Python cheat sheet

(COMMONLY USED CODE SNIPPETS)

1. Basic Python Syntax:

Task	Code
Print to Console	print("Hello, World!")
Variable Assignment	x = 10
Commenting	# This is a comment
Multi-line Comment	''' This is a multi-line comment '''
Input from User	name = input("Enter your name: ")
Check Data Type	type(x)
Type Casting	int("10"), float("10.5"), str(100)

2. Data Structures:

Task	Code
List (Array)	my_list = [1, 2, 3, 4, 5]
Access List Item	my_list[0]
List Slicing	my_list[1:4]
Add Item to List	my_list.append(6)
Remove Item from List	my_list.remove(3)
Tuple	my_tuple = (1, 2, 3, 4)
Set	my_set = {1, 2, 3, 4}
Dictionary (HashMap)	my_dict = {"key1": "value1", "key2": "value2"}
Access Dictionary Value	my_dict["key1"]
Add Key-Value Pair	my_dict["key3"] = "value3"

3. Control Flow:

Task	Code
If Statement	if x > 10: print("x is greater than 10")
If-Else Statement	if x > 10: print("x is greater than 10") else: print("x is less than or equal to 10")
Elif Statement	if x > 10: print("x is greater") elif x == 10: print("x is 10") else: print("x is smaller")
For Loop	for i in range(5): print(i)
While Loop	while x < 10: x += 1
Break	for i in range(5): if i == 3: break
Continue	for i in range(5): if i == 3: continue

4. Functions:

Task	Code
Define Function	def my_function(): print("Hello from function!")
Function with Parameters	def greet(name): print(f"Hello, {name}!")
Return Value from Function	def add(a, b): return a + b
Lambda Function	add = lambda a, b: a + b

5. String Manipulation:

Task	Code
Concatenate Strings	full_name = "John" + " " + "Doe"
String Length	len("Hello")
Convert to Upper Case	"hello".upper()
Convert to Lower Case	"HELLO".lower()
Substring	"Hello, World!"[7:12]
Find Substring	"Hello, World!".find("World")
Replace Substring	"Hello, World!".replace("World", "Python")
Split String	"Hello, World!".split(",")

6. File Handling:

Task	Code
Open a File	file = open("example.txt", "r")
Read File	content = file.read()
Read Line by Line	lines = file.readlines()
Write to a File	file = open("example.txt", "w"); file.write("Hello, World!")
Close a File	file.close()

7. List Comprehension:

Task	Code
Basic List Comprehension	[x**2 for x in range(5)]
List Comprehension with Condition	[x for x in range(10) if x % 2 == 0]

8.Error Handling:

Task	Code
Try-Except Block	try: x = 10 / 0 except ZeroDivisionError: print("Cannot divide by zero")
Finally Block	try: x = 10 / 0 except ZeroDivisionError: print("Error!") finally: print("This runs always")

9. Working with Libraries:

Task	Code
Importing a Library	import math
Using a Library Function	math.sqrt(16)
Install a Library (using pip)	pip install pandas
Import Specific Function	from math import sqrt

10. NumPy for Numerical Operations:

Task	Code
Import NumPy	import numpy as np
Create NumPy Array	arr = np.array([1, 2, 3, 4, 5])
Array Reshaping	arr.reshape(5, 1)
Array Operations	arr + 10, arr * 2
Array Slicing	arr[1:4]
Array Statistics	np.mean(arr), np.median(arr), np.std(arr)

11. Pandas for Data Handling:

Task	Code
Import Pandas	import pandas as pd
Create DataFrame	df = pd.DataFrame({"Name": ["Alice", "Bob"], "Age": [25, 30]})
Read CSV File	df = pd.read_csv("data.csv")
View Data	df.head()
Basic Statistics	df.describe()
Filter Data	df[df["Age"] > 25]
Group By	df.groupby("Age").mean()

12. Matplotlib for plotting:

Task	Code
Import Matplotlib	import matplotlib.pyplot as plt
Simple Plot	plt.plot([1, 2, 3], [4, 5, 6]); plt.show()
Bar Plot	plt.bar([1, 2, 3], [4, 5, 6]); plt.show()
Histogram	plt.hist([1, 2, 2, 3, 4, 5]); plt.show()
Scatter Plot	plt.scatter([1, 2, 3], [4, 5, 6]); plt.show()