2303A51504

BATCH-25

Assignment – 6.3

Task Description #1: Classes (Student Class)

Scenario

You are developing a simple student information management module.

Task

• Use an AI tool (GitHub Copilot / Cursor AI / Gemini) to complete a Student class.

• The class should include attributes such as name, roll number, and branch.

• Add a method display_details() to print student information.

• Execute the code and verify the output.

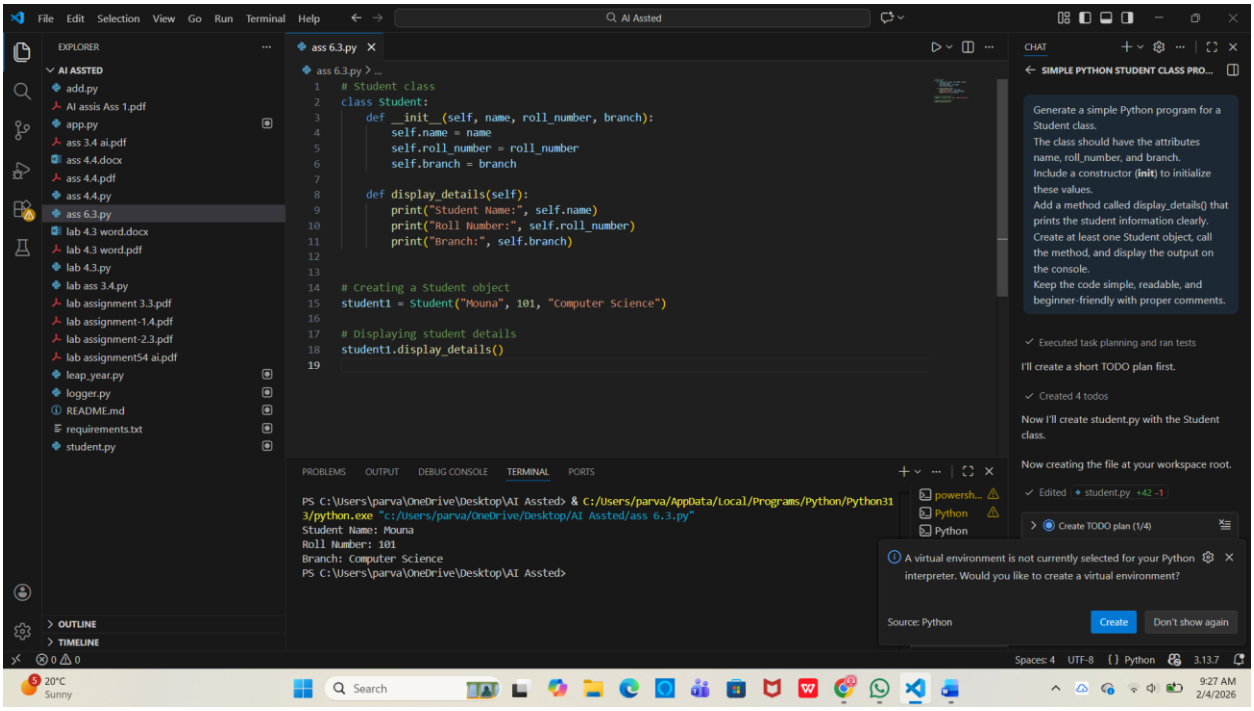
• Analyze the code generated by the AI tool for correctness and clarity.

Expected Output #1

• A Python class with a constructor (__init__) and a display_details() method.

• Sample object creation and output displayed on the console.

• Brief analysis of AI-generated code.



Task Description #2: Loops (Multiples of a Number)

Scenario

You are writing a utility function to display multiples of a given number.

Task

• Prompt the AI tool to generate a function that prints the first 10 multiples of a given number using a loop.

• Analyze the generated loop logic.

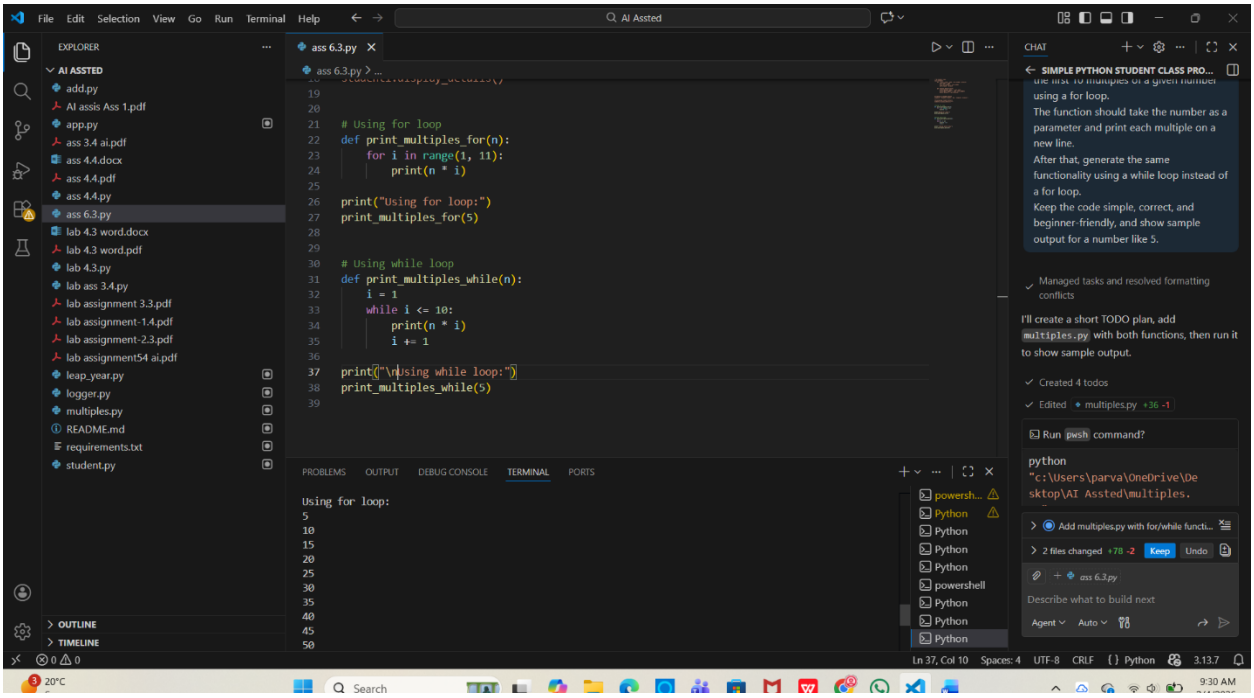
• Ask the AI to generate the same functionality using another controlled looping structure (e.g., while instead of for).

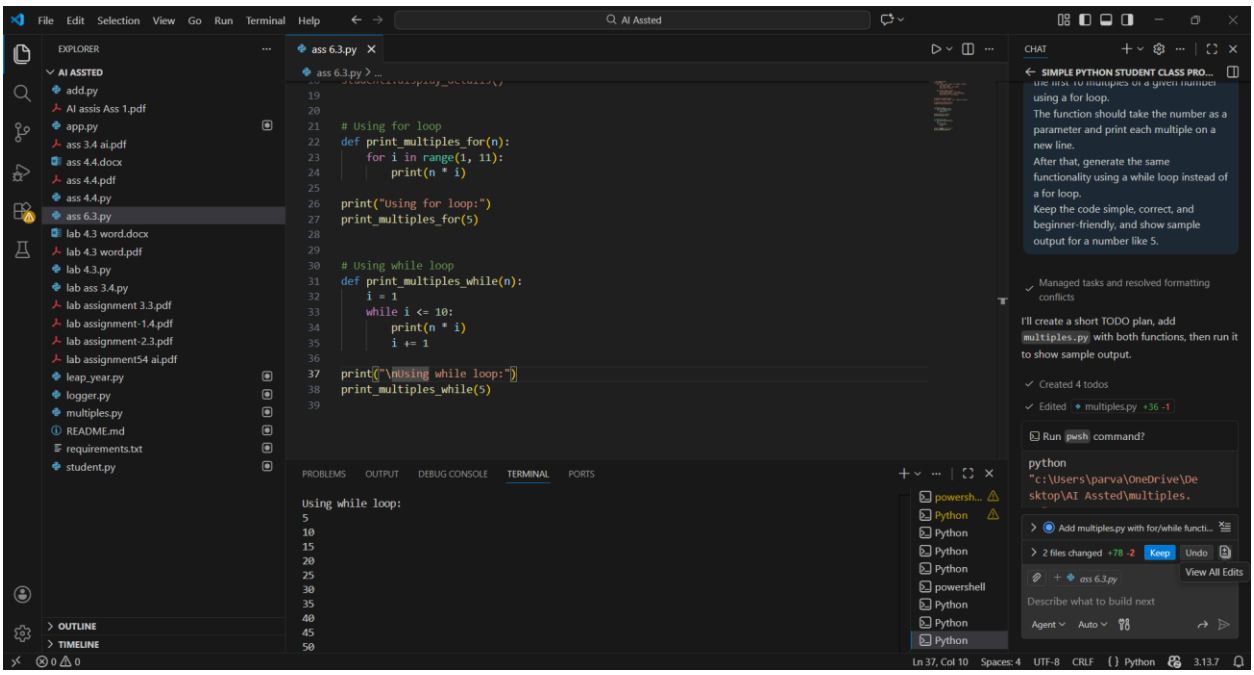
Expected Output #2

• Correct loop-based Python implementation.

• Output showing the first 10 multiples of a number.

• Comparison and analysis of different looping approaches.





Task Description #3: Conditional Statements (Age Classification)

Scenario

You are building a basic classification system based on age.

Task

• Ask the AI tool to generate nested if-elif-else conditional statements to classify age groups

(e.g., child, teenager, adult, senior).

• Analyze the generated conditions and logic.

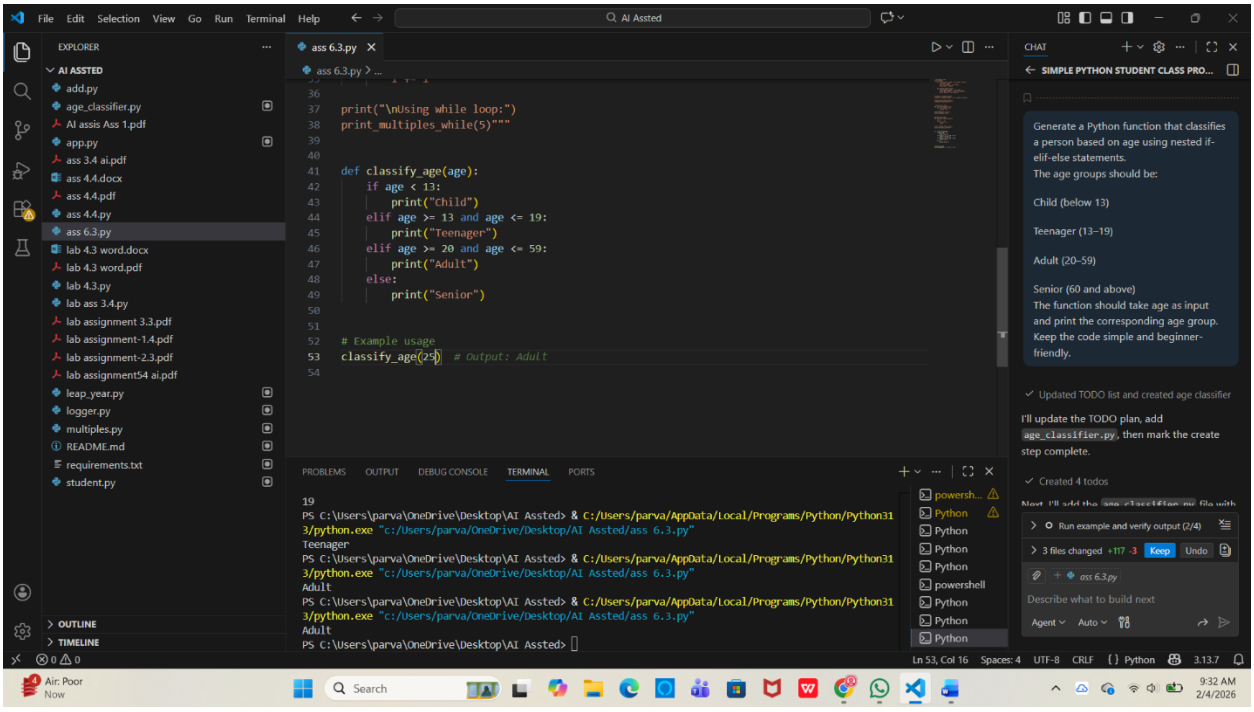
• Ask the AI to generate the same classification using alternative conditional structures (e.g., simplified conditions or dictionary-based logic).

Expected Output #3

• A Python function that classifies age into appropriate groups.

• Clear and correct conditional logic.

• Explanation of how the conditions work.



Task Description #4: For and While Loops (Sum of First n Numbers)

Scenario

You need to calculate the sum of the first n natural numbers.

Task

• Use AI assistance to generate a sum_to_n() function using a for loop.

• Analyze the generated code.

• Ask the AI to suggest an alternative implementation using a while loop or a mathematical

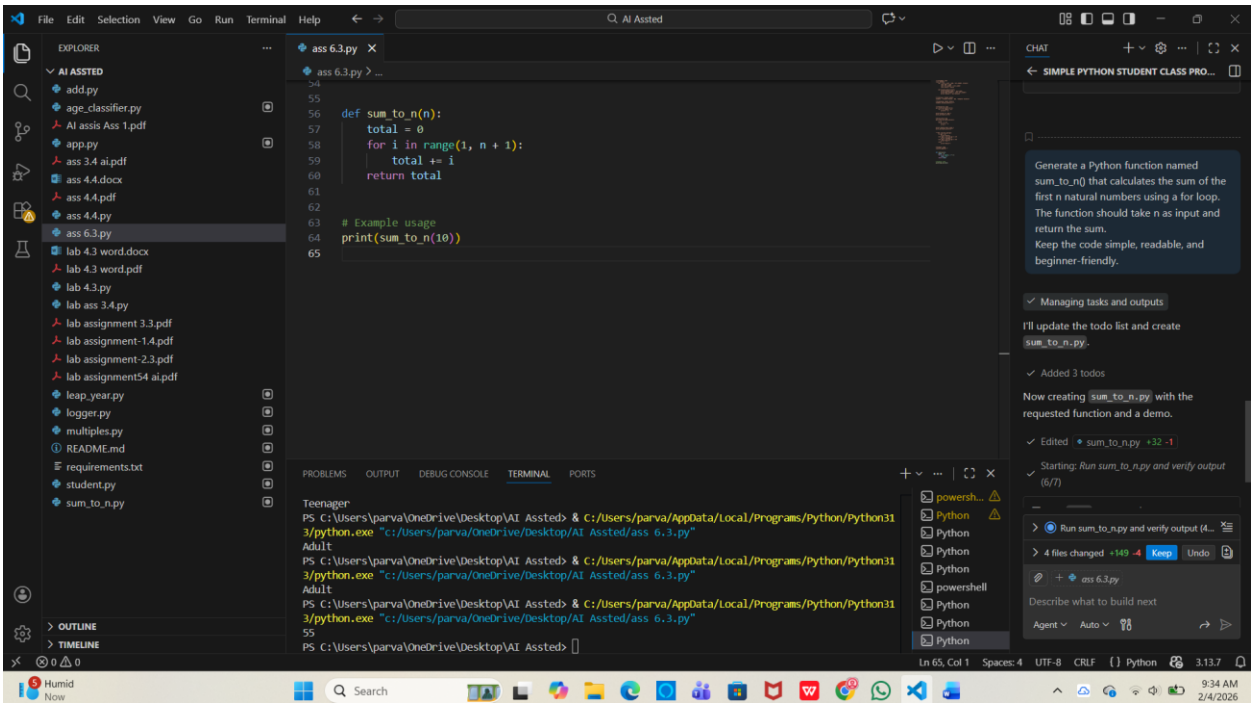
formula.

Expected Output #4

• Python function to compute the sum of first n numbers.

• Correct output for sample inputs.

• Explanation and comparison of different approaches.



ask Description #5: Classes (Bank Account Class)

Scenario

You are designing a basic banking application.

Task

• Use AI tools to generate a Bank Account class with methods such as deposit(), withdraw(), and check_balance().

• Analyze the AI-generated class structure and logic.

• Add meaningful comments and explain the working of the code.

Expected Output #5

• Complete Python Bank Account class.

- Demonstration of deposit and withdrawal operations with updated balance.
- Well-commented code with a clear explanation.