nexacu
software skills training

Python Basics for Data Analysis

Detailed Content

Introduction

Introduction to Python
Introduction to Anaconda and JupyterLab
The Python Standard Library

Installing Python

Anaconda
JupyterLab
Installing additional packages

Anaconda and JupyterLab

Using Anaconda
Working with environments
Launching JupyterLab
Working in JupyterLab
Using Jupyter Notebooks
Accessing help
Autocomplete
Basics of running code
Markdown
Shutting down kernels and the Jupyter Server

Using Python as a Calculator

Arithmetic operators
Relational operators
Logical operators
Order of operations

The Python Standard Library

Built-in functions
Other functions in the standard library

Working with Objects

Objects in Python
What are objects?
Creating objects
Naming rules
Naming conventions
Names as references
Namespaces
Using `dir()` to list objects, attributes and methods

Data Types and Structures in Python

Data types
Conversion between data types
Built-in data structures
Tuples, lists, ranges and dictionaries
Pandas Series and DataFrames
Conversion between data structures
Which data structure should I use?

pandas DataFrames

Creating DataFrames
Importing data into a DataFrame
Uploading data in JupyterLab

Accessing Data within Data Structures

Referring to data by position
Slicing
Strings
Referring to data by name
Accessing data from Series
Accessing data from DataFrames
Accessing data that meet specific criteria

Manipulating Objects

Replace parts of an object
Add data to an object
Remove data from a data object

Manipulating DataFrames

Making changes in place
Renaming columns and rows

Vectorised computation with pandas and NumPy

Vectorised arithmetic
NumPy
Vectorised methods and functions
Broadcasting

Functions vs methods

Basic syntax for functions
Basic syntax for methods
Arguments

Working with Data in DataFrames

Calculating summary statistics

Plotting Data

Plotting with Matplotlib
Create a scatterplot
Create a linechart
Add text
Add a legend
Exporting plots

Exporting Data

Export data to csv file

Notebook to Markdown

View your Notebook as a rendered Markdown file