Assignment:7.1

-Ai Assistant Cording

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Task Description#1:- 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.

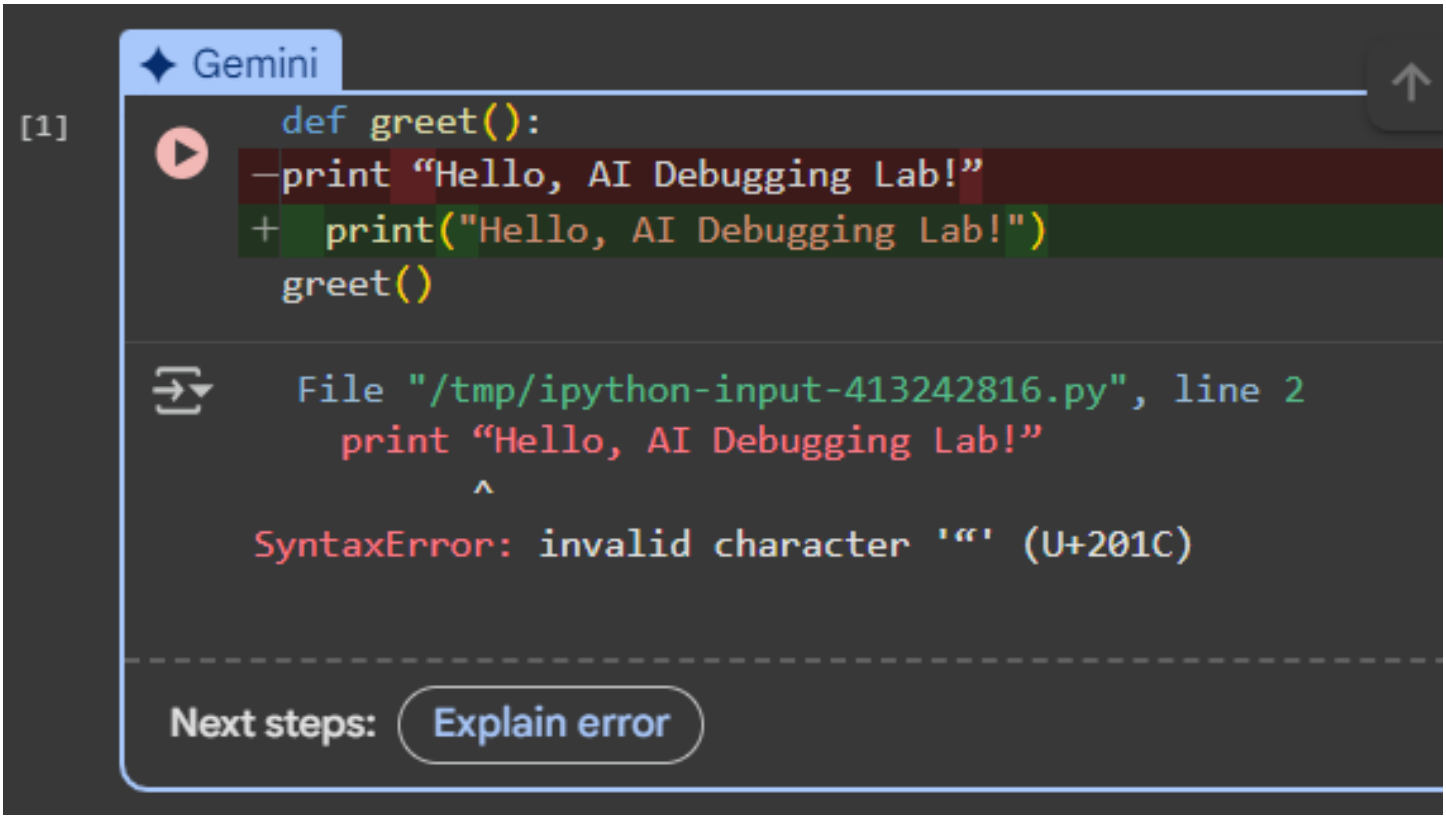
#Bug: Missing parentheses in print statement

```
def greet():
    print “Hello, AI Debugging Lab!”
greet()
```

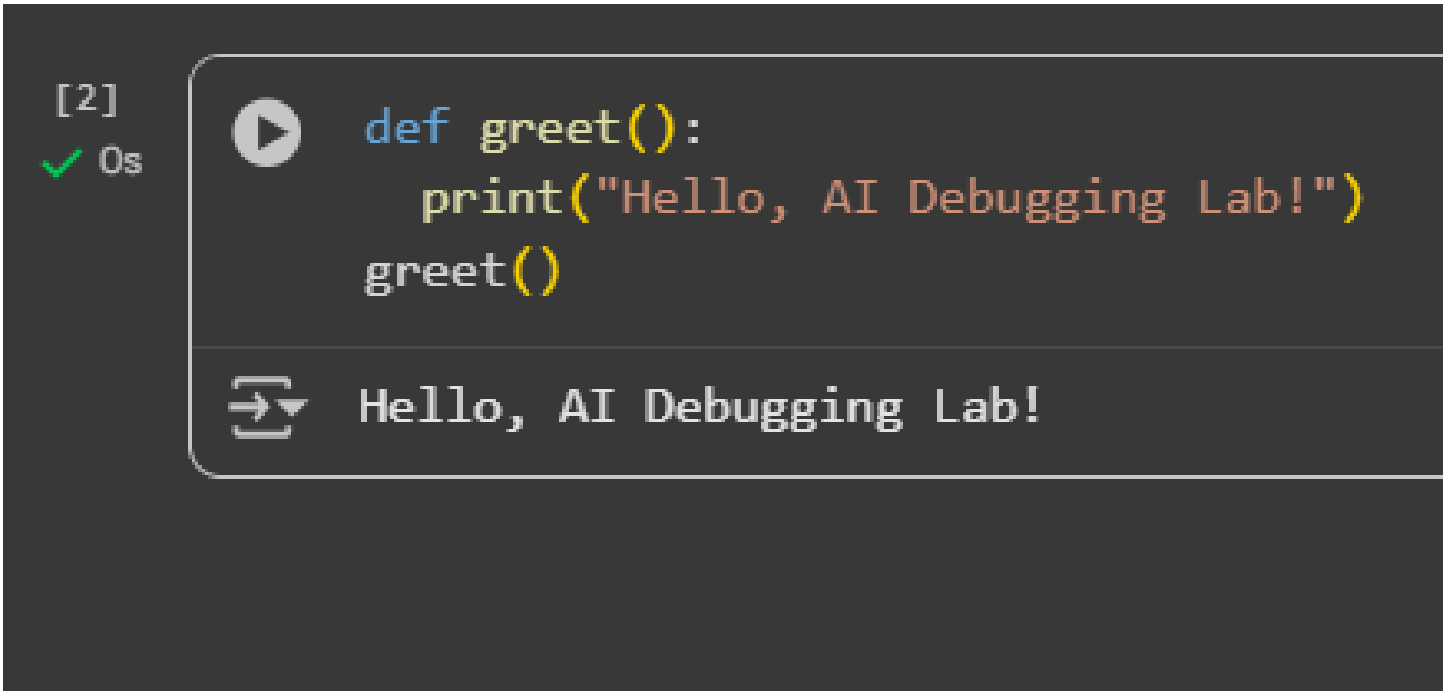
Requirements:

- Run the code to observe the error.
- Apply AI Suggestions to correct the syntax.
- Use at least 3 assert test cases to confirm the corrected code works.

Ans:-



Prompt: correct the syntax i am getting error.



Task Description#2:- (Logical Error - Incorrect Condition in an if Statement)

Task :Supply a function where an if-condition mistakenly uses=insted of ==. Let AI identify and fix the issue.

#Bug: Using assignment (=) instead of comparision(==)

```
def check_number(n):
    if n=10:
        return “ten”
    else:
        return “Not Ten”
```

Requirements:

- Ask AI to explain why this cause a bug.
- Correct the code and verify with 3 assert test cases.

Expected Output #2:

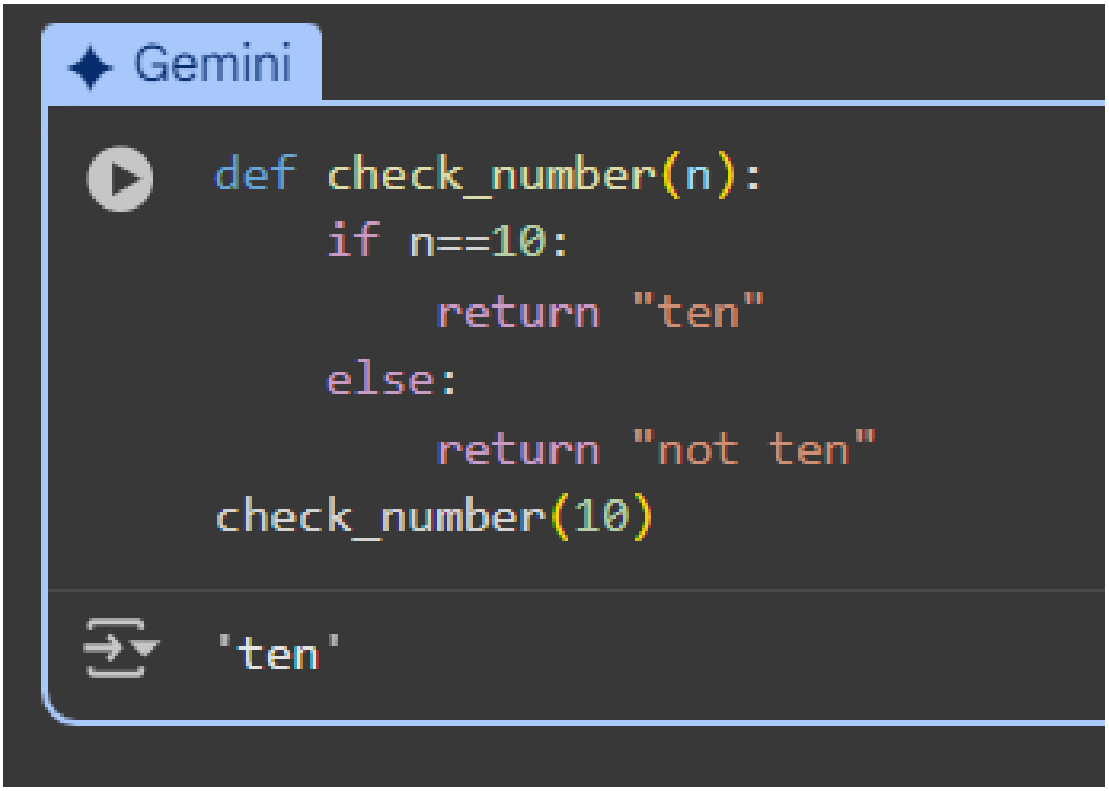
- Corrected code using == with explanation and successful test excution.

Ans:-

AI Response:-You are getting a SyntaxError in cell 6NJGCxVA1_4t because you are using the assignment operator = inside the if statement instead of the comparison operator ==. The assignment operator is used to assign a value to a variable, while the comparison operator is used to check if two values are equal.

I will fix this by changing = to == in the if statement.

Output:



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”))

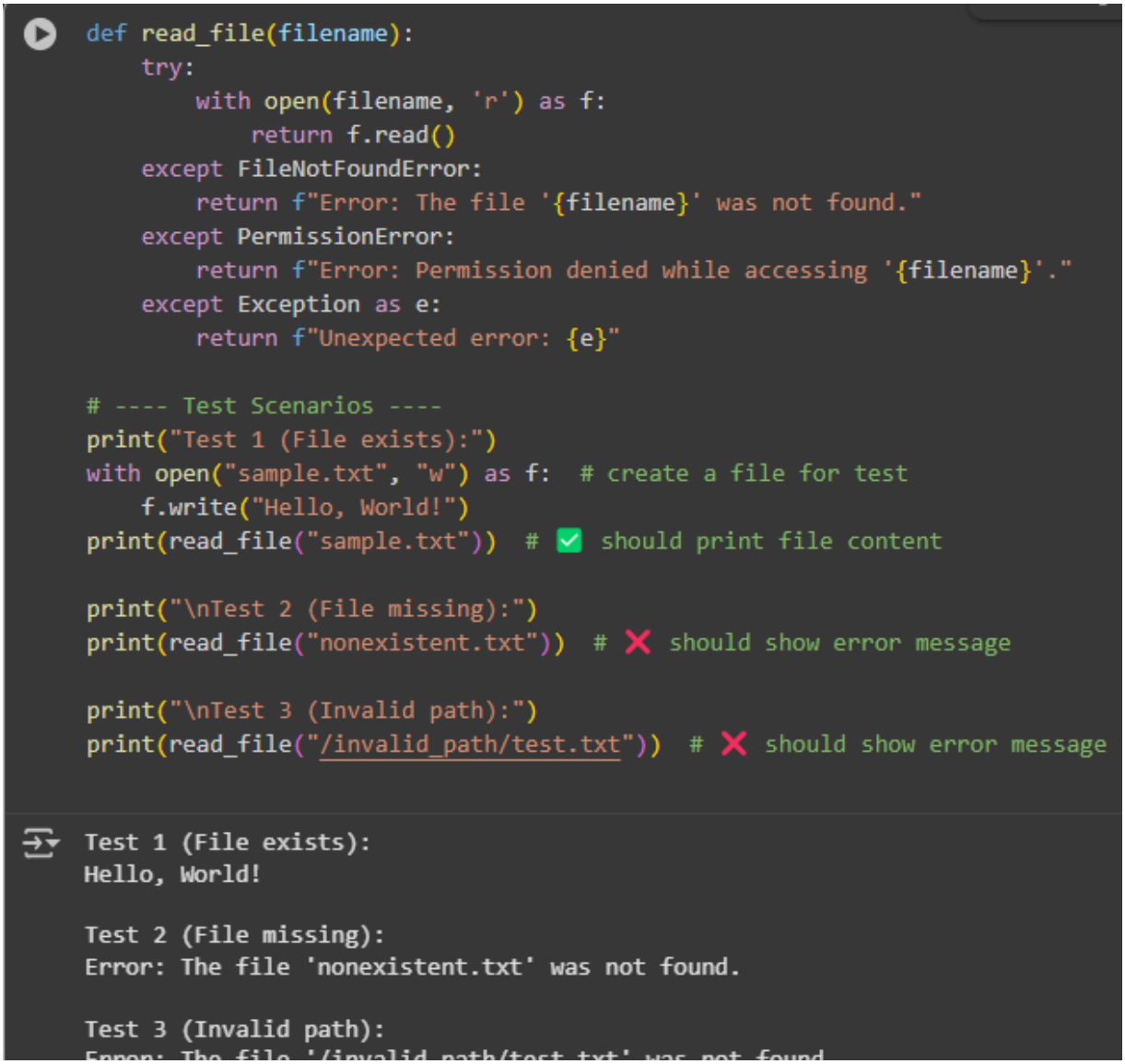
Requirements:

- Implement a try-except block suggested by AI.
- Add a user- friendly error message.
- Test with at least 3 scenarios: file exists, file missing, invalid path.

Expected Output #3:

- Safe file handling with exception management.

Ans:-



Task Description#4 (AttributeError – Calling a Non-Existed Method)
Task: Give a class where a non-existed 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.
```

Requirements:

- Student must analyse whether to define the missing method or correct the method call.
- Use 3 assert tests to confirm the corrected class works.

Expected output#4:

- Corrected class with clear AI explanation.

Ans:-

```python
class Car:
    def start(self):
        return "Car started"

    def drive(self):  # ✅ Added missing method
        return "Car is driving"

# Create object
my_car = Car()

# Correct method calls
print(my_car.start())   # Output: Car started
print(my_car.drive())   # Output: Car is driving

# ---- Assert Tests ----
assert my_car.start() == "Car started"
assert my_car.drive() == "Car is driving"
assert isinstance(my_car, Car)
```

explanation:-Now we must decide:

- Either define a drive() method, OR
- Correct the call to start().

Since the task is ambiguous, let's assume the intention is that the car should **start driving**. So the missing method **drive()** should be defined.

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 integers

```
def add_five(value):
    return value+5
print(add_five("10"))
```

Requirements:

- Ask AI for two solutions: type casting and string concatenation.
- Validate with 3 assert test cases.

Expected Output#5:

- Corrected code that runs successfully for multiple inputs.

Ans:-

 # Bug:
TypeError due to mixing string and integer.

🔹 AI Fix Explanation

The error occurs because Python cannot directly add a **string** ("10") to an **integer** (5).
We have two possible solutions:

1. **Type Casting (convert to integer before addition).**
2. **String Concatenation (convert to string before joining).**

```
Copy code
# ---- Solution 1: Type Casting ----
def add_five_int(value):
    return int(value) + 5   # convert to integer

print("Type Casting Solution:", add_five_int("10"))  # ✅ Output: 15

# ---- Solution 2: String Concatenation ----
def add_five_str(value):
    return str(value) + "5"  # convert to string

print("String Concatenation Solution:", add_five_str("10"))  # ✅ Output: "105"

# ---- Assert Test Cases ----
# Type Casting solution
assert add_five_int("10") == 15
assert add_five_int(20) == 25
assert add_five_int(0) == 5

# String Concatenation solution
assert add_five_str("10") == "105"
assert add_five_str("Hello") == "Hello5"
assert add_five_str(7) == "75"
```