



Problem Solving with Python for Data Analysis

01

Introduction

Getting Started with Python and Data Analysis



Why Python for Data Analysis?

Popularity

- Python is known for its simplicity and readability, making it an ideal choice for data professionals who may not have a strong programming background.
- Python has a vast and active community of developers and data scientists, resulting in a large number of libraries and packages specifically designed for data analysis and machine learning.
- Python's open-source nature ensures that it remains accessible and affordable for individuals and organizations.

Versatility

- Python is a general-purpose programming language, meaning it can be used for a wide range of tasks, from web development to scientific computing.
- Python's flexibility allows data analysts to seamlessly integrate data analysis into larger software projects or applications.

Why Python for Data Analysis?

Rich Ecosystem of Data Analysis Libraries

- NumPy and Pandas for data manipulation and analysis.
- Matplotlib and Seaborn for data visualization.
- Machine learning libraries like Scikit-Learn and deep learning frameworks like TensorFlow and PyTorch.

Examples of Python in Data-Driven Decision-Making

- Tech Giants: Google, Facebook, and Amazon, which use Python extensively to analyze user data, improve products, and personalize user experiences.
- Finance: risk assessment, algorithmic trading, and fraud detection.
- Healthcare: patient diagnosis, drug discovery, and medical image analysis.
- Retail: optimize inventory, forecast demand, and enhance customer experiences through recommendation engines.
- ...

Setting up Python

Cloud based

- replit.com

Native on computer

- Python + VS Code
- Anaconda distribution
- Jupiter notebook

Basic Python Syntax

[Jupyter Notebook](#) 

1. Hello world
2. Variables and Assignments
3. Comments
4. Data types
5. Casting
6. String
7. Print function
8. Arithmetic Operators
9. User input

