



PYTHON FOUNDATIONS: FROM BASICS TO PRACTICE

SESSION 5:
USEFUL PYTHON
TOOLS YOU'LL
LIKE

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INTRODUCTION

In this final session, we'll explore some essential Python tools and resources that will enhance your programming journey.

While we won't delve into extensive details, we'll highlight the key aspects of these tools to get you started on the right track.



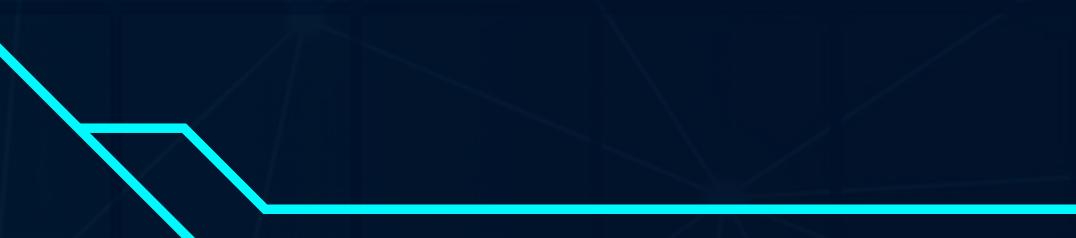
LIBRARIES



Libraries in Python are pre-written collections of code that provide specific functionalities or tools for various tasks. They promote code reuse, modularity, and efficiency by allowing developers to incorporate existing code into their projects.

These libraries can be easily installed using tools like pip, and their extensive documentation ensures users can effectively leverage their features.

Python's library system is a key strength, enabling developers to build complex applications efficiently while benefiting from a vibrant open-source community and a wealth of available resources.



LIBRARIES INSTALLING

To install Python libraries using pip, open your command prompt (Windows) or terminal (Linux/macOS) and use the following command:

```
pip install library_name
```



03 NUMPY

NumPy (Numerical Python) is an open source Python library that's used in almost every field of science and engineering.

NumPy can be used to perform a wide variety of mathematical operations on arrays. It adds powerful data structures to Python that guarantee efficient calculations with arrays and matrices.

Python lists are slow to process. NumPy ndarray is up to 50x faster than traditional Python lists.



PANDAS

Pandas is an essential library in Python for data manipulation and analysis. It provides powerful data structures, such as DataFrame and Series, for handling and working with structured data. Pandas is widely used in data science, machine learning, and data analysis tasks. It simplifies tasks like reading and writing data from different file formats, data cleaning, aggregation, filtering, and visualization.

With Pandas, you can efficiently explore and process large datasets, making it a fundamental tool for anyone working with data in Python.



05 MATPLOTLIB

Matplotlib is a comprehensive library for creating static, animated, and interactive visualizations in Python.

Matplotlib is a library for making plots of arrays in Python. Although Matplotlib is written primarily in pure Python, it makes heavy use of NumPy and other extension code to provide good performance.

Matplotlib is designed with the philosophy that you should be able to create simple plots with just a few commands.



POPULAR PYTHON LIBRARIES

- Artificial intelligence: TensorFlow/ scikit-learn/ Keras.
- Data science: NumPy/ Pandas/ SciPy
- Web development: Django/ Flask.
- Computer graphics: Pygame/ Turtle/ Tkinter.
- Web scraping: BeautifulSoup/ Scrapy/ Requests.
- Computer vision: OpenCV/ PyTorch



GREAT TOOLS



GITHUB



VS CODE EXTENSIONS



STACK
OVERFLOW



GITHUB COPILOT



CHATGPT

VS CODE PYTHON EXTENSIONS

The image displays three cards representing Python extensions available in the VS Code Marketplace. Each card features the Python logo on the left and includes the extension name, version, developer information, download count, rating, a brief description, and standard marketplace controls (Disable, Uninstall, Switch to Pre-Release Version, refresh, and settings).

Python v2023.14.0
Microsoft [microsoft.com](#) | 95,491,710 | ★★★★☆ (553)
IntelliSense (Pylance), Linting, Debugging (multi-threaded, remote), code formatting, refactoring, unit t...
Disable Uninstall Switch to Pre-Release Version

This extension is enabled globally.

Pylance v2023.8.50
Microsoft [microsoft.com](#) | 67,825,972 | ★★★★☆ (188)
A performant, feature-rich language server for Python in VS Code
Disable Uninstall Switch to Pre-Release Version

This extension is enabled globally.

isort v2023.10.1 Preview
Microsoft [microsoft.com](#) | 20,243,104 | ★★★☆☆ (24)
Import Organization support for Python files using `isort`.
Disable Uninstall Switch to Pre-Release Version

This extension is enabled globally.

VS CODE JUPITER EXTENSIONS



Jupyter v2023.7.1002162226

Microsoft [microsoft.com](#) | ⚡ 69,658,213 | ★★★★☆(292)

Jupyter notebook support, interactive programming and computing that supports Intellisense, debuggi...

[Disable](#) [Uninstall](#) | [Switch to Pre-Release Version](#)  



Jupyter Cell Tags v0.1.8 

Microsoft [microsoft.com](#) | ⚡ 31,029,479 | ★★★★★(1)

Jupyter Cell Tags support for VS Code

[Disable](#) [Uninstall](#) |  

This extension is enabled globally.



Jupyter Slide Show v0.1.5 

Microsoft [microsoft.com](#) | ⚡ 30,984,685 | ★★★★★(1)

Jupyter Slide Show support for VS Code

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This extension is enabled globally.



Jupyter Notebook Renderers v1.0.17

Microsoft [microsoft.com](#) | ⚡ 49,912,959 | ★★★★☆(12)

Renderers for Jupyter Notebooks (with plotly, vega, gif, png, svg, jpeg and other)

[Disable](#) [Uninstall](#) |  

This extension is enabled globally.



Jupyter Keymap v1.1.2

Microsoft [microsoft.com](#) | ⚡ 51,228,068 | ★★★★☆(3)

Jupyter keymaps for notebooks

[Disable](#) [Uninstall](#) |  

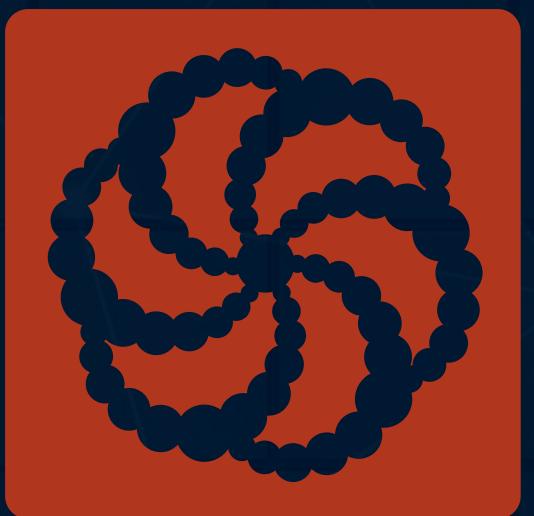
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08

WEBSITES TO PRACTICE



LEETCODE



CODEWARS



HACKERRANK

kaggle

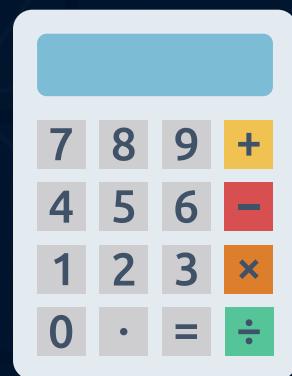
KAGGLE

eG

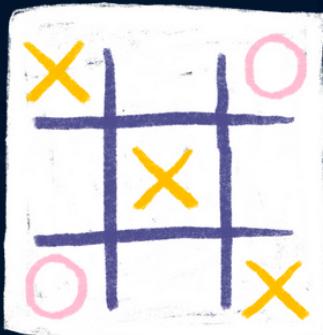
GEEK FOR GEEKS



PROJECT IDEAS FOR BEGINNERS



CALCULATOR



TIC-TAC-TOE

Guess
WHAT

GUESSING
GAME



COUNTDOWN
CLOCK AND TIMER

QUIZ

QUIZ



SCHOOL
MANAGEMENT

HAPPY CODING AHEAD!

Every line of code you write is a step towards mastering Python. Keep practicing, keep exploring, and keep pushing your boundaries.

Thank you for joining us on this journey!

Sarah Haddad
haddads686@gmail.com

