SCHOOL OF COMPUTER SCIENCE AND ARTIFICIAL INTELLIGENCE		DEPARTMENT OF COMPUTER SCIENCE ENGINEERING	
Program Name: B. Tech		**Assignment Type: Lab**	**Academic Year:**2025-2026
Course Coordinator Name		Dr. Rishabh Mittal	
CourseCode	23CS002PC304	**Course Title**	AI Assisted Coding
Year/Sem	III/II	**Regulation**	R23
Date and Day of Assignment	**Week4 – Monday**	**Batch**	23CSBTB47B
Name	Mittapalli Yashaswini	**Hall Ticket No**	2303A54049
Assignment Number: 7.1			

Q.No.	Question	*Expected Time to complete*
1	**Lab 7: Error Debugging with AI: Systematic approaches to finding and fixing bugs** Lab Objectives: • To identify and correct syntax, logic, and runtime errors in Python programs using AI tools. • To understand common programming bugs and AI-assisted debugging suggestions. • To evaluate how AI explains, detects, and fixes different types of coding errors. • To build confidence in using AI to perform structured debugging practices. Lab Outcomes (LOs): After completing this lab, students will be able to: • Use AI tools to detect and correct syntax, logic, and runtime errors. • Interpret AI-suggested bug fixes and explanations. • Apply systematic debugging strategies supported by AI-generated insights. • Refactor buggy code using responsible and reliable programming patterns.	Week4 - Monday

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

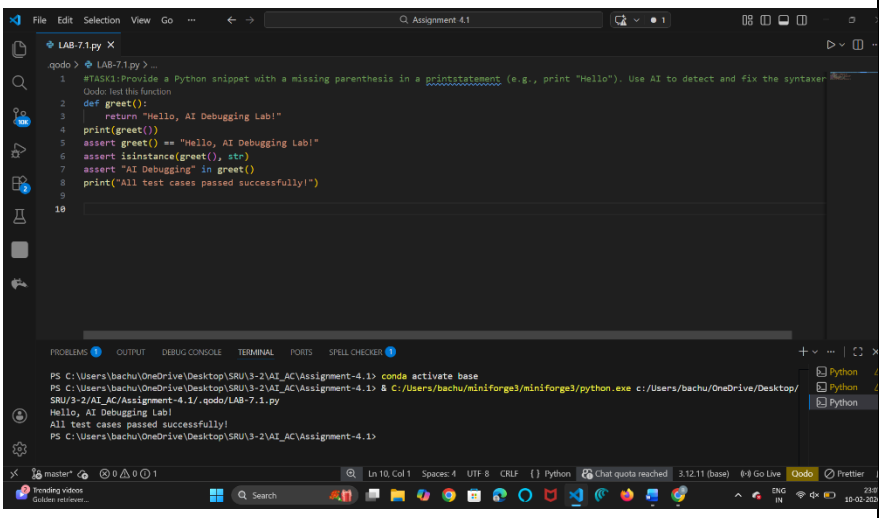
```
def greet():
    print "Hello, AI Debugging Lab!"
greet()
```

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.



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 (==)

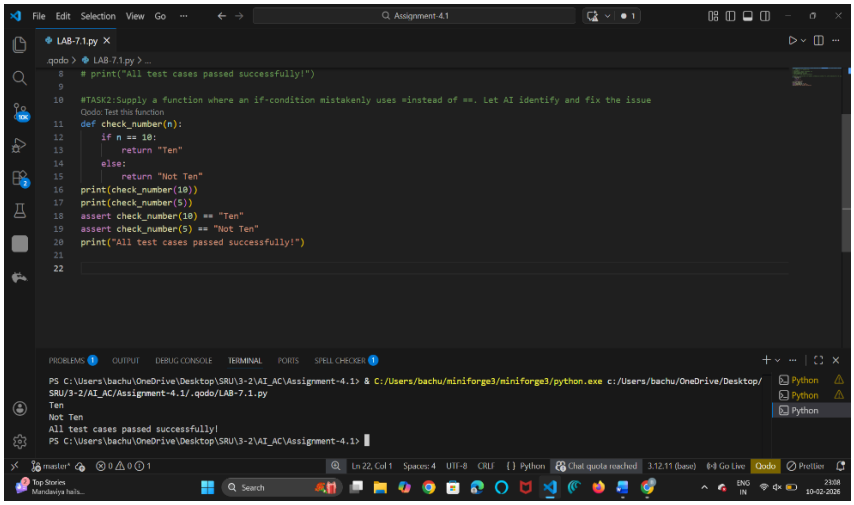
```
def check_number(n):
    if n = 10:
        return "Ten"
    else:
        return "Not Ten"
```

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.



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:

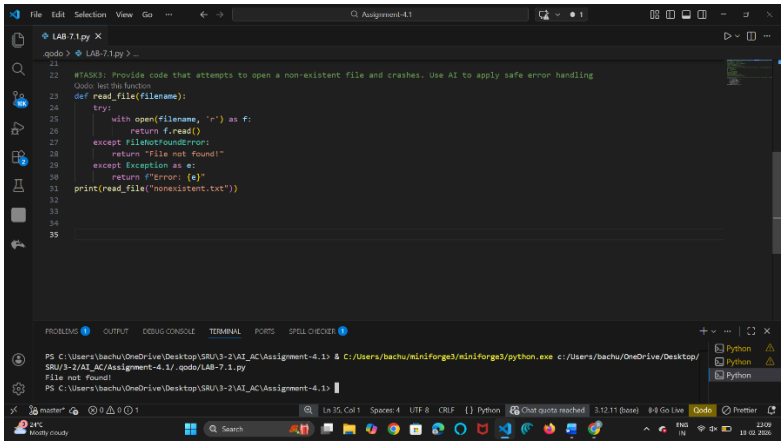
- Implement a try-except block suggested by AI.

- 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.

```
def read_file(filename):
    try:
        with open(filename, 'r') as f:
            return f.read()
    except FileNotFoundError:
        return "File not found!"
    except Exception as e:
        return f"Error: {e}"
print(read_file("nonexistent.txt"))
```



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.

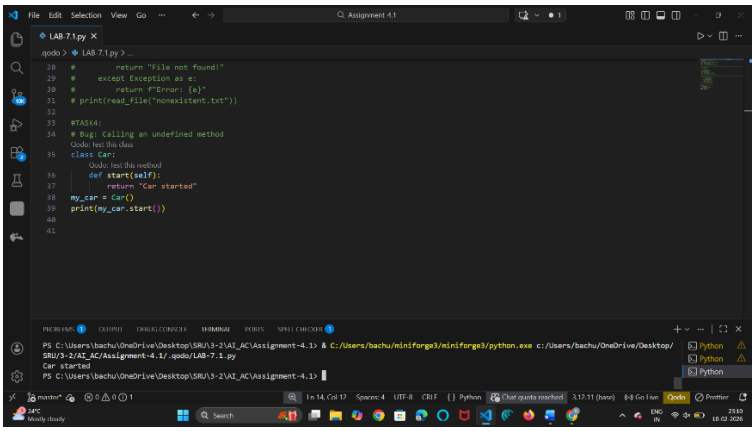
```
# Bug: Calling an undefined method
    class Car:
        def start(self):
            return "Car started"
    my_car = Car()
    print(my_car.drive())  # drive() is not defined
```

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.



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.

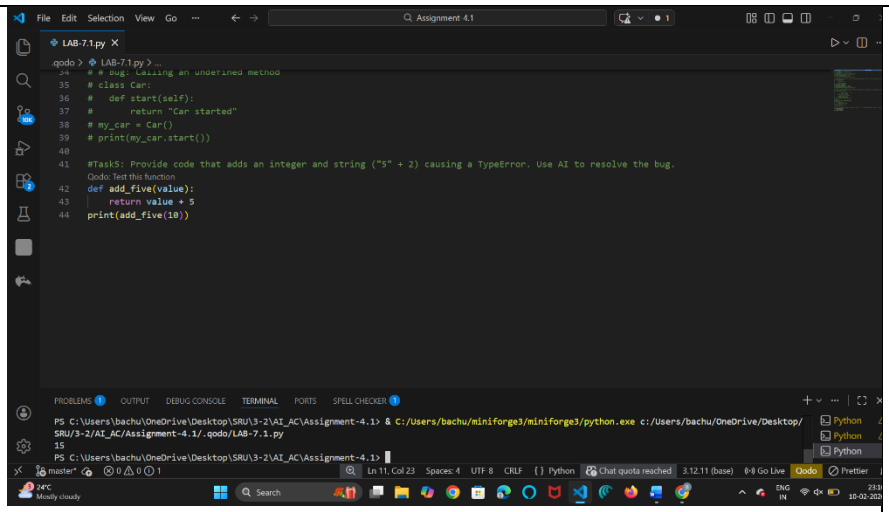
```
# Bug: TypeError due to mixing string and integer
    def add_five(value):
        return value + 5
    print(add_five("10"))
```

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.


File Edit Selection View Go
Assignment 4.1
LAB-7.1.py
qodo > LAB-7.1.py > ...
bug: Calling an undefined method
class Car:
def start(self):
return "Car started"
my_car = Car()
print(my_car.start())
#Task5: Provide code that adds an integer and string ("5" + 2) causing a TypeError. Use AI to resolve the bug.
Qodo: Test this function
def add_five(value):
 return value + 5
print(add_five(10))
PROBLEMS 1 OUTPUT DEBUG CONSOLE TERMINAL PORTS SPELL CHECKER 1
PS C:\Users\bachu\OneDrive\Desktop\SRU\3-2\AI_AC\Assignment-4.1> & C:/Users/bachu/miniforge3/miniforge3/python.exe c:/Users/bachu/OneDrive/Desktop/SRU/3-2/AI_AC/Assignment-4.1/.qodo/LAB-7.1.py
15
PS C:\Users\bachu\OneDrive\Desktop\SRU\3-2\AI_AC\Assignment-4.1>
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