Assignment-7.1

Name: Sushma Purella

H.No:2303A52188

Batch: 44

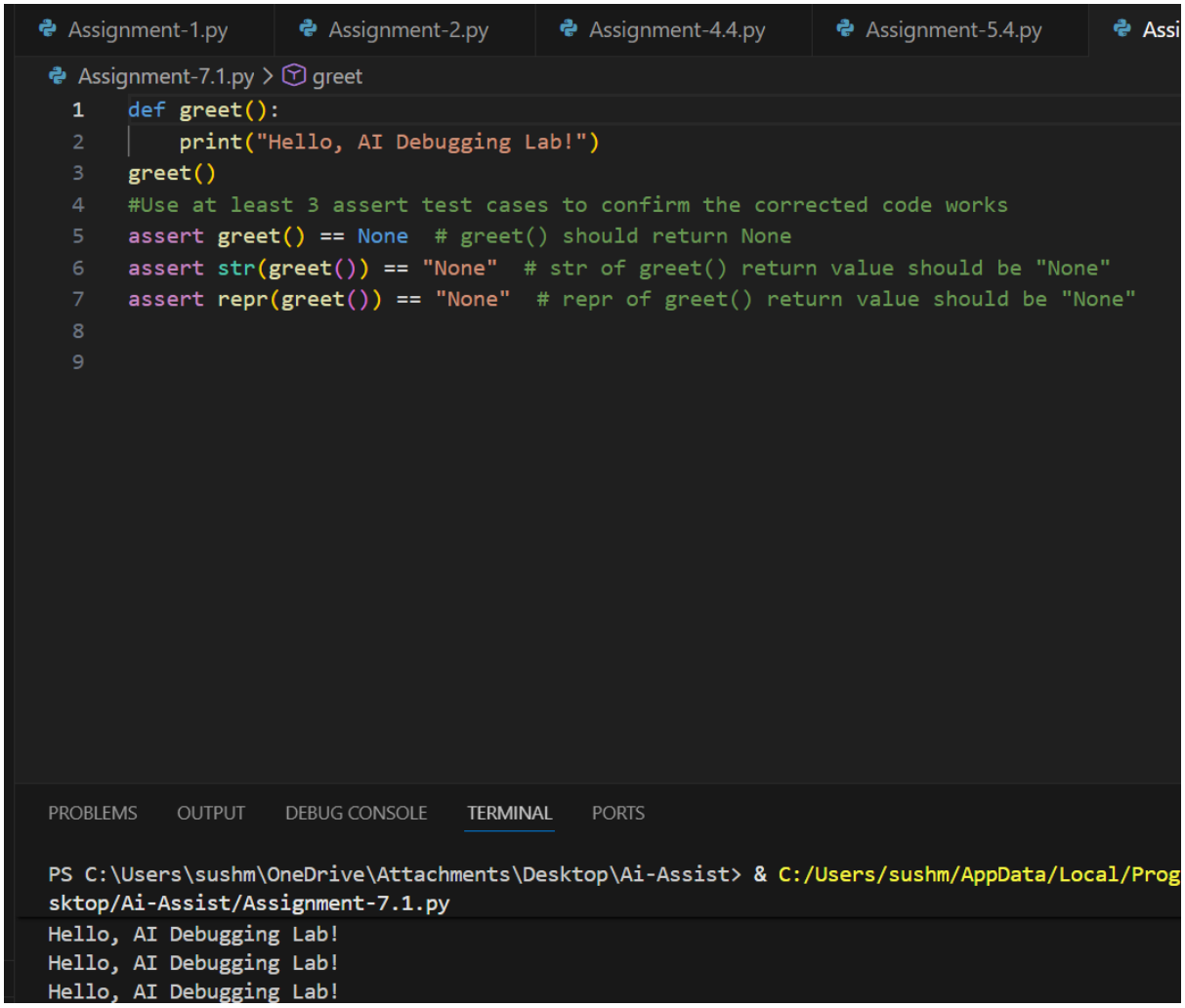
Task1: Provide a Python snippet with a missing parenthesis in a print statement (e.g., print "Hello"). Use AI to detect and fix the syntax error.

```
# Bug: Missing parentheses in print statement
def greet():
print "Hello, AI Debugging Lab!"
greet()
```

Prompt:

Detect and fix the syntax error in the following Python code which contains a missing parenthesis in a print statement. After correcting the code, verify it using at least three assert test cases.

Code:



Observation:

When the given code is executed, Python throws a **SyntaxError**:

SyntaxError: Missing parentheses in call to 'print'

This happens because in **Python 3**, print is a function and must be written with parentheses. The statement print "Hello, AI Debugging Lab!" follows Python 2 syntax, so the program stops execution and produces no output.

Task Description #2 (Incorrect condition in an If Statement)

Task: Supply a function where an if-condition mistakenly uses =

instead of ==. Let AI identify and fix the issue.

Bug: Using assignment (=) instead of comparison (==)

def check_number(n):

if n = 10:

return "Ten"

else:

return "Not Ten"

Prompt:

Identify and explain the error in the following Python function where an incorrect operator is used in the if condition. Correct the issue and explain why it causes a bug.

Code:

```
10
11  def check_number(n):
12      if n == 10:
13          return "Ten"
14      else:
15          return "Not Ten"
16
17  #Use at least 3 assert test cases to confirm the corrected code works
18  assert check_number(10) == "Ten"  # Test with 10
19  assert check_number(5) == "Not Ten"  # Test with a number other than
20  assert check_number(-3) == "Not Ten"  # Test with a negative number
21  print(check_number(10))
22  print(check_number(5))
23  print(check_number(-3))
24
```

```
PROBLEMS  OUTPUT  DEBUG CONSOLE  TERMINAL  PORTS

PS C:\Users\sushm\OneDrive\Attachments\Desktop\Ai-Assist> & C:/Users/sushm/AppData/Local/Programs/Python/Python313/
xe c:/Users/sushm/OneDrive/Attachments/Desktop/Ai-Assist/Assignment-7.1.py
Ten
Not Ten
Not Ten
```

Task Description #3 (Runtime Error – File Not Found)

Task: Provide code that attempts to open a non-existent file and

crashes. Use AI to apply safe error handling.

Bug: Program crashes if file is missing

def read_file(filename):

with open(filename, 'r') as f:

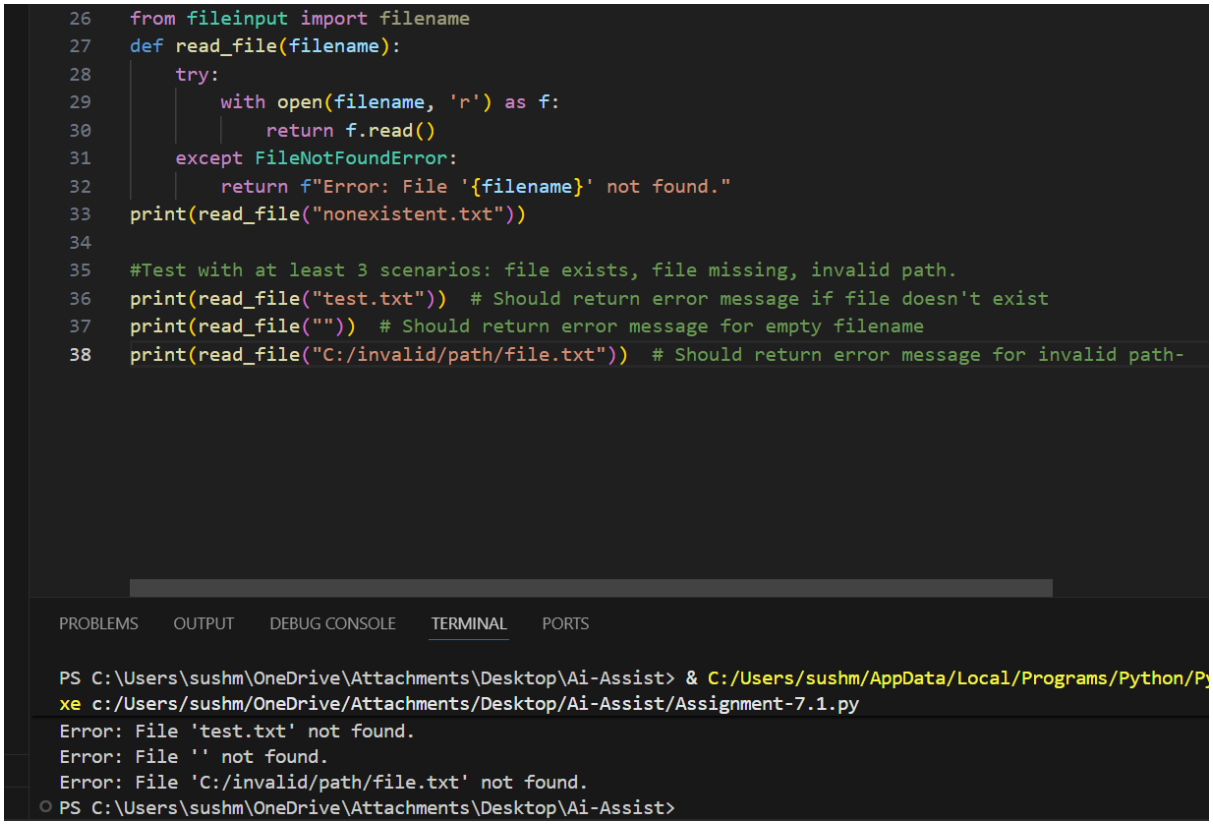
return f.read()

print(read_file("nonexistent.txt"))

Prompt:

Analyze the following Python code that crashes when attempting to open a non-existent file. Apply safe error handling using AI suggestions, display a user-friendly error message, and verify the solution using multiple test scenarios.

Code:



Observation:

When the given code is executed with a file that does not exist, Python raises a **runtime error**:

FileNotFoundError: [Errno 2] No such file or directory: 'nonexistent.txt'

The program crashes because there is **no exception handling** to manage missing or invalid files.

Task Description #4 (Calling a Non-Existent Method)

Task: Give a class where a non-existent method is called (e.g.,

obj.undefined_method()). Use AI to debug and fix.

Bug: Calling an undefined method

class Car:

def start(self):

return "Car started"

my_car = Car()

print(my_car.drive()) # drive() is not defined

Prompt:

Analyze the following Python class where a non-existent method is called. Identify the cause of the error and decide whether to define the missing method or correct the method call. Fix the issue and verify the corrected class using assert test cases.

Code:

```
41
42  class Car:
43      def start(self):
44          return "Car started"
45
46  my_car = Car()
47  print(my_car.start())
48  #Use 3 assert tests to confirm the corrected class works.
49  assert my_car.start() == "Car started"
50  assert str(my_car.start()) == "Car started"
51  assert repr(my_car.start()) == "'Car started'"
52
53
```

```
PROBLEMS  OUTPUT  DEBUG CONSOLE  TERMINAL  PORTS

PS C:\Users\sushm\OneDrive\Attachments\Desktop\Ai-Assist> & C:/Users/sushm/AppData/Local/Progr
xe c:/Users/sushm/OneDrive/Attachments/Desktop/Ai-Assist/Assignment-7.1.py
PS C:\Users\sushm\OneDrive\Attachments\Desktop\Ai-Assist> & C:/Users/sushm/AppData/Local/Progr
xe c:/Users/sushm/OneDrive/Attachments/Desktop/Ai-Assist/Assignment-7.1.py
Car started
PS C:\Users\sushm\OneDrive\Attachments\Desktop\Ai-Assist>
```

Observation:

When the given code is executed, Python raises an **AttributeError**:

AttributeError: 'Car' object has no attribute 'drive'

This error occurs because the method drive() is called on the Car object, but it is **not defined** in the Car class.

Task Description #5 (TypeError – Mixing Strings and Integers in Addition)

Task: Provide code that adds an integer and string ("5" + 2) causing a TypeError. Use AI to resolve the bug.

Bug: TypeError due to mixing string and integer

def add_five(value):

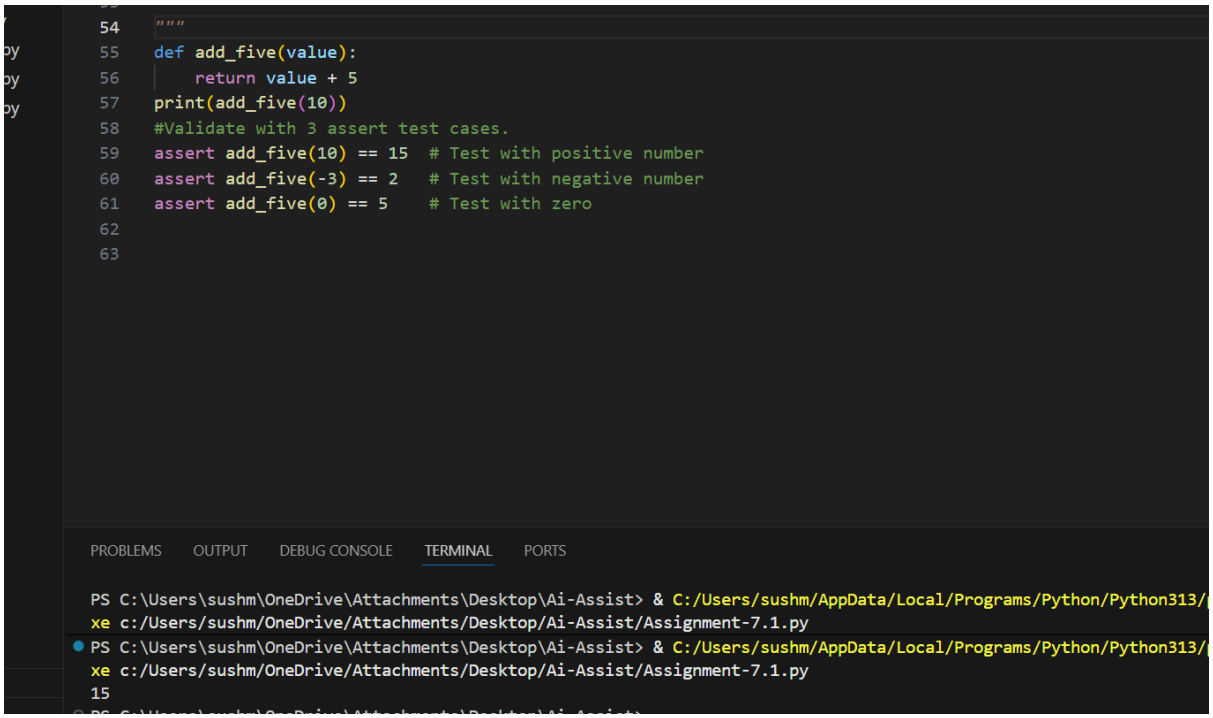
return value + 5

print(add_five("10"))

Prompt:

Analyze the following Python code that raises a TypeError when adding a string and an integer. Ask AI to provide two possible solutions—one using type casting and another using string concatenation. Fix the code and validate it using assert test cases.

Code:



Observation:

When the given code is executed, Python raises a **TypeError**:

TypeError: can only concatenate str (not "int") to str

This happens because the function attempts to add an integer (5) to a string ("10"), which is not allowed in Python without explicit conversion.