Working with Data in Python Cheat Sheet

Reading and writing files

Package/Method	Description	Syntax and Code Example
File opening modes	Different modes to open files for specific operations.	Syntax: r (reading) w (writing) a (appending) + (updating: read/write) b (binary, otherwise text) Example: Copied! Syntax: Copied!
File reading methods	Different methods to read file content in various ways.	Example: Copied! Syntax: Copied!
File writing methods	Different write methods to write content to a file.	Example: Copied! Syntax: Copied!
Iterating over lines	Iterates through each line in the file using a `loop`.	Example: Copied! Syntax: Copied!
Open() and close()	Opens a file, performs operations, and explicitly closes the file using the close() method.	Example: Copied! Syntax: Copied!
with open()	Opens a file using a with block, ensuring automatic file closure after usage.	Example: Copied!

Pandas

Package/Method	Description	Syntax and Code Example
.read_csv()	Reads data from a `.CSV` file and creates a DataFrame.	Syntax: dataframe_name = pd.read_csv("filename.csv") Example: df = pd.read_csv("data.csv") Syntax: Copied!
.read_excel()	Reads data from an Excel file and creates a DataFrame.	Example: Copied! Syntax: Copied!
.to_csv()	Writes DataFrame to a CSV file.	Example: Copied! Syntax: Copied!
Access Columns	Accesses a specific column using [] in the DataFrame.	Example: Copied! Syntax: Copied!
describe()	Generates statistics summary of numeric columns in the DataFrame.	Example: Copied! Syntax: Copied!
drop()	Removes specified rows or columns from the DataFrame. axis=1 indicates columns. axis=0 indicates rows.	Example: Copied! Syntax: Copied!
dropna()	Removes rows with missing NaN values from the DataFrame. axis=0 indicates rows.	Example: Copied! Syntax: Copied!
duplicated()	Duplicate or repetitive values or records within a data set.	Example: Copied! Syntax: Copied!
Filter Rows	Creates a new DataFrame with rows that meet specified conditions.	Example: Copied! Syntax: Copied!
groupby()	Splits a DataFrame into groups based on specified criteria, enabling subsequent aggregation, transformation, or analysis within each group.	Example: Copied! Syntax: Copied!
head()	Displays the first n rows of the DataFrame.	Example: Copied! Syntax: Copied!
Import pandas	Imports the Pandas library with the alias pd.	Example:

		1. i 1. import pandas as pd Copied! Syntax: 1. i 1. dataframe_name.info() Copied!
info()	Provides information about the DataFrame, including data types and memory usage.	Example: 1. i 1. df.info() Copied!
		Syntax: 1. i 1. merged_df = pd.merge(df1, df2, on=["column", "column2"]) Copied!
merge()	Merges two DataFrames based on multiple common columns.	Example: 1. i 1. merged_df = pd.merge(sales, products, on=["product_id", "category_id"]) Copied!
		Syntax: 1. i 1. print(df) # or just type df Copied!
print DataFrame	Displays the content of the DataFrame.	Example: 1. i 2. j 1. print(df) 1. df Copied!
		Syntax: 1. i 1. dataframe_name["column_name"].replace(old_value, new_value, inplace=True) Copied!
replace()	Replaces specific values in a column with new values.	Example: 1. i 1. df["status"].replace("In Progress", "Active", inplace=True) Copied!
		Syntax: 1. i 1. dataframe_name.tail(n) Copied!
tail()	Displays the last n rows of the DataFrame.	Example: 1. i 1. df.tail(5) Copied!

Numpy

Package/Method	Description	Syntax and Code Example
		Syntax: 1. i 1. import numpy as np Copied!
Importing NumPy	Imports the NumPy library.	Example: 1. i 1. import numpy as np Copied!
		Syntax: 1. i 2. j 1. array_1d = np.array([list1 values]) # 1D Array 2. array_2d = np.array([[list1 values], [list2 values]]) # 2D Array Copied!
np.array()	Creates a one or multi-dimensional array.	Example: 1. i 2. j 1. array_1d = np.array([1, 2, 3]) # 1D Array 2. array_2d = np.array([[1, 2], [3, 4]]) # 2D Array Copied!
		Example: 1. i 2. j 3. k 4. l 5. m 1. np.mean(array) 2. np.sum(array) 3. np.max(array) 4. np.min(array) 5. np.dot(array_1, array_2) Copied!
Numpy Array Attributes	- Calculates the mean of array elements - Calculates the sum of array elements - Finds the minimum value in the array - Finds the maximum value in the array - Computes dot product of two arrays	

Skills Network