ASSIGNMENT – 7.3

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Task 1: Fixing Syntax Errors

Scenario

You are reviewing a Python program where a basic function definition contains a syntax error.

Requirements

Python

```
def add(a,b)
    return a + b
```

• Provide a Python function add(a, b) with a missing colon

• Use an AI tool to detect the syntax error

• Allow AI to correct the function definition

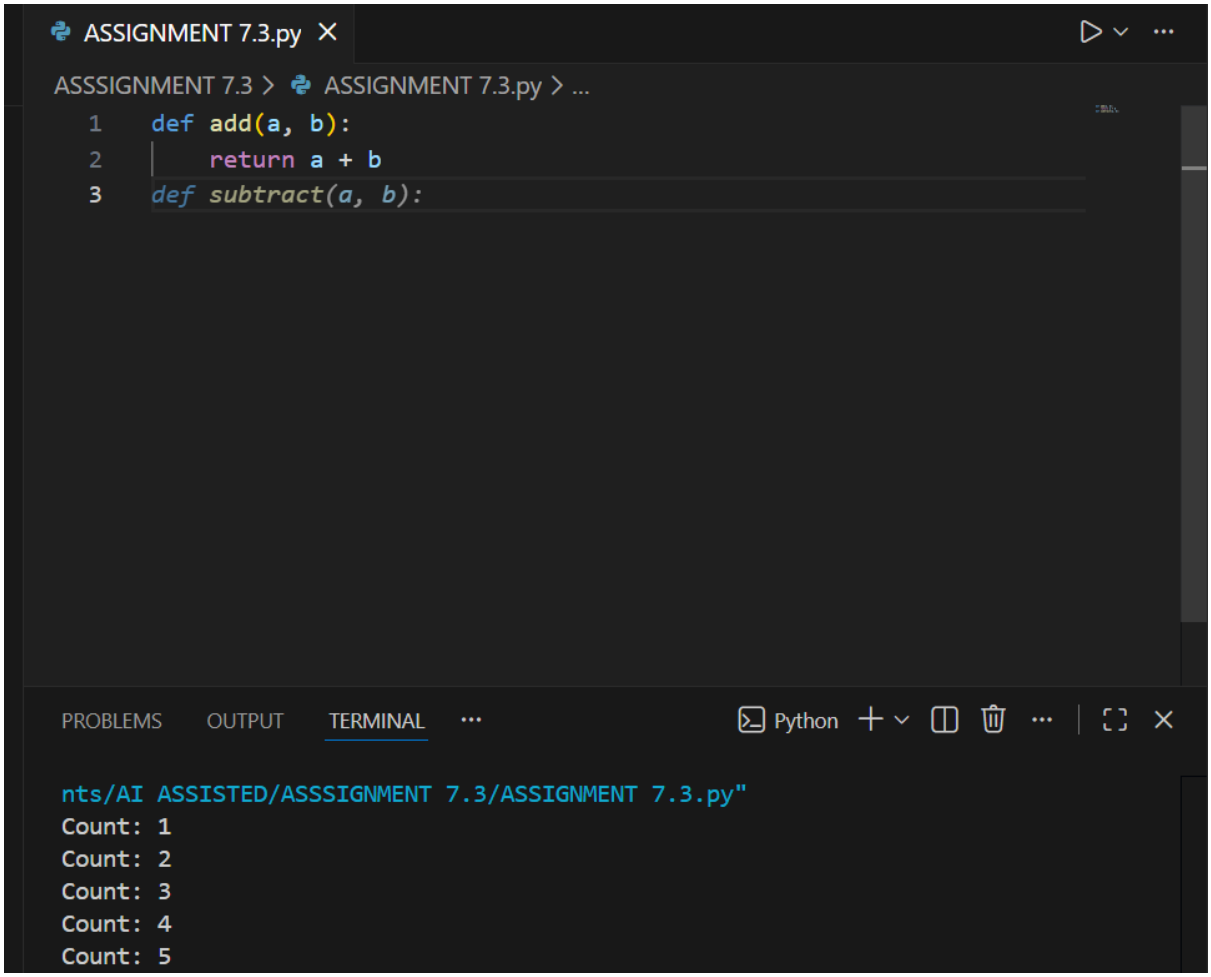
• Observe how AI explains the syntax issue

Expected Output

• Corrected function with proper syntax

• Syntax error resolved successfully

• AI-generated explanation of the fix.



2. Task 2: Debugging Logic Errors in Loops

Scenario

You are debugging a loop that runs infinitely due to a logical mistake.

Requirements

• Provide a loop with an increment or decrement error

• Use AI to identify the cause of infinite iteration

• Let AI fix the loop logic

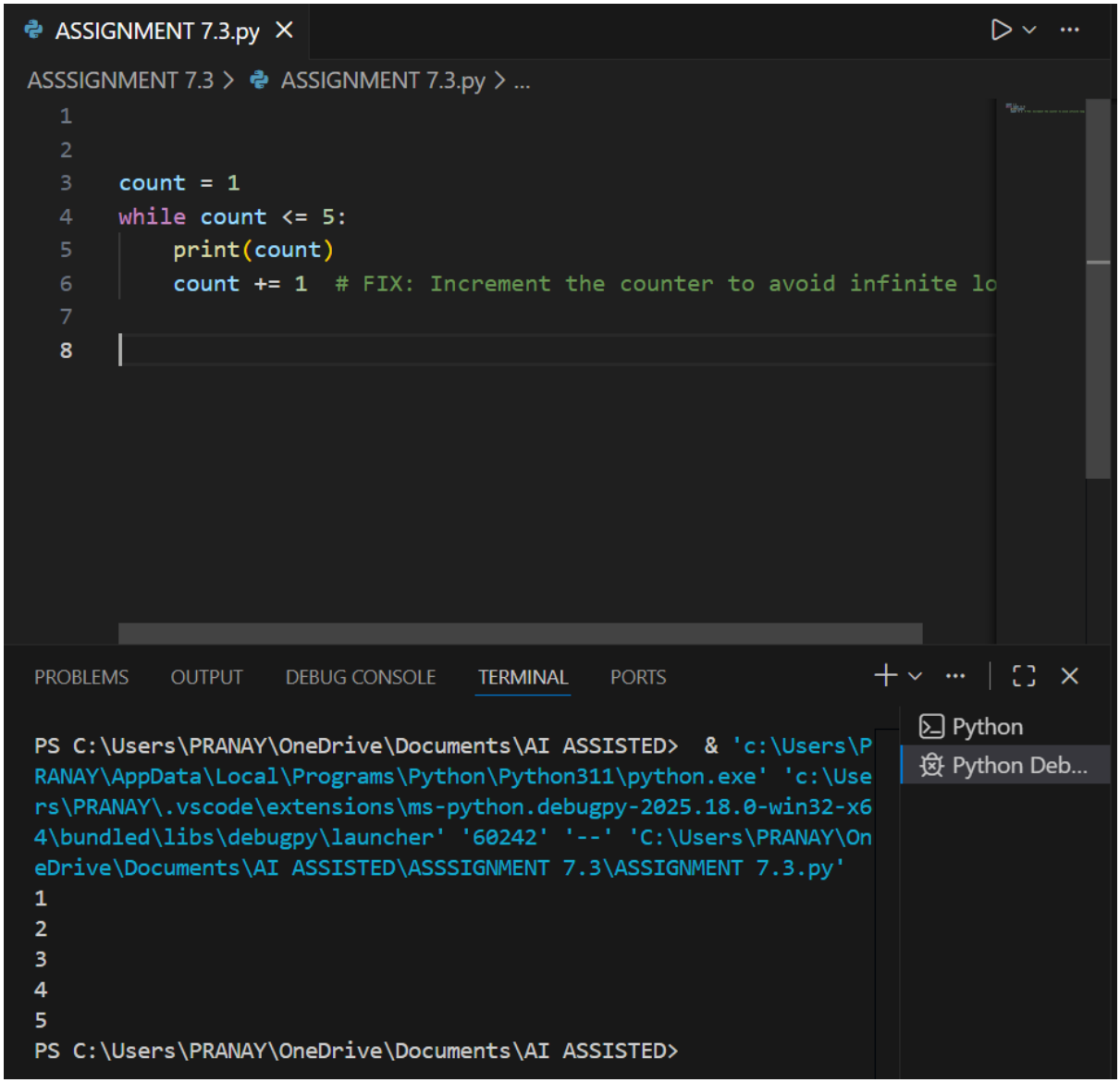
• Analyze the corrected loop behavior

Expected Output

• Infinite loop issue resolved

• Correct increment/decrement logic applied

• AI explanation of the logic error



Task 3: Handling Runtime Errors (Division by Zero)

Scenario

A Python function crashes during execution due to a division by zero error

Requirements

• Provide a function that performs division without validation

• Use AI to identify the runtime error

• Let AI add try-except blocks for safe execution

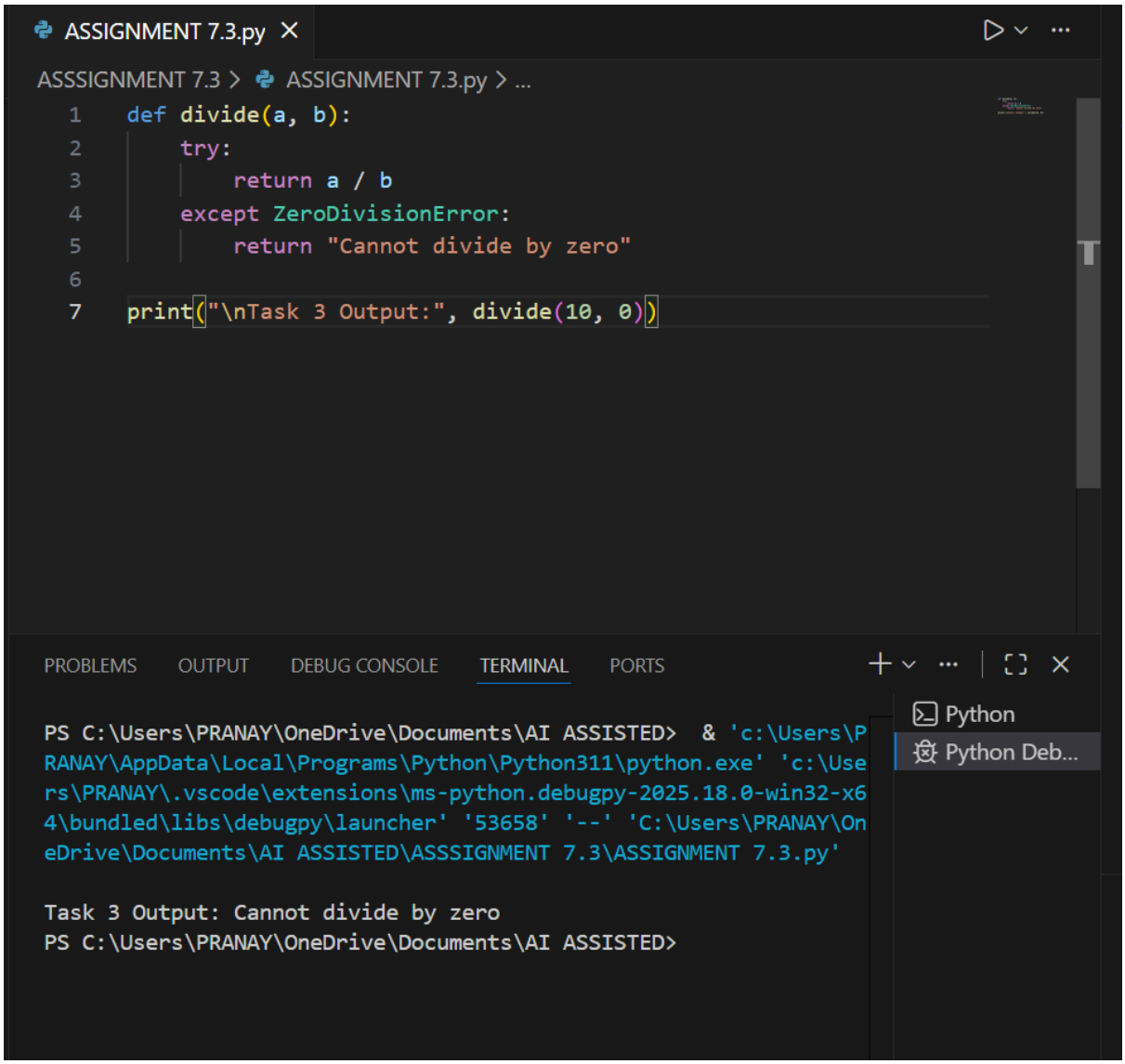
• Review AI's error-handling approach

Expected Output

• Function executes safely without crashing

• Division by zero handled using try-except

• Clear AI-generated explanation of runtime error handling



4. Scenario

You are given a faulty Python class where the constructor is incorrectly defined.

Requirements

• Provide a class definition with missing self-parameter

• Use AI to identify the issue in the __init__() method

• Allow AI to correct the class definition

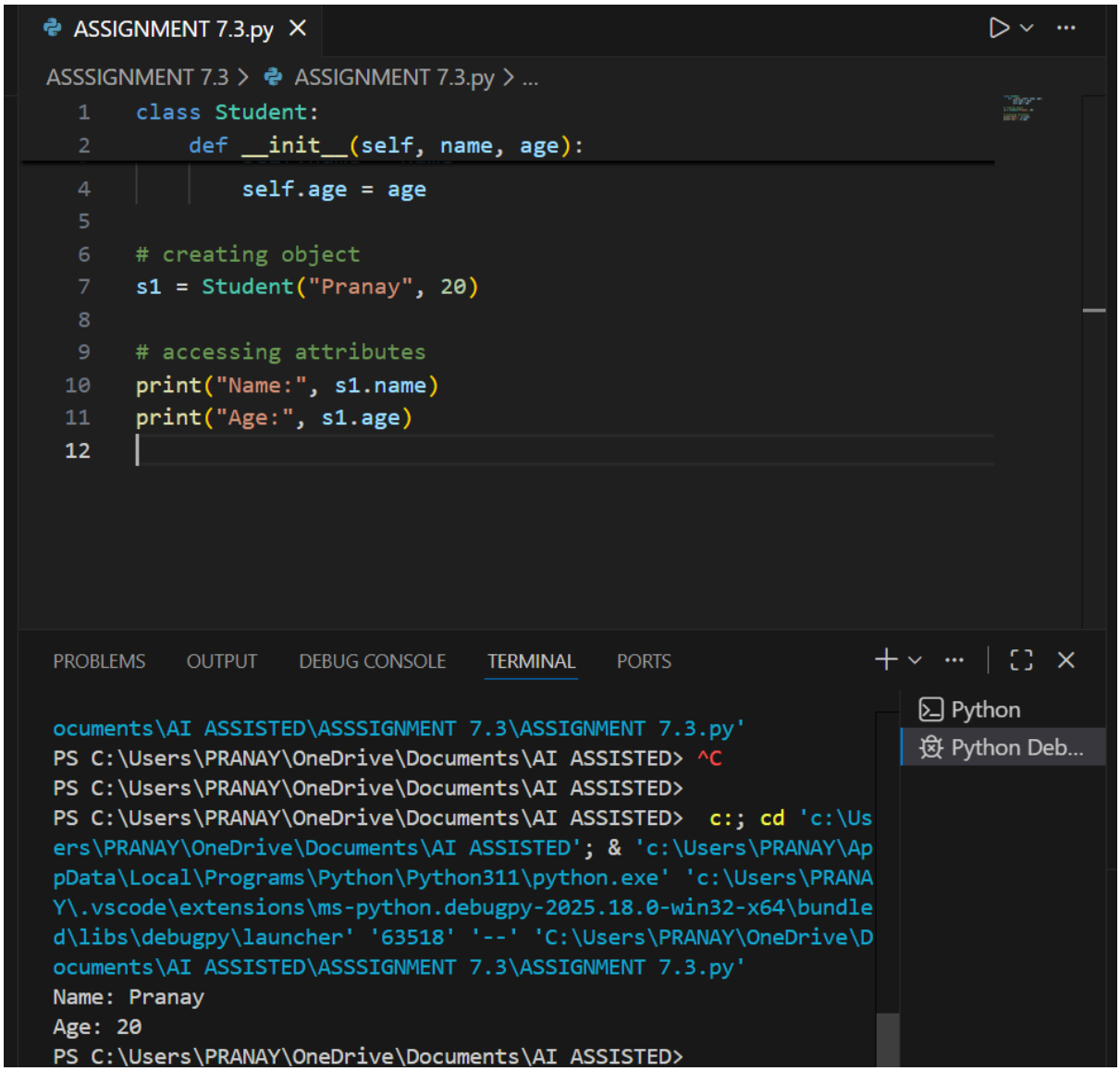
• Understand why self is required

Expected Output

• Corrected __init__() method

• Proper use of self in class definition

• AI explanation of object-oriented error



5. Task 5: Resolving Index Errors in Lists

Scenario

A program crashes when accessing an invalid index in a list.

Requirements

• Provide code that accesses an out-of-range list index

• Use AI to identify the Index Error

• Let AI suggest safe access methods

• Apply bounds checking or exception handling

Expected Output

• Index error resolved

Safe list access logic implemented

• AI suggestion using length checks or exception handling