SECTION 1: Questionnaire

1. What is the difference between a list and a tuple in Python?
   - List is mutable and tuples are immutable
   - List defined with [] and tuples defined with ()
   - Lower than tuple, faster than list
   - Used when data will change used when data should stay constant
2. What is the purpose of if _name_ == "_main_":?
   - It ensures that a block of code runs only when the file is executed directly, not when it is imported into another file.
3. What are the naming conventions for functions and variables in Python?
   - Use snake_case
   - All lowercase letters
   - Word separated by underscores
   - Examples:
     total_marks, cal_sum
4. What the difference is between == and is?
   - == checks value equality
   - Example
     5==5 true
   - Is checks memory/location identity
   - Example:
     Two different lists with same values is returns false
5. How does a dictionary store data in Python? Explain in simple words.
   - A dictionary stores data in key–value pairs, like a labeled box.
     Example:
     "name": "Ali"
     Here name is the label (key) and Ali is the value.

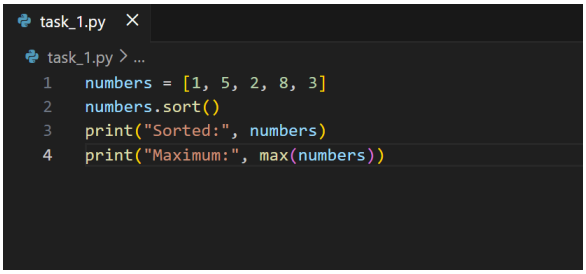
SECTION 2 — Coding Tasks

Task 1:

Given the list:

Numbers = [1, 5, 2, 8, 3] Sort this list in ascending order, then print the maximum number.

Code:



Output:

```
op\Techinal test\task_1.py"
Sorted: [1, 2, 3, 5, 8]
Maximum: 8
PS C:\Users\Haddi Khan\Desktop\Techinal test>
```

Task 2:

Create a function greet(name) that prints:

Hello, <name>! Welcome to Neon Brothers.

Code:

task_2.py > ...

```python
def greet(name):
    print(f"Hello, {name}! Welcome to Neon Brothers.")
greet("Haddi")
```

Output:

```
op\Techinal test\task_2.py"
Hello, Haddi! Welcome to Neon Brothers.
```

Task 3:

Take age input from the user.

If age is greater than 18, print "You are an adult", otherwise print "You are under 18".

Code:

task_3.py > ...

```python
# Task 3:
# Take age input from the user.
# If age is greater than 18, print "You are an adult", otherwise print "You are under 18".
age=int(input("Enter the age of a person: "))
if age>=18:
    print("you are an adult")
else :
    print ("You are under 18")
```

Output:

```
Enter the age of a person: 17
You are under 18
```

Task 4:

Given this dictionary:

Student = {"name": "Ali", "age": 20, "grade": "A"}

Print only the name and grade.

Code:

```python
# Task 4:
# Given this dictionary:
# Student = {"name": "Ali", "age": 20, "grade": "A"}
# Print only the name and grade.

student = {"name": "Ali", "age": 20, "grade": "A"}
print(student["name"])
print(student["grade"])
```

Output:

```
st\task_4.py"
Ali
A
```

Task 5:

Given the list:

marks = [40, 55, 80, 90, 30]

Use a list comprehension to extract only the marks that are greater than 50.

Code:

```python
# Task 5:
# Given the list:
# marks = [40, 55, 80, 90, 30]
# Use a list comprehension to extract only the marks that are greater than 50.

marks = [40, 55, 80, 90, 30]

high_marks = [m for m in marks if m > 50]
print(high_marks)
```

Output:

```
st\task_5.py"
[55, 80, 90]
PS C:\Users\Haddi Khan\Desktop\Techinal test>
```

Task 6:

Write a program that prints the numbers from 1 to 10 using a for loop.

Code:

```python
# Task 6:
# Write a program that prints the numbers from 1 to 10 using a for loop.
for i in range (1,11):
    print(i)
```

Output:

```
st\task_6.py"
1
2
3
4
5
6
7
8
9
10
```

Task 7 (Optional):

Make an API call to print a random joke using this endpoint:

https://official-joke-api.appspot.com/random_joke

Use the requests library.

Code:

```python
# Task 7 (Optional):
# Make an API call to print a random joke using this endpoint:
# https://official-joke-api.appspot.com/random_joke
# Use the requests library.
import requests
response = requests.get("https://official-joke-api.appspot.com/random_joke")
joke = response.json()
print(joke["setup"])
print(joke["punchline"])

```

Output:

```
st\task_7.py"
Why did the programmer always carry a pencil?
They preferred to write in C#.
```

SECTION 3 — Mini Logic Problem

You have a sentence:

text = "Hello world this is Python"

Count how many words are in the sentence.

Hint: You can use .split().

Code:

Section_3.py > ...

```python
# You have a sentence:
# text = "Hello world this is Python"
# Count how many words are in the sentence.
# Hint: You can use .split().

text = "Hello world this is Python"
words = text.split()
print("Number of words:", len(words))
```

Output:

```
st\Section_3.py"
Number of words: 5
PS C:\Users\Haddi Khan\Desktop\Techinal test>
```