Assignment-7.1

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Batch-43

Task Description #1 (Syntax Errors – Missing Parentheses in Print Statement)

Task: 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:

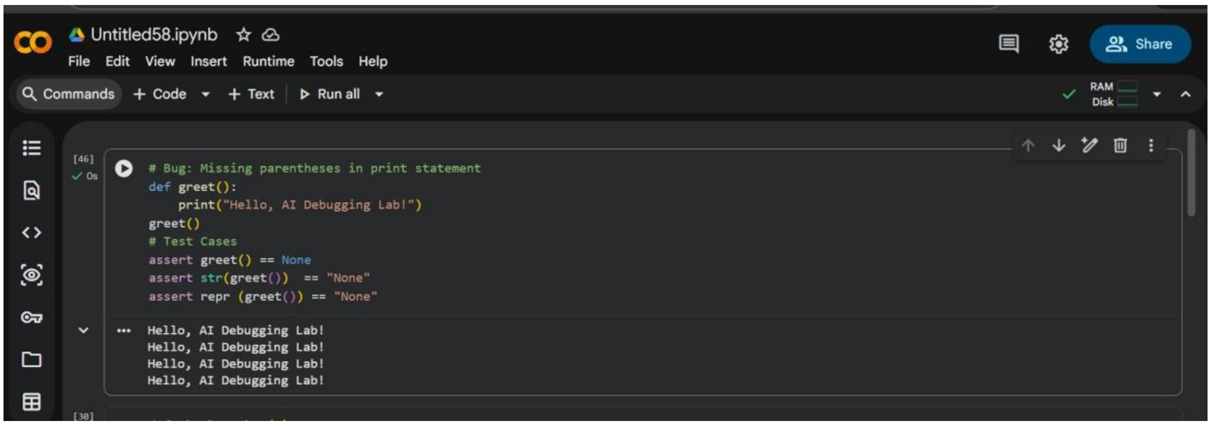
• Run the given code to observe the error.

• Apply AI suggestions to correct the syntax.

• Use at least 3 assert test cases to confirm the corrected code works.

Expected Output #1:

• Corrected code with proper syntax and AI explanation.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```
[46]
# Bug: Missing parentheses in print statement
def greet():
    print("Hello, AI Debugging Lab!")
greet()
# Test Cases
assert greet() == None
assert str(greet())  == "None"
assert repr (greet()) == "None"
```

```
Hello, AI Debugging Lab!
Hello, AI Debugging Lab!
Hello, AI Debugging Lab!
Hello, AI Debugging Lab!
```

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"

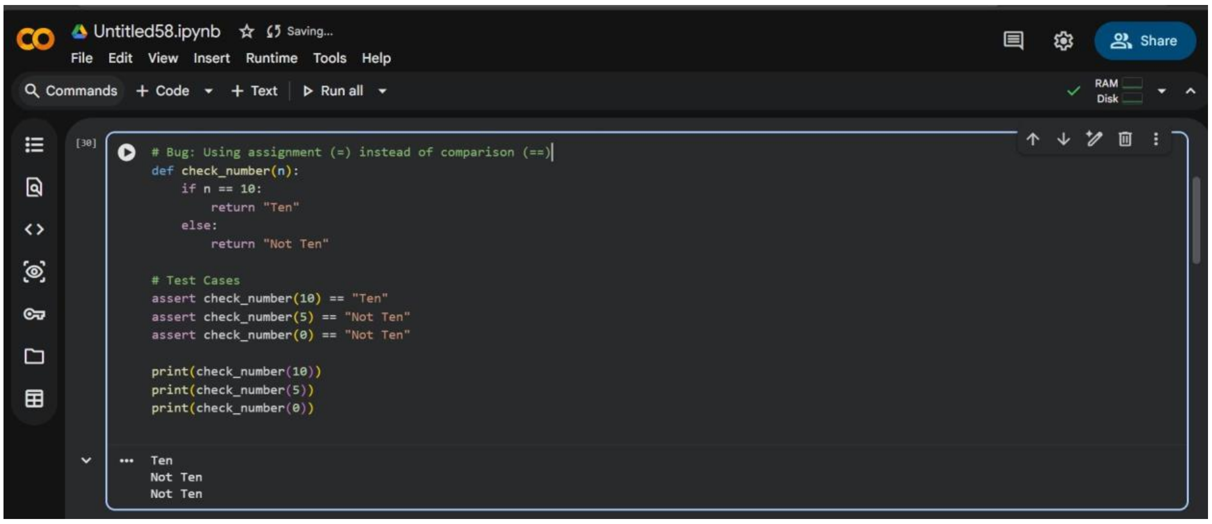
Requirements:

• Ask AI to explain why this causes a bug.

• Correct the code and verify with 3 assert test cases.

Expected Output #2:

• Corrected code using == with explanation and successful test execution.



```
# Bug: Using assignment (=) instead of comparison (==)
def check_number(n):
    if n == 10:
        return "Ten"
    else:
        return "Not Ten"

# Test Cases
assert check_number(10) == "Ten"
assert check_number(5) == "Not Ten"
assert check_number(0) == "Not Ten"

print(check_number(10))
print(check_number(5))
print(check_number(0))
```

```
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"))

Requirements:

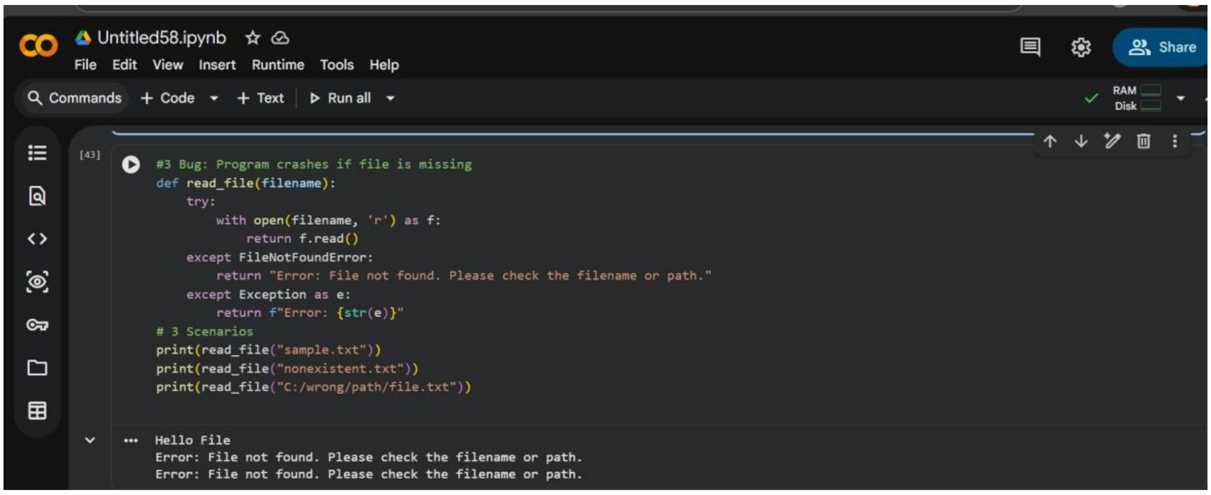
• Implement a try-except block suggested by AI.

• 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.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```
[43]
#3 Bug: Program crashes if file is missing
def read_file(filename):
    try:
        with open(filename, 'r') as f:
            return f.read()
    except FileNotFoundError:
        return "Error: File not found. Please check the filename or path."
    except Exception as e:
        return f"Error: {str(e)}"
# 3 Scenarios
print(read_file("sample.txt"))
print(read_file("nonexistent.txt"))
print(read_file("C:/wrong/path/file.txt"))
```

```
Hello File
Error: File not found. Please check the filename or path.
Error: File not found. Please check the filename or path.
```

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()

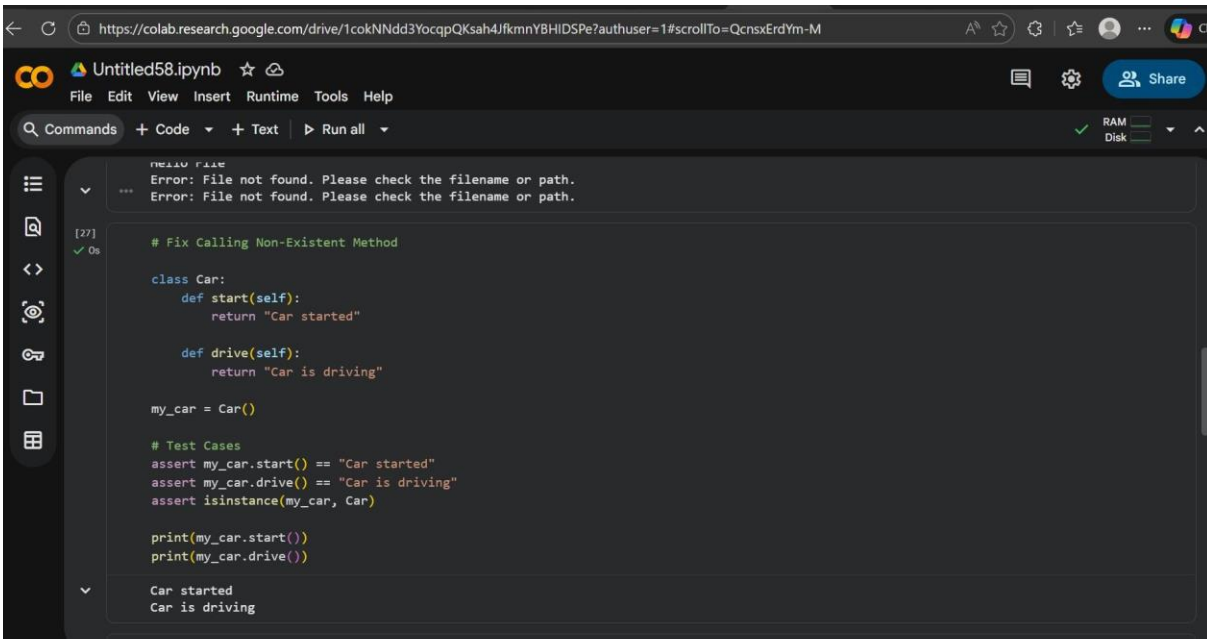
print(my_car.drive()) # drive() is not defined

Requirements:

- Students must analyze 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.



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```
Error: File not found. Please check the filename or path.
Error: File not found. Please check the filename or path.
```

```python
# Fix Calling Non-Existent Method

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

    def drive(self):
        return "Car is driving"

my_car = Car()

# Test Cases
assert my_car.start() == "Car started"
assert my_car.drive() == "Car is driving"
assert isinstance(my_car, Car)

print(my_car.start())
print(my_car.drive())
```

```
Car started
Car is driving
```

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"))

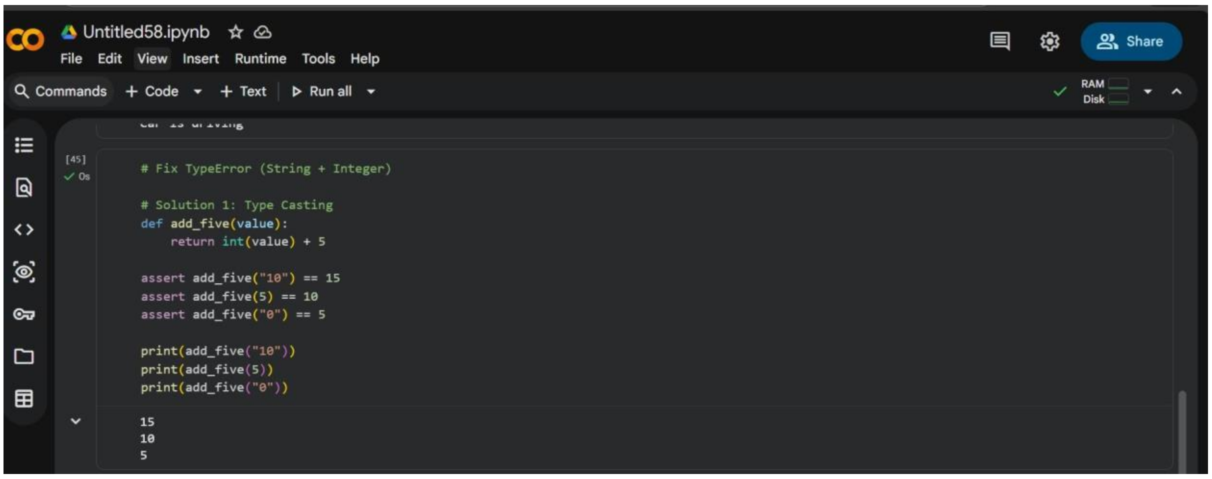
Requirements:

• 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.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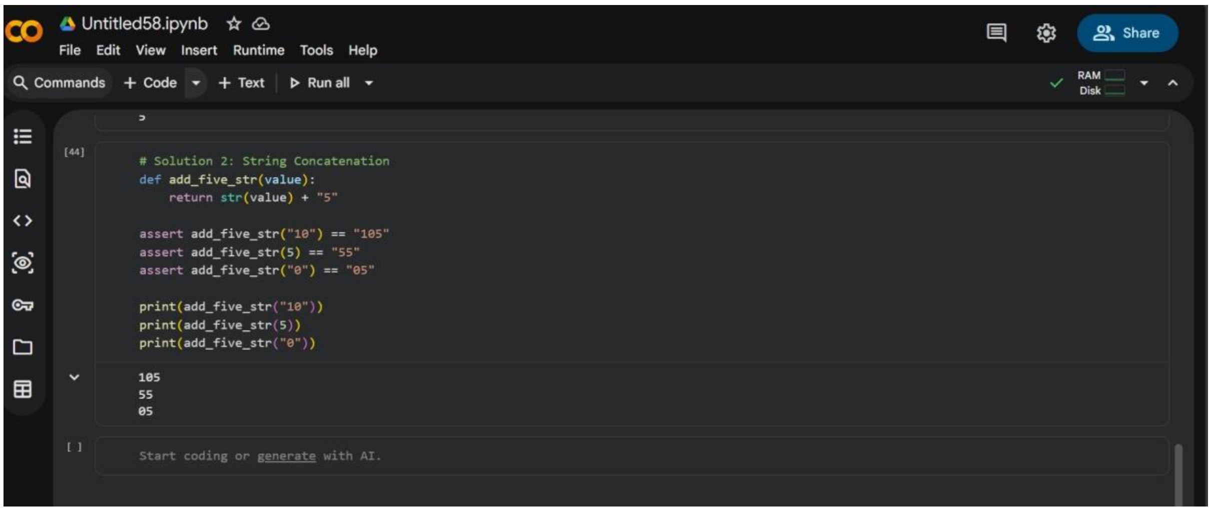
```
# Fix TypeError (String + Integer)

# Solution 1: Type Casting
def add_five(value):
    return int(value) + 5

assert add_five("10") == 15
assert add_five(5) == 10
assert add_five("0") == 5

print(add_five("10"))
print(add_five(5))
print(add_five("0"))
```

```
15
10
5
```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```
# Solution 2: String Concatenation
def add_five_str(value):
    return str(value) + "5"

assert add_five_str("10") == "105"
assert add_five_str(5) == "55"
assert add_five_str("0") == "05"

print(add_five_str("10"))
print(add_five_str(5))
print(add_five_str("0"))
```

```
105
55
05
```

Start coding or generate with AI.