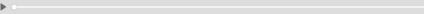
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Working with Data in Python Cheat Sheet

Reading and writing files

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Package/Method		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) Examples: with open("data.txt", "r") as file: content = file.read() print(content) with open("output.txt", "w") as file: file.write("Hello, world!") with open("log.txt", "a") as file: file.write("Log entread")			
File reading methods	Different methods to read file content in various ways.	Syntax: 1			
File writing methods	Different write methods to write content to a file.	Syntax: 1 file.write(content) # writes a string to the file 2 file.writelines(lines) # writes a list of strings to the file Example: 1 lines = ["Hello\n", "World\n"] 2 with open("output.txt", "w") as file: 3 file.writelines(lines)			
Iterating over lines	Iterates through each line in the file using a `loop`.	Syntax: 1 for line in file: # Code to process each line Example: 1 with open("data.txt", "r") as file: 2 for line in file: print(line)			
Open() and close()	Opens a file, performs operations, and explicitly closes the file using the close() method.	Syntax: 1 file = open(filename, mode) # Code that uses the file 2 file.close() Example: 1 file = open("data.txt", "r") 2 content = file.read() 3 file.close()			
with open()	Opens a file using a with block, ensuring automatic file closure after usage.	Syntax: 1 with open(filename, mode) as file: # Code that uses the file Example: 1 with open("data.txt", "r") as file: 2 content = file.read()			

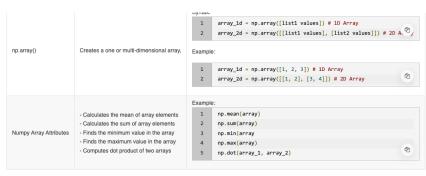
Pandas

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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") \; example: df = pd.read_csv" \; example: df = pd.read_csv("data.csv") \; $
.read_excel()	Reads data from an Excel file and creates a DataFrame.	Syntax: 1
.to_csv()	Writes DataFrame to a CSV file.	Syntax: 1 dataframe_name.to_csv("output.csv", index=False) Example: 1 df.to_csv("output.csv", index=False) ②
Access Columns	Accesses a specific column using [] in the DataFrame.	Syntax: 1 dataframe_name["column_name"] # Accesses single column 2 dataframe_name[["column1", "column2"]] # Accesses multiple columns Example: 1 df["age"] 2 df[["name", "age"]]
describe()	Generates statistics summary of numeric columns in the DataFrame.	Syntax: 1

drop()	Removes specified rows or columns from the DataFrame. axis=1 indicates columns. axis=0 indicates rows.	Syntax: 1 dataframe_name.drop(["column1", "column2"], axis=1, inplace=True) 2 dataframe_name.drop(index=[row1, row2], axis=0, inplace=True) Example: 1 df.drop(["age", "salary"], axis=1, inplace=True) # Will drop columns 2 df.drop(index=[5, 10], axis=0, inplace=True) # Will drop rows
dropna()	Removes rows with missing NaN values from the DataFrame, axis=0 indicates rows.	Syntax: 1 dataframe_name.dropna(axis=0, inplace=True) Example: 1 df.dropna(axis=0, inplace=True) Q
duplicated()	Duplicate or repetitive values or records within a data set.	Syntax: 1 dataframe_name.duplicated() ② Example: 1 duplicate_rows = df[df.duplicated()] ②
Filter Rows	Creates a new DataFrame with rows that meet specified conditions.	Syntax: 1
groupby()	Splits a DataFrame into groups based on specified criteria, enabling subsequent aggregation, transformation, or analysis within each group.	Syntax: 1 grouped = dataframe_name.groupby(by, axis=0, level=None, as_index=True, 2 sort=True, group_keys=True, squeeze=False, observed=False, dropna=True) Example: 1 grouped = df.groupby(["category", "region"]).agg(("sales": "sum"))
head()	Displays the first n rows of the DataFrame.	Symtax: 1
Import pandas	Imports the Pandas library with the alias pd.	Syntax: 1 import pandas as pd ② Example: 1 import pandas as pd ②
info()	Provides information about the DataFrame, including data types and memory usage.	Syntax:
merge()	Merges two DataFrames based on multiple common columns.	Syntax: 1 merged_df = pd.merge(df1, df2, on=["column1", "column2"])
print DataFrame	Displays the content of the DataFrame.	Syntax: 1
replace()	Replaces specific values in a column with new values.	Syntax: 1
tail()	Displays the last n rows of the DataFrame.	Syntax: 1 dataframe_name.tail(n) ② Example: 1 df.tail(5) ②

Numpy

Package/Method	Description	Syntax and Code Example		
Importing NumPy	Imports the NumPy library.	Syntax: 1 import numpy as np @ Example:		
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