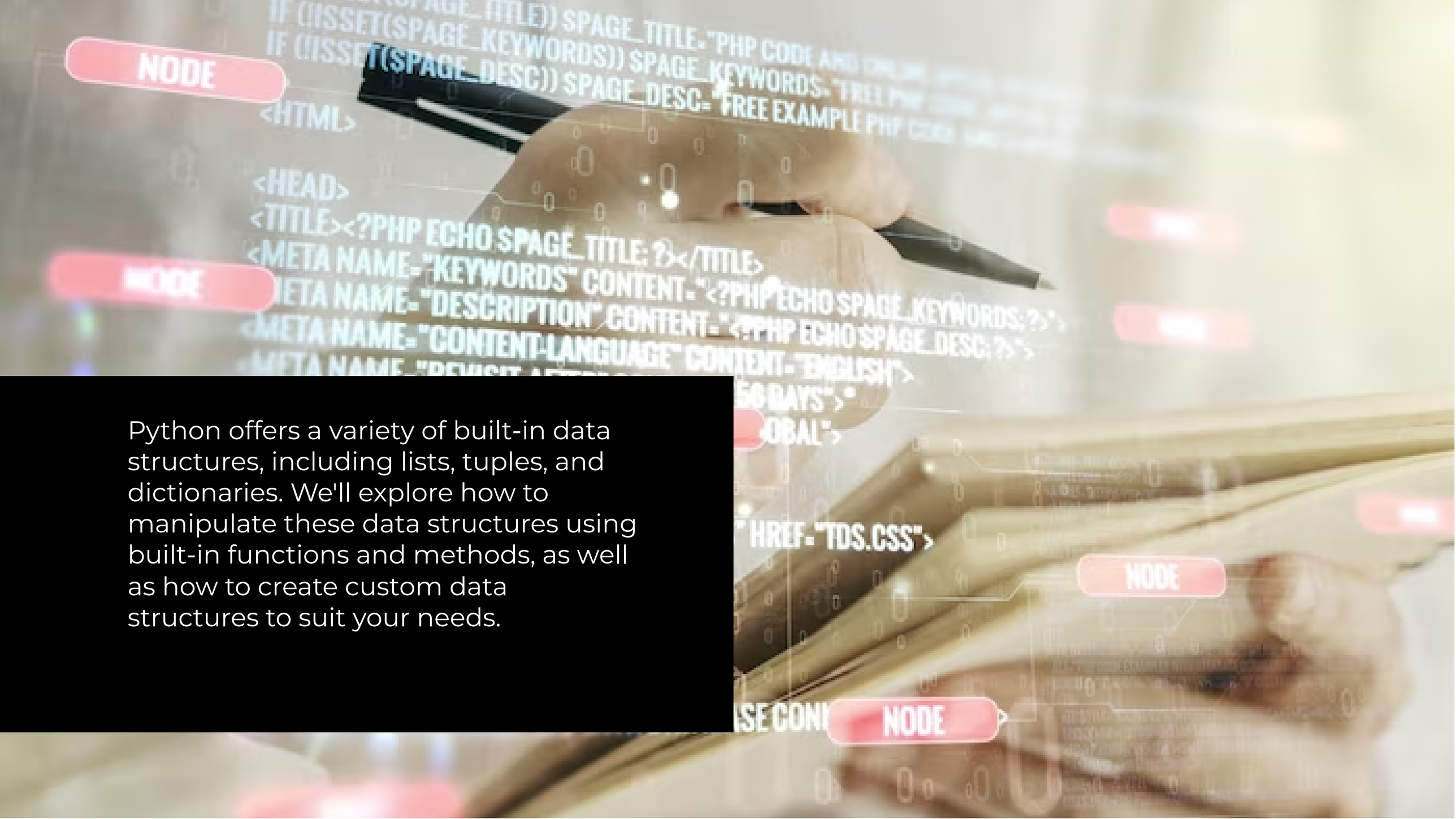
Mastering Data Manipulation in Python: A Comprehensive Guide to Functions and Modules



Python offers a variety of built-in data structures, including lists, tuples, and dictionaries. We'll explore how to manipulate these data structures using built-in functions and methods, as well as how to create custom data structures to suit your needs.

Introduction

Defining a target

1. Aquarius is one of the oldest constellations. Its name means “water bearer,” and its symbol is a representation of water.

2. Capricornus is the smallest constellation in the zodiac. Its name means “horned goat” and is represented by a goat with a fishtail.

3. Aries is one of the zodiac constellations, and its symbol represents the ram’s horns. It’s unique because its image has changed over time.

4. Cassiopeia is a constellation in the northern sky. It is easily recognizable due to its distinctive ‘W’ shape, formed by five bright stars.

Pandas
Library

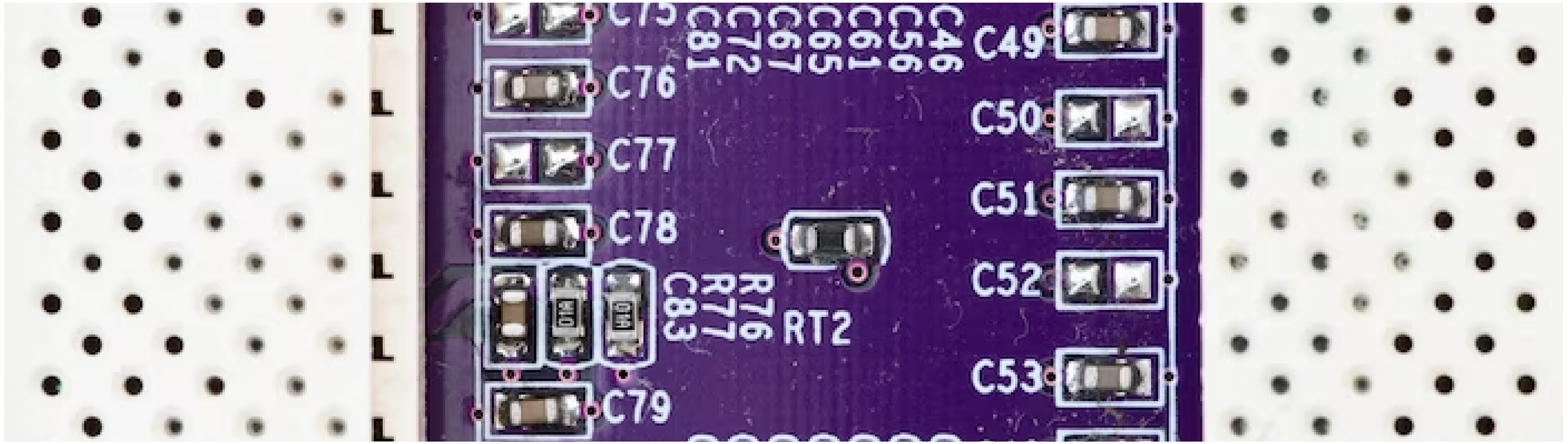
About the project

Pandas is a powerful library for data manipulation and analysis in Python. We'll cover the basics of working with Pandas data frames, including selecting, filtering, and grouping data. We'll also explore how to perform common data cleaning tasks using Pandas.

NumPy
Library

About the project

NumPy is a library for working with arrays of numerical data in Python. We'll cover the basics of creating and manipulating NumPy arrays, as well as how to perform mathematical operations on them. We'll also explore how to use NumPy for linear algebra and statistical analysis.



Data Visualization

Defining a target

Data visualization is an important aspect of scientific research. Researchers use Python libraries like Matplotlib and Seaborn to create visualizations of your data. Learn how to customize and annotate your visualizations to make them more effective.

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Regular Expressions

Defining a target

Regular expressions are a powerful tool for pattern matching. This lesson covers the basics of regular expressions in Python, including how to search for and extract specific patterns in text data. Learn how to use regular expressions for data cleaning and manipulation.

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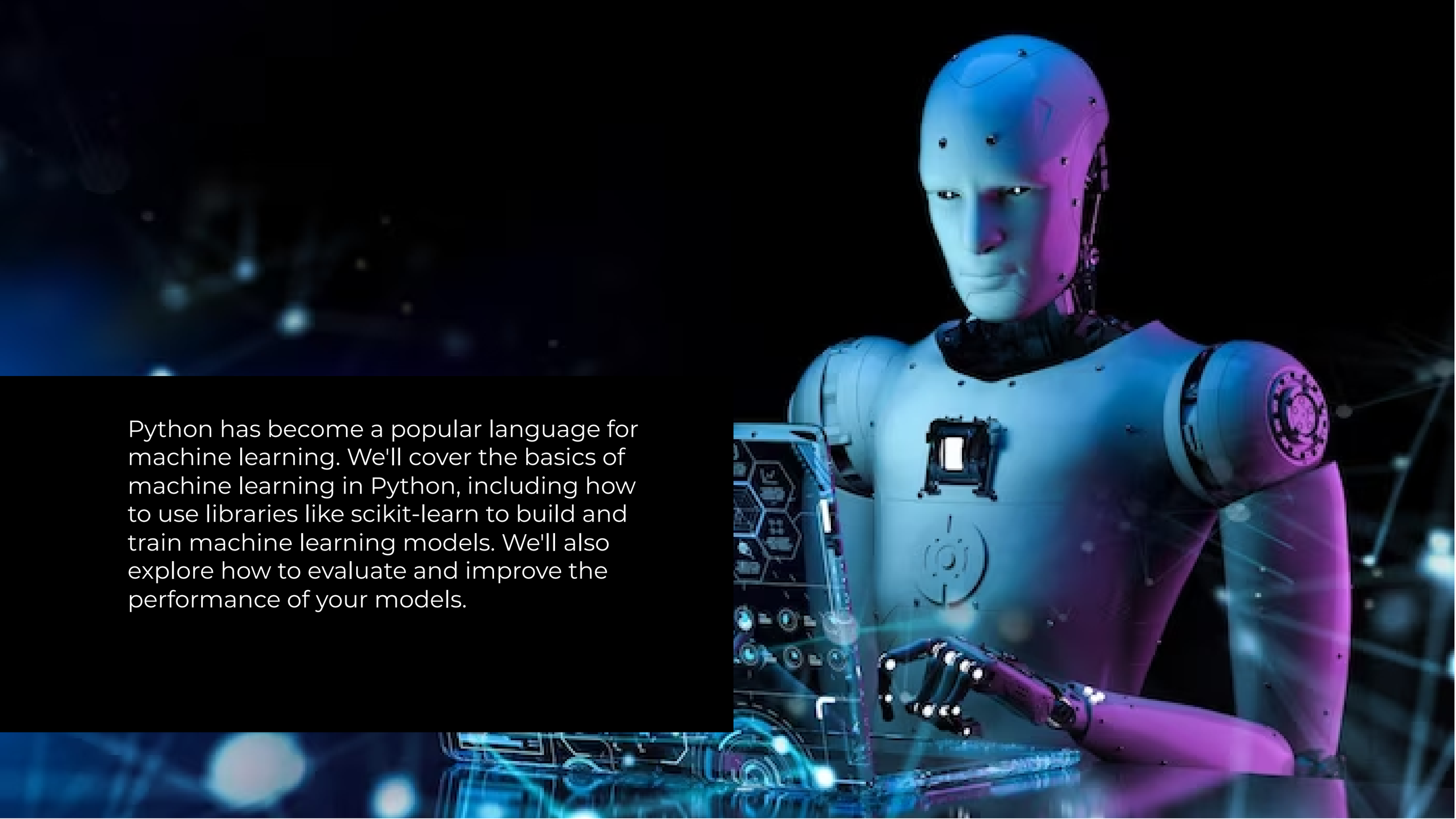
Web
Scraping

About the project

Web scraping is a technique for extracting data from websites. We'll cover how to use Python libraries like BeautifulSoup and Scrapy to scrape data from websites. We'll also explore how to handle common issues like pagination and dynamic content.

Python has become a popular language for machine learning. We'll cover the basics of machine learning in Python, including how to use libraries like scikit-learn to build and train machine learning models. We'll also explore how to evaluate and improve the performance of your models.



Conclusion

Where we are

In this presentation, we've covered a comprehensive guide to mastering data manipulation in Python. We've explored various functions and modules that will help you become proficient in handling and analyzing data. With the knowledge gained from this presentation, you'll be well-equipped to tackle any data-related task in Python.

Thanks!

Do you have any questions?

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