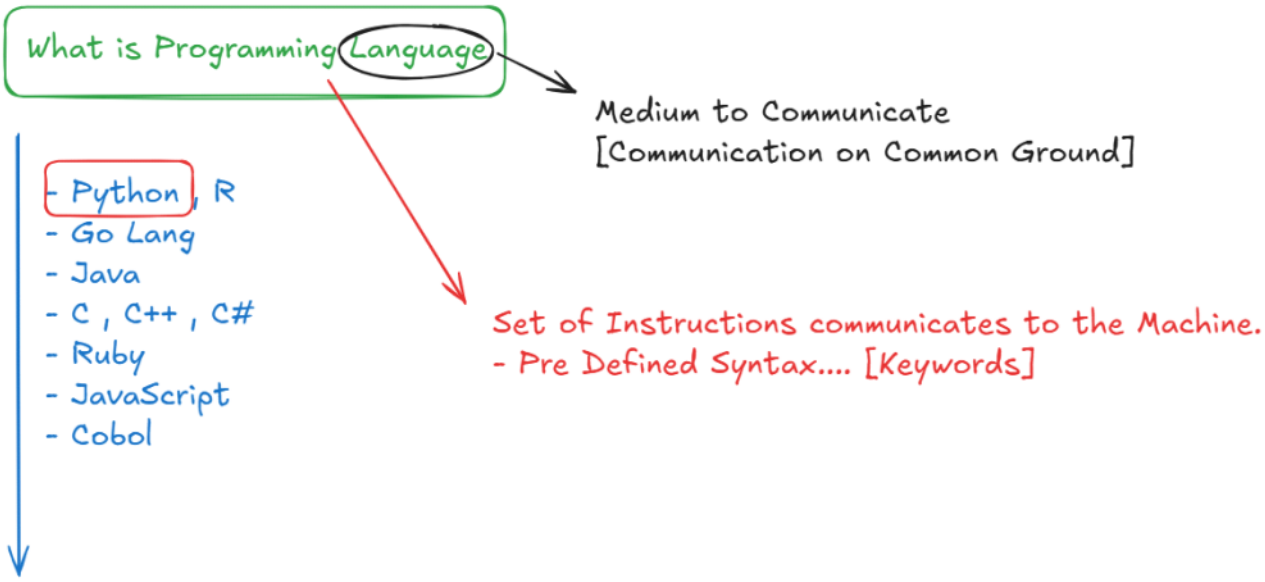
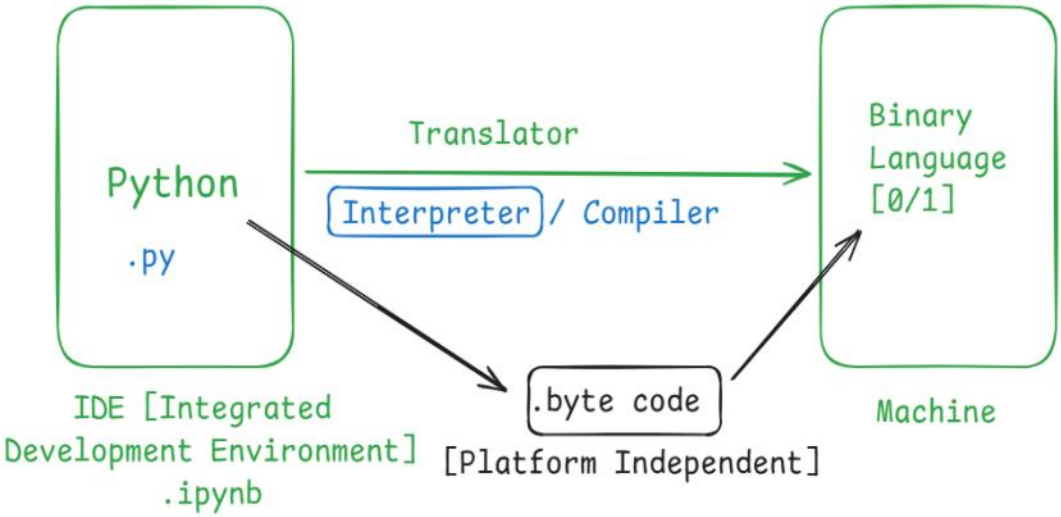
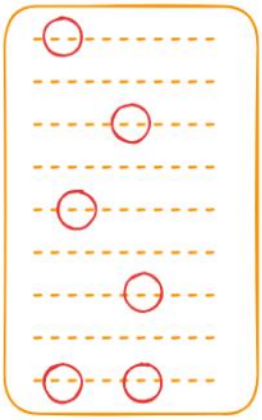
Introduction to Python

🎓 Session Objectives:

- 🔍 Understand what Python is
- 🎮 Explore what Python can do
- ✨ Discover Python's features
- ⚖️ Compare Python with other programming languages
- 📈 Understand how Python differs from Excel and SQL
- 🖌️ Learn Python's role in Data Analytics
- 💻 Install Python and Anaconda (Jupyter Notebook)
- 📘 Understand the basic syntax of Python.
- 🧠 Learn about variables and their usage.
- ✍️ Declare and assign values to variables.
- 🧩 Differentiate between variables, identifiers, and keywords.
- 🧪 Explore data types, check them, and perform type conversion.



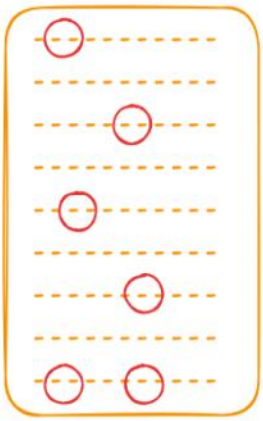




Compiler [Full Scan] -> Compiled Complete Code
[Shows all error after done with compiling]

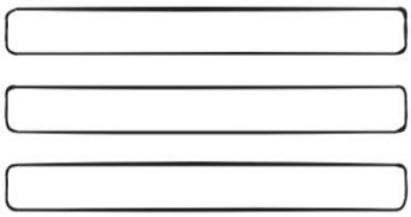
Compiler [Java/C++, JavaScript]

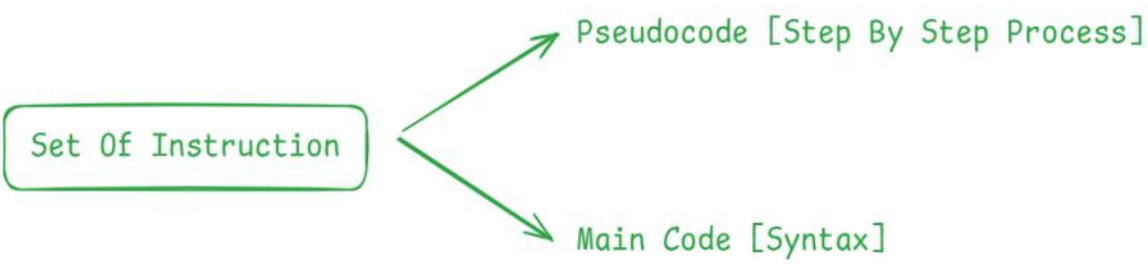
error1 - Line 1 [error Message]
error2 - Line 3 [error Message]
error3 - Line 5 [error Message]
error4 - Line 7 [error Message]
error5 - Line 9 [error Message]
error6 - Line 9 [error Message]



Interpreter [Python]

error-1 - Block 1 [Resolve ✅]
error-2 - Block 2 [Now Resolve this] to move ahead





PseudoCode [Help me to make a Maggie 🍜🍜]

```
Step 1: Take about 1½-2 cups of water in a pan and bring it
        to a boil.
Step 2: Break the Maggi cake into pieces (optional) and add
        it to the boiling water.
Step 3: Add the Maggi tastemaker (masala sachet) to the pan and
        stir well so it dissolves.
Step 4: Cook on medium flame for about 2-3 minutes, stirring
        occasionally, until the noodles turn soft but not mushy.
Step 5: Once the water is mostly absorbed and the noodles look
        saucy, switch off the gas and serve hot.
```

What is Python & its Feature

1. It is a Programming Language used to communicate with machine.

2. It is beginner Friendly. It is Easy To understand , Best for All Data Related fields.

3. It's an open source. Free For All, And Base Code is Publicly
   Available as a Documentation [https://www.python.org/doc/].

4. It is Platform Independent [.byte code is generated] which can be used in any OS.

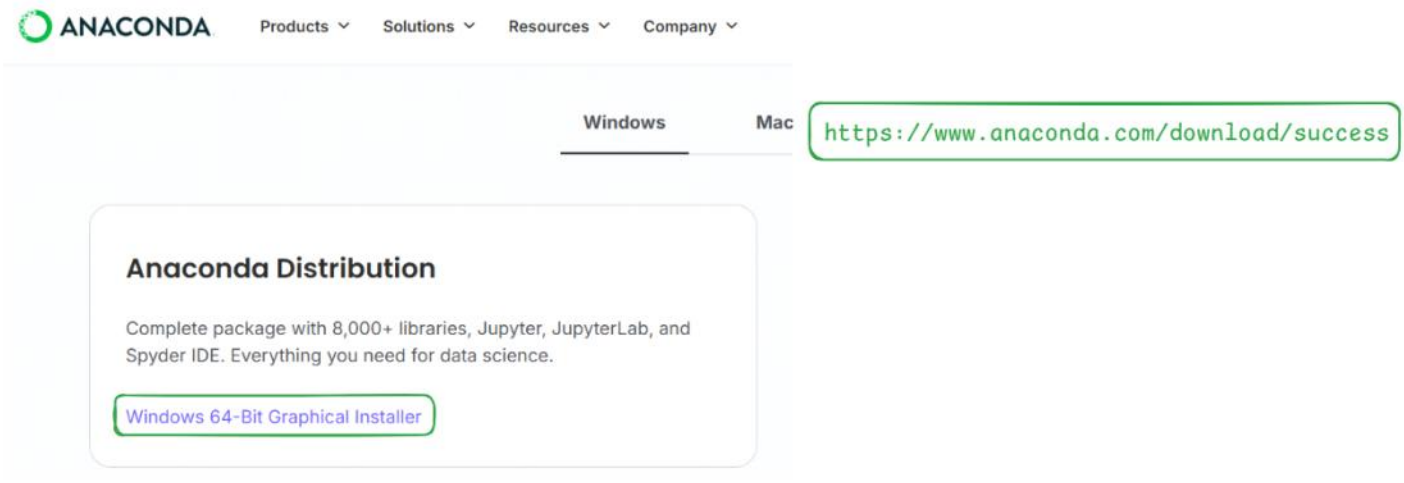
5. A Case Sensitive Language.

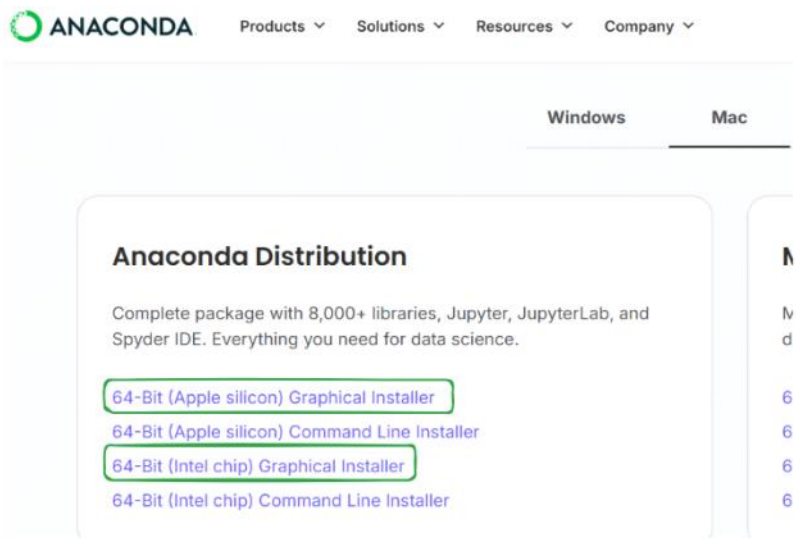
6. An Interpreted Language where each block of code is run and executed.

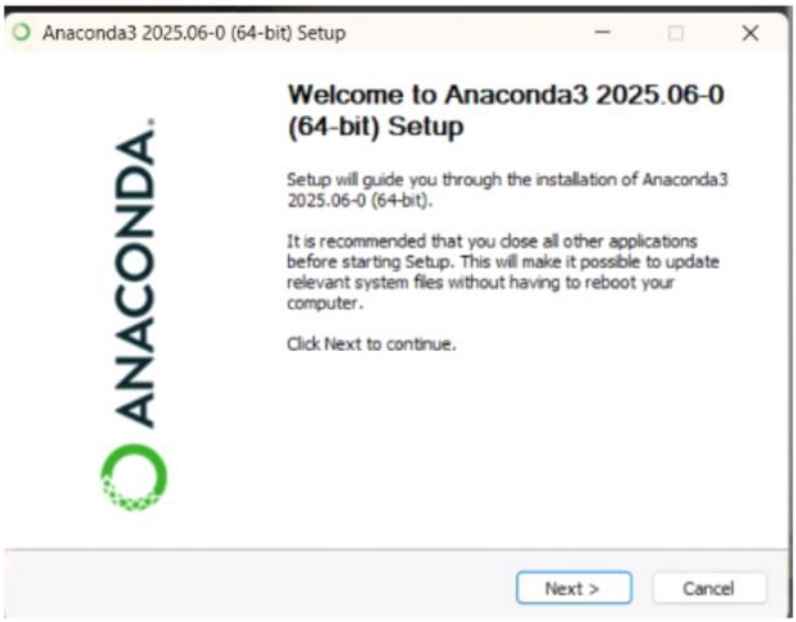
7. Rich in Libraries [Numpy, Pandas, MatplotLib, Seaborn, SQLAlchemy]

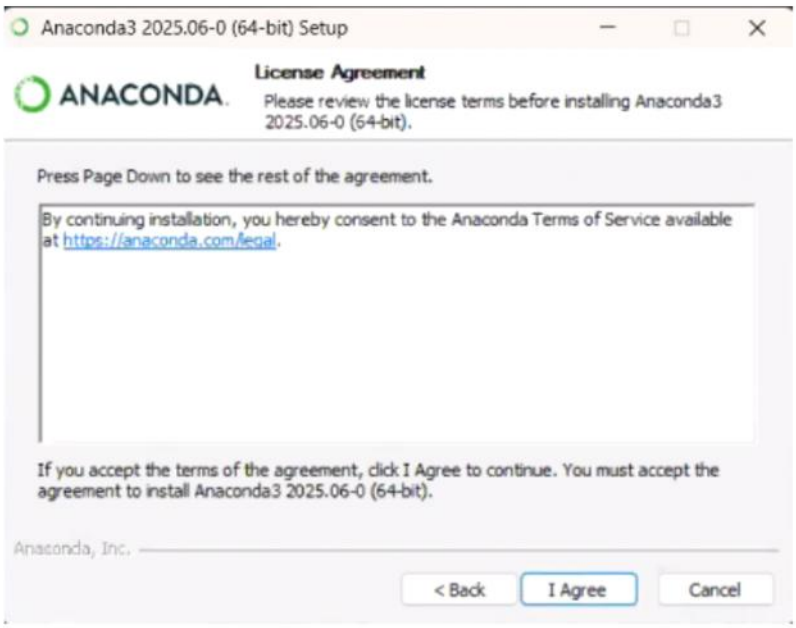
8. It is an Object Oriented Programming Language [Classes/Object].

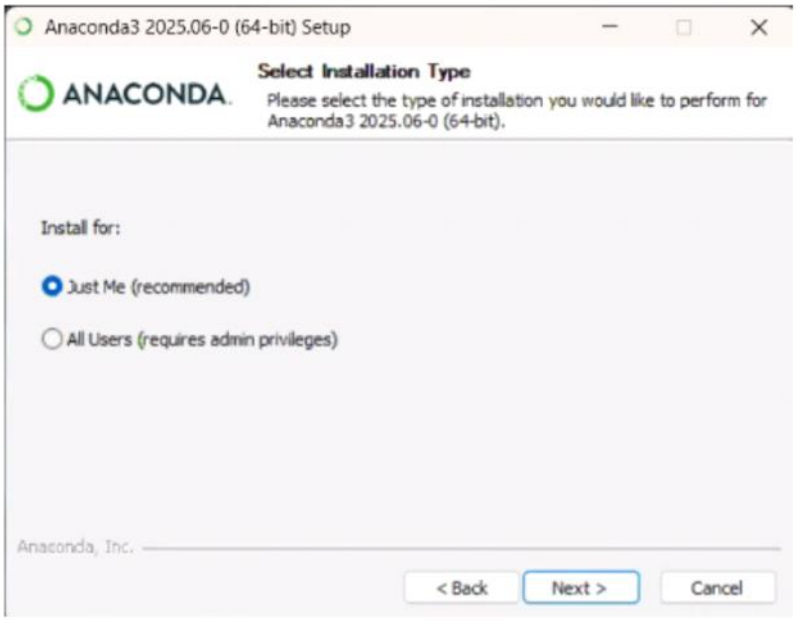
9. Strong Community Support

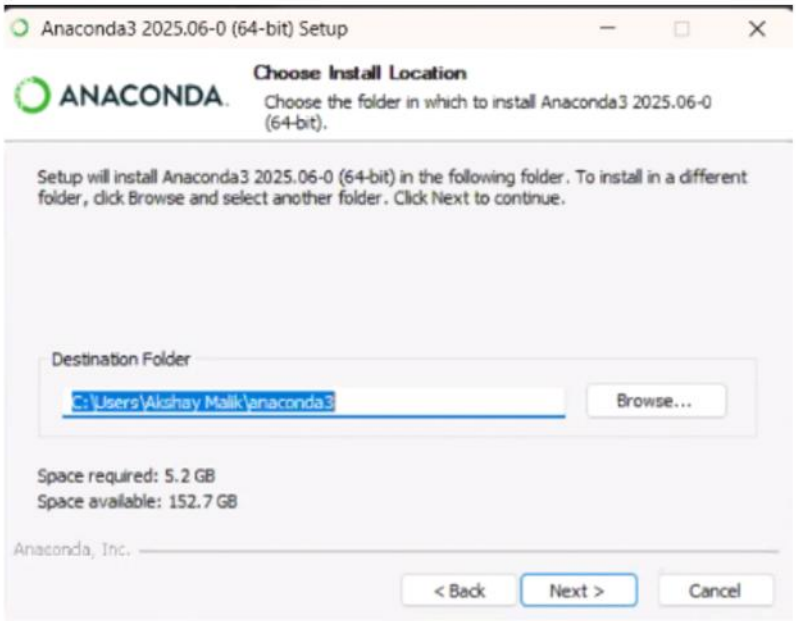


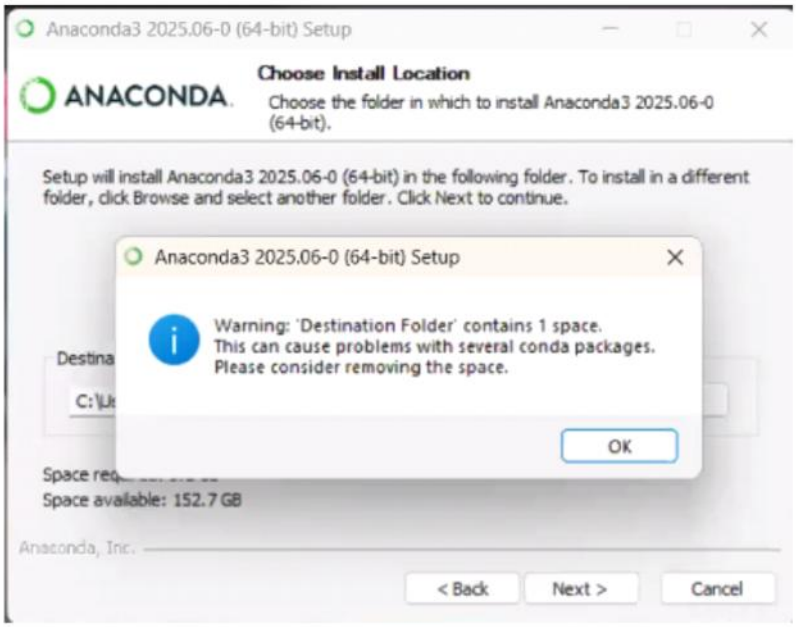

ANACONDA
Products
Solutions
Resources
Company
Windows
Mac
Anaconda Distribution
Complete package with 8,000+ libraries, Jupyter, JupyterLab, and Spyder IDE. Everything you need for data science.
64-Bit (Apple silicon) Graphical Installer
64-Bit (Apple silicon) Command Line Installer
64-Bit (Intel chip) Graphical Installer
64-Bit (Intel chip) Command Line Installer

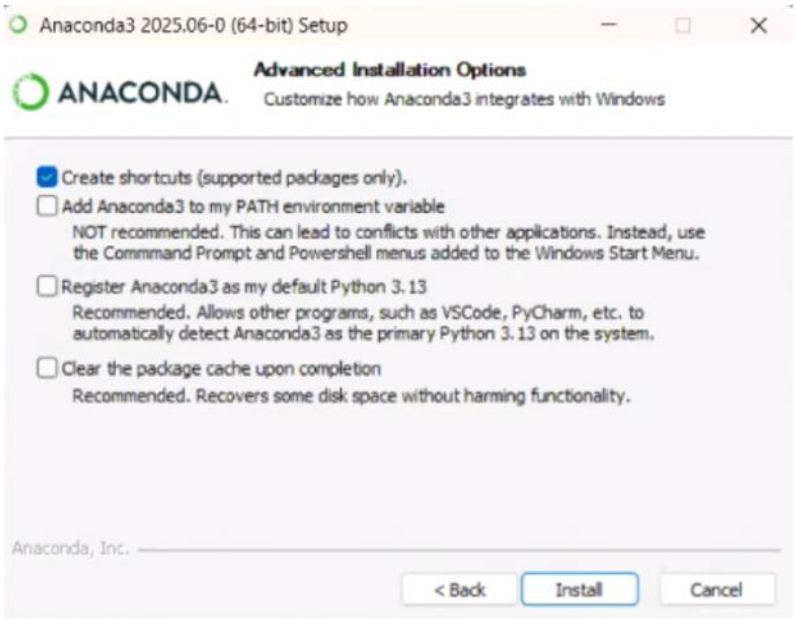

Anaconda3 2025.06-0 (64-bit) Setup
ANACONDA.
Welcome to Anaconda3 2025.06-0 (64-bit) Setup
Setup will guide you through the installation of Anaconda3 2025.06-0 (64-bit).
It is recommended that you close all other applications before starting Setup. This will make it possible to update relevant system files without having to reboot your computer.
Click Next to continue.
Next >
Cancel

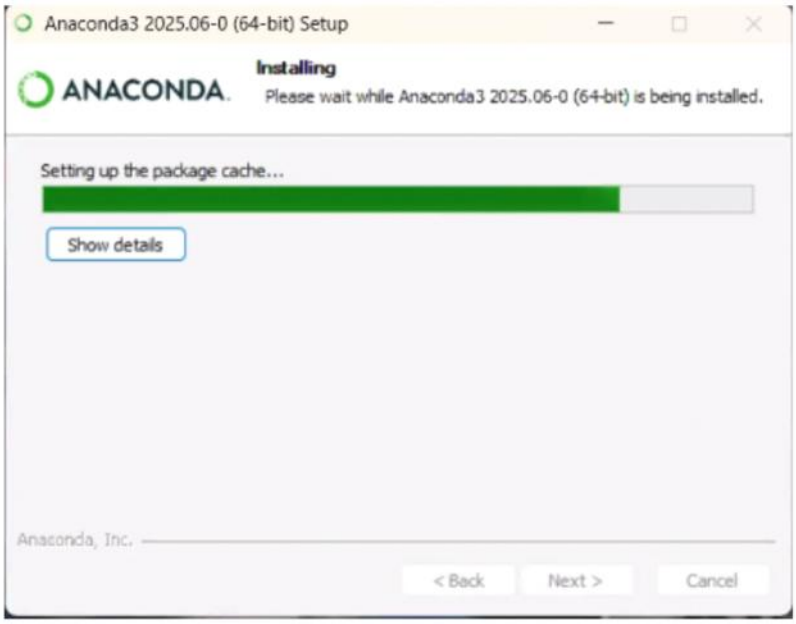

Anaconda3 2025.06-0 (64-bit) Setup
ANACONDA.
License Agreement
Please review the license terms before installing Anaconda3 2025.06-0 (64-bit).
Press Page Down to see the rest of the agreement.
By continuing installation, you hereby consent to the Anaconda Terms of Service available at https://anaconda.com/legal.
If you accept the terms of the agreement, click I Agree to continue. You must accept the agreement to install Anaconda3 2025.06-0 (64-bit).
Anaconda, Inc.
< Back
I Agree
Cancel

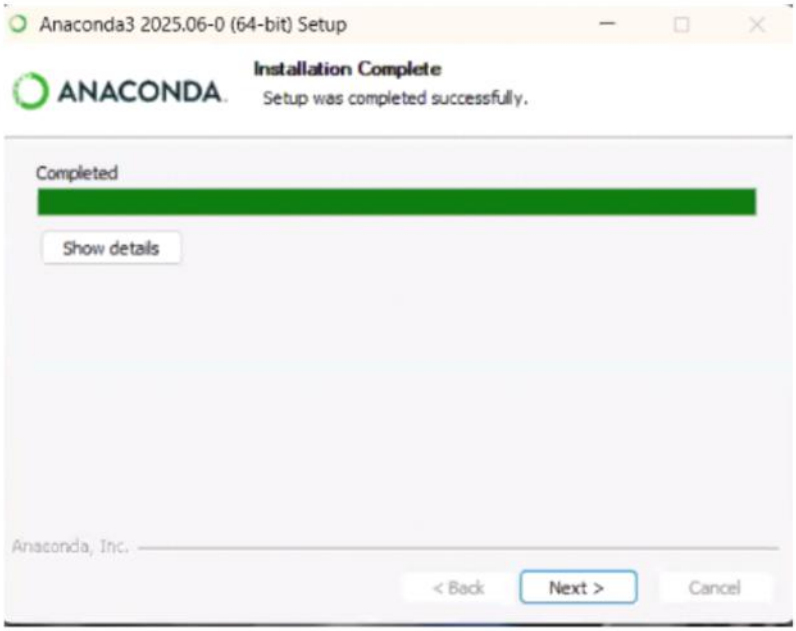

Anaconda3 2025.06-0 (64-bit) Setup
ANACONDA.
Select Installation Type
Please select the type of installation you would like to perform for Anaconda3 2025.06-0 (64-bit).
Install for:
Just Me (recommended)
All Users (requires admin privileges)
Anaconda, Inc.
< Back
Next >
Cancel


Anaconda3 2025.06-0 (64-bit) Setup
ANACONDA.
Choose Install Location
Choose the folder in which to install Anaconda3 2025.06-0 (64-bit).
Setup will install Anaconda3 2025.06-0 (64-bit) in the following folder. To install in a different folder, click Browse and select another folder. Click Next to continue.
Destination Folder
C:\Users\Akshay Malik\anaconda3
Browse...
Space required: 5.2 GB
Space available: 152.7 GB
Anaconda, Inc.
< Back
Next >
Cancel


Anaconda3 2025.06-0 (64-bit) Setup
ANACONDA.
Choose Install Location
Choose the folder in which to install Anaconda3 2025.06-0 (64-bit).
Setup will install Anaconda3 2025.06-0 (64-bit) in the following folder. To install in a different folder, click Browse and select another folder. Click Next to continue.
Anaconda3 2025.06-0 (64-bit) Setup
Warning: 'Destination Folder' contains 1 space.
This can cause problems with several conda packages.
Please consider removing the space.
OK
Space available: 152.7 GB
Anaconda, Inc.
< Back
Next >
Cancel

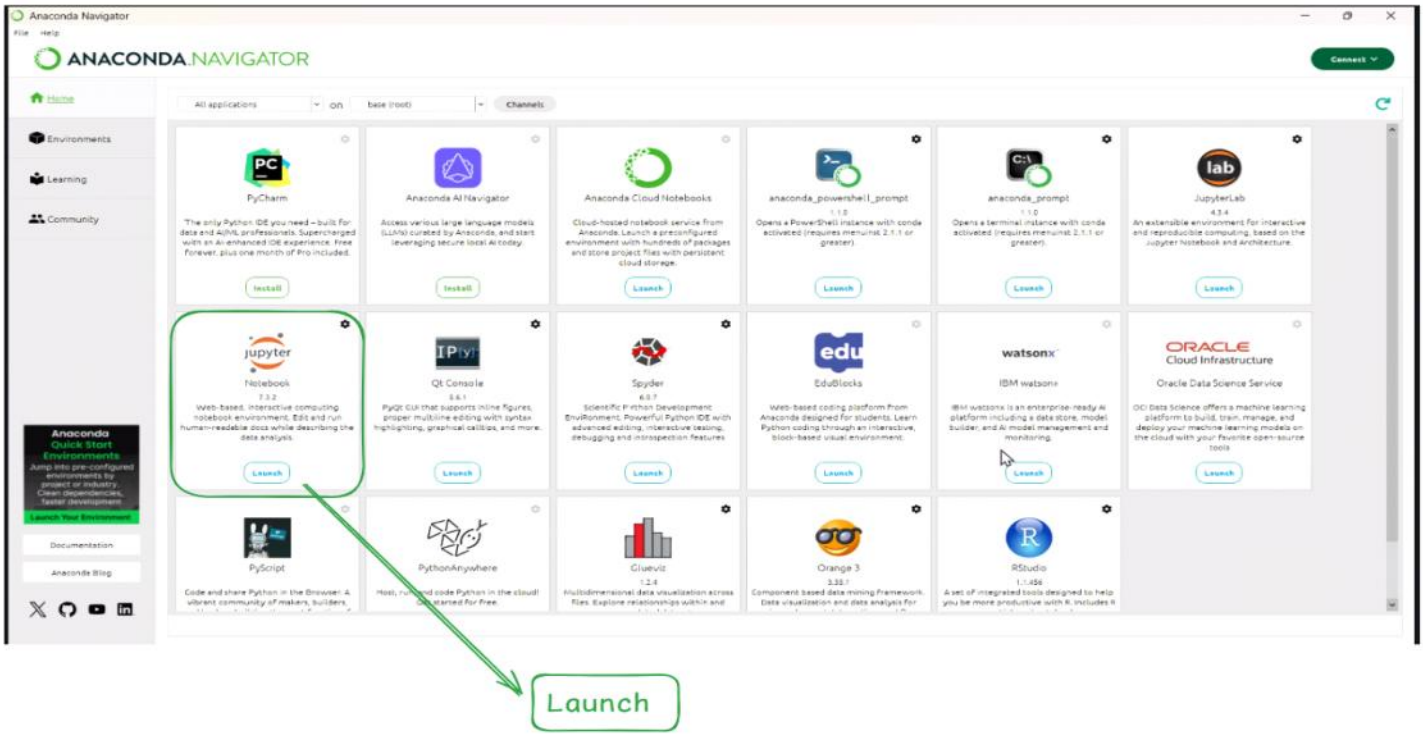

Anaconda3 2025.06-0 (64-bit) Setup
ANACONDA.
Advanced Installation Options
Customize how Anaconda3 integrates with Windows
Create shortcuts (supported packages only).
Add Anaconda3 to my PATH environment variable
NOT recommended. This can lead to conflicts with other applications. Instead, use the Commmand Prompt and Powershell menus added to the Windows Start Menu.
Register Anaconda3 as my default Python 3.13
Recommended. Allows other programs, such as VSCode, PyCharm, etc. to automatically detect Anaconda3 as the primary Python 3.13 on the system.
Clear the package cache upon completion
Recommended. Recovers some disk space without harming functionality.
Anaconda, Inc.
< Back
Install
Cancel

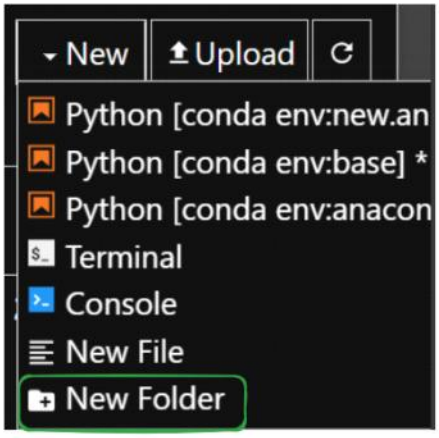

Anaconda3 2025.06-0 (64-bit) Setup
ANACONDA.
Installing
Please wait while Anaconda3 2025.06-0 (64-bit) is being installed.
Setting up the package cache...
Show details
Anaconda, Inc.
< Back
Next >
Cancel

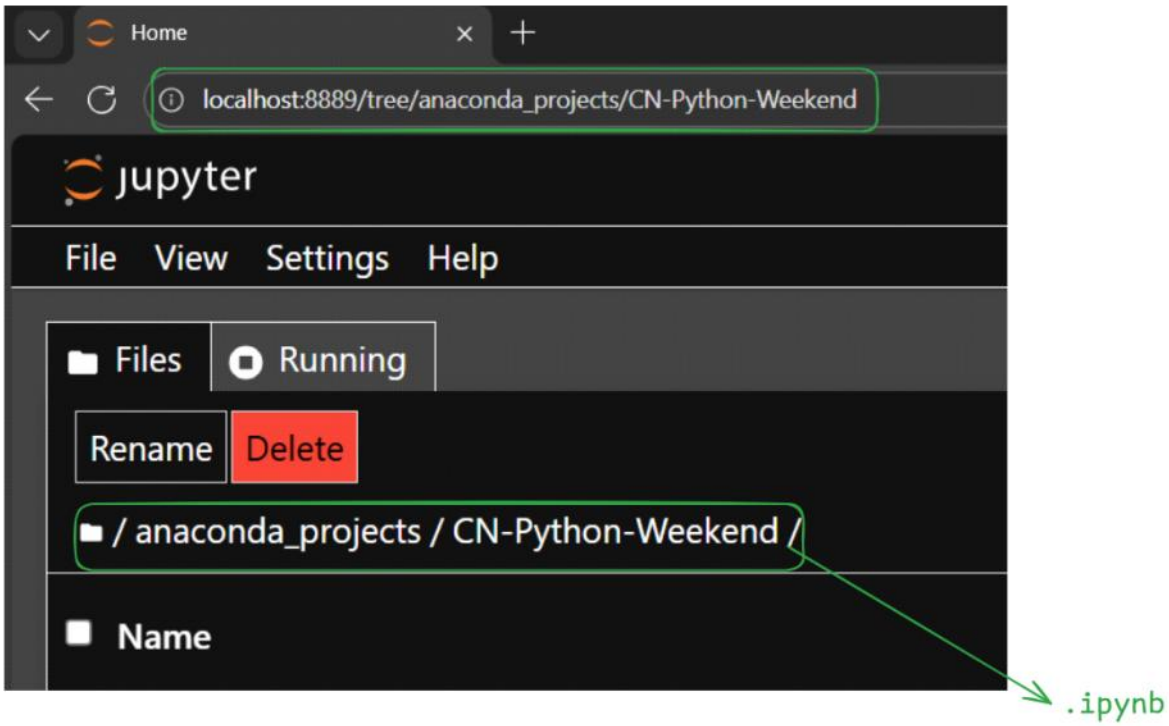

Anaconda3 2025.06-0 (64-bit) Setup
ANACONDA.
Installation Complete
Setup was completed successfully.
Completed
Show details
Anaconda, Inc.
< Back
Next >
Cancel

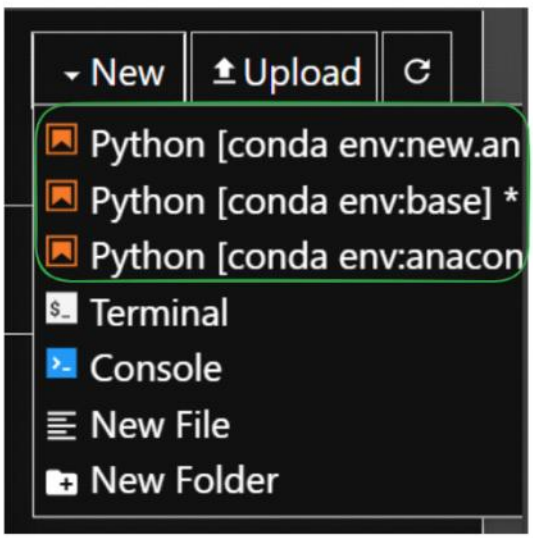

Anaconda3 2025.06-0 (64-bit) Setup
ANACONDA.
Anaconda3 2025.06-0 (64-bit)
Code with Anaconda in the Cloud
Everything you love about Anaconda now available from the cloud with Anaconda's fully-loaded Jupyter notebook.
No setup required. Get started for free.
Code in the cloud with Anaconda Notebooks
ANACONDA.
jupyter
Anaconda, Inc.
< Back
Next >
Cancel

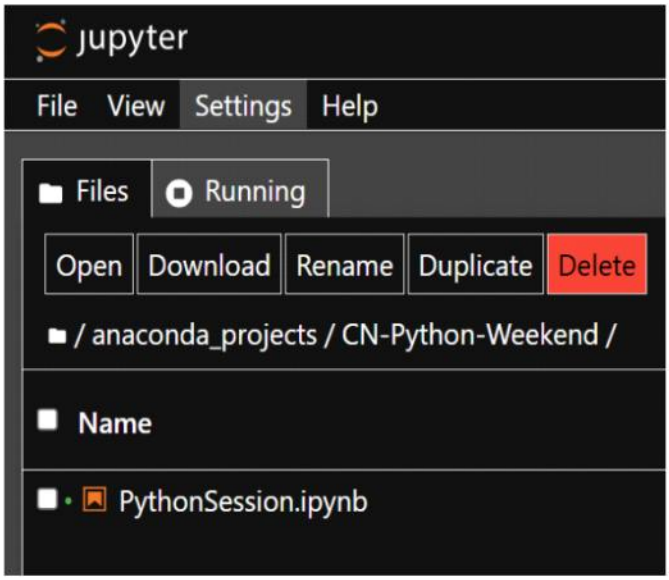

Anaconda3 2025.06-0 (64-bit) Setup
ANACONDA.
Completing Anaconda3 2025.06-0 (64-bit) Setup
Thank you for installing Anaconda Distribution.
Here are some helpful resources to get you started. We recommend you bookmark the 'Getting Started with Anaconda Distribution' link so you can refer back to it later.
Launch Anaconda Navigator
Welcome to Anaconda
< Back
Finish
Cancel

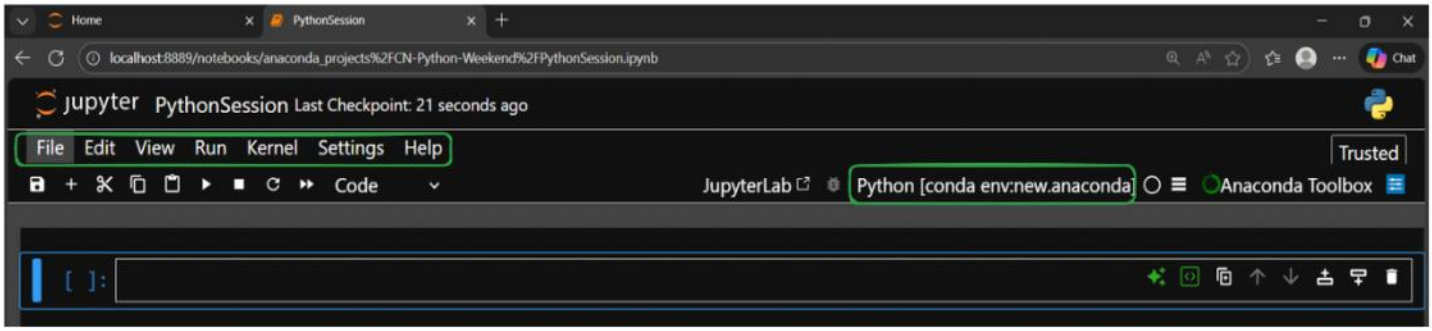

Anaconda Navigator
ANACONDA.NAVIGATOR
Connect
Home
Environments
Learning
Community
PyCharm
Anaconda AI Navigator
Anaconda Cloud Notebooks
anaconda_powershell_prompt
anaconda_prompt
JupyterLab
Notebook
Qt Console
Spyder
EduBlocks
IBM watsonx
Oracle Data Science Service
PyScript
PythonAnywhere
Glueviz
Orange 3
RStudio
Launch

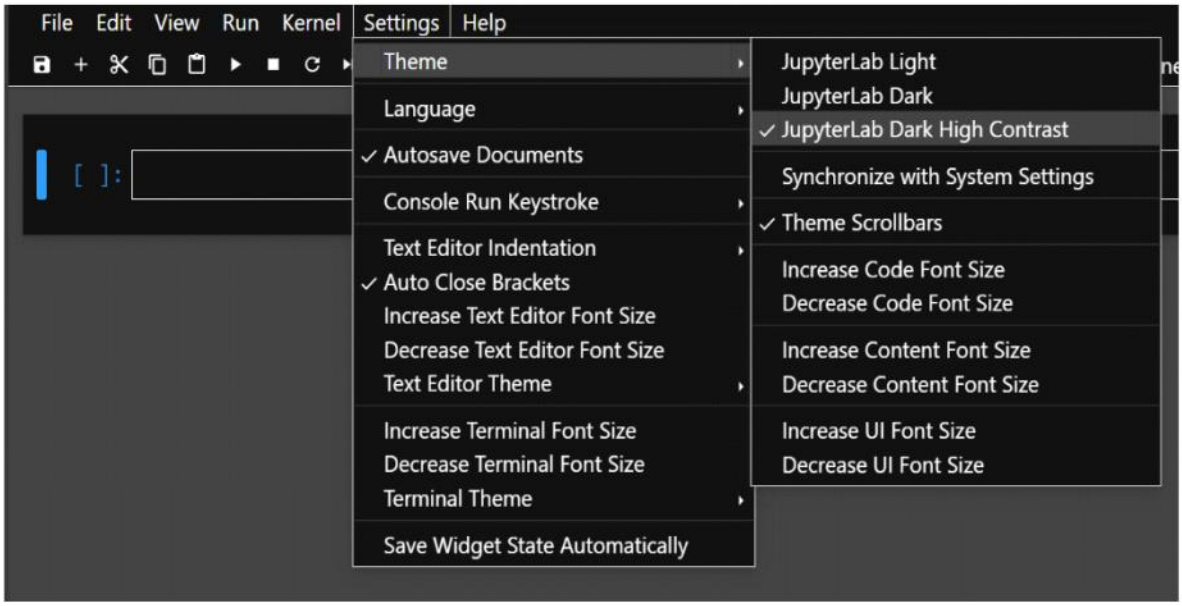

New
Upload
Python [conda env:new.an
Python [conda env:base] *
Python [conda env:anacon
Terminal
Console
New File
New Folder


Home
localhost:8889/tree/anaconda_projects/CN-Python-Weekend
jupyter
File View Settings Help
Files
Running
Rename
Delete
/ anaconda_projects / CN-Python-Weekend /
Name
.ipynb


New
Upload
Python [conda env:new.an
Python [conda env:base] *
Python [conda env:anacon
Terminal
Console
New File
New Folder


jupyter
File View Settings Help
Files Running
Open Download Rename Duplicate Delete
/ anaconda_projects / CN-Python-Weekend /
Name
PythonSession.ipynb


Home
PythonSession
localhost:8889/notebooks/anaconda_projects%2FCN-Python-Weekend%2FPythonSession.ipynb
jupyter PythonSession Last Checkpoint: 21 seconds ago
File Edit View Run Kernel Settings Help
Trusted
Code
JupyterLab
Python [conda env:new.anaconda]
Anaconda Toolbox
[ ]:


File Edit View Run Kernel Settings Help
[ ]:
Theme
Language
Autosave Documents
Console Run Keystroke
Text Editor Indentation
Auto Close Brackets
Increase Text Editor Font Size
Decrease Text Editor Font Size
Text Editor Theme
Increase Terminal Font Size
Decrease Terminal Font Size
Terminal Theme
Save Widget State Automatically
JupyterLab Light
JupyterLab Dark
JupyterLab Dark High Contrast
Synchronize with System Settings
Theme Scrollbars
Increase Code Font Size
Decrease Code Font Size
Increase Content Font Size
Decrease Content Font Size
Increase UI Font Size
Decrease UI Font Size


Basic Link Syntax
Inline Links
Create a link using [link text](URL) format:

```
print("Hello World")
```

```
Hello World
```

```
print("Hi")
print("Everyone!")
```

```
Hi
Everyone!
```

What is Python?

1. It is a Programming Language used to communicate with machine.
2. It is beginner Friendly. It is Easy To understand , Best for All Data Related fields.
3. It's an open source. Free For All, And Base Code is Publicly Available as a Documentation Python.org.
4. It is Platform Independent (.byte code is generated) which can be used in any OS.
5. A Case Sensitive Language.
6. An Interpreted Language where each block of code is run and executed.
7. Rich in Libraries (Numpy, Pandas, MatplotLib, Seaborn, SQLAlchemy)
8. It is an Object Oriented Programming Language (Classes/Object).
9. Strong Community Support

```
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9. Strong Community Support
```

```
Use Default Value of Pi : 3.14
Note : Read the Instruction Carefully
# Java:
int num1 = 10;
String name = 'Krishna Madan';
```

```
x = 10
print(x)
```

```
10
```

```
Note : Variable is a container that contains data in it....
```

```
x = 11
print(x)
print(type(x)) # 'int'
```

```
11
<class 'int'>
```

```
x = 'Shyam Sundar Rao Majji'
print(x)
print(type(x)) # 'str'
```

```
Shyam Sundar Rao Majji
<class 'str'>
```

```
x = 'K' # 'char'
print(x)
print(type(x)) # 'str'
```

```
K
<class 'str'>
```

```
x = 99.99 # 'float'
print(x)
print(type(x))
```

```
99.99
<class 'float'>
```

```
x = True # 'bool'
print(x)
print(type(x))
```

```
True
<class 'bool'>
```

```
'''
    This is a multiline Comment
    You can put your notes here
    # is a single line comment
'''
print('Hey Ninjas')
```

```
Hey Ninjas
```

```
x = 11 + 9j # 'complex'
print(x)
print(type(x))
```

```
(11+9j)
<class 'complex'>
```

```
# Print <Object> Argument ['end' , 'sep']
# end -> '\n' [Next Line]
print("Coding")
print('Ninjas')
```

```
Coding
Ninjas
```

```
# end -> " "
print("Coding" , end = " ")
print("Ninjas") # Coding Ninjas
```

```
Coding Ninjas
```

```
# end -> "\t" [Tab Space]
print("Coding" , end = "\t")
print("Ninjas") # Coding    Ninjas
```

```
Coding  Ninjas
```

```
print("Coding", "Ninjas")
```

```
Coding Ninjas
```

```python
print("Coding", "-" ,"Ninjas")
```

```
Coding - Ninjas
```

```python
# end = '\n'
print("Hello" , end = '\n')
print("World")
```

```
Hello
World
```

```python
# end 'Challenge'
print('Hi' , end = ' ')
print("EveryOne")
print("Welcome", end = '\t')
print("Back to the Another Episode....")
print("Today we have Teacher OP 🔥")
```

```
Hi EveryOne
Welcome Back to the Another Episode....
Today we have Teacher OP 🔥
```

```python
# Seperator 'sep' [Concat_ws]
print('Jan','Feb','Mar','Apr','May','Jun','Jul','Aug','Sept','Oct','Nov','Dec')
```

```
Jan Feb Mar Apr May Jun Jul Aug Sept Oct Nov Dec
```

```python
print('Jan','Feb','Mar','Apr','May','Jun','Jul','Aug','Sept','Oct','Nov','Dec' , sep = ' | ')
```

```
Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sept | Oct | Nov | Dec
```