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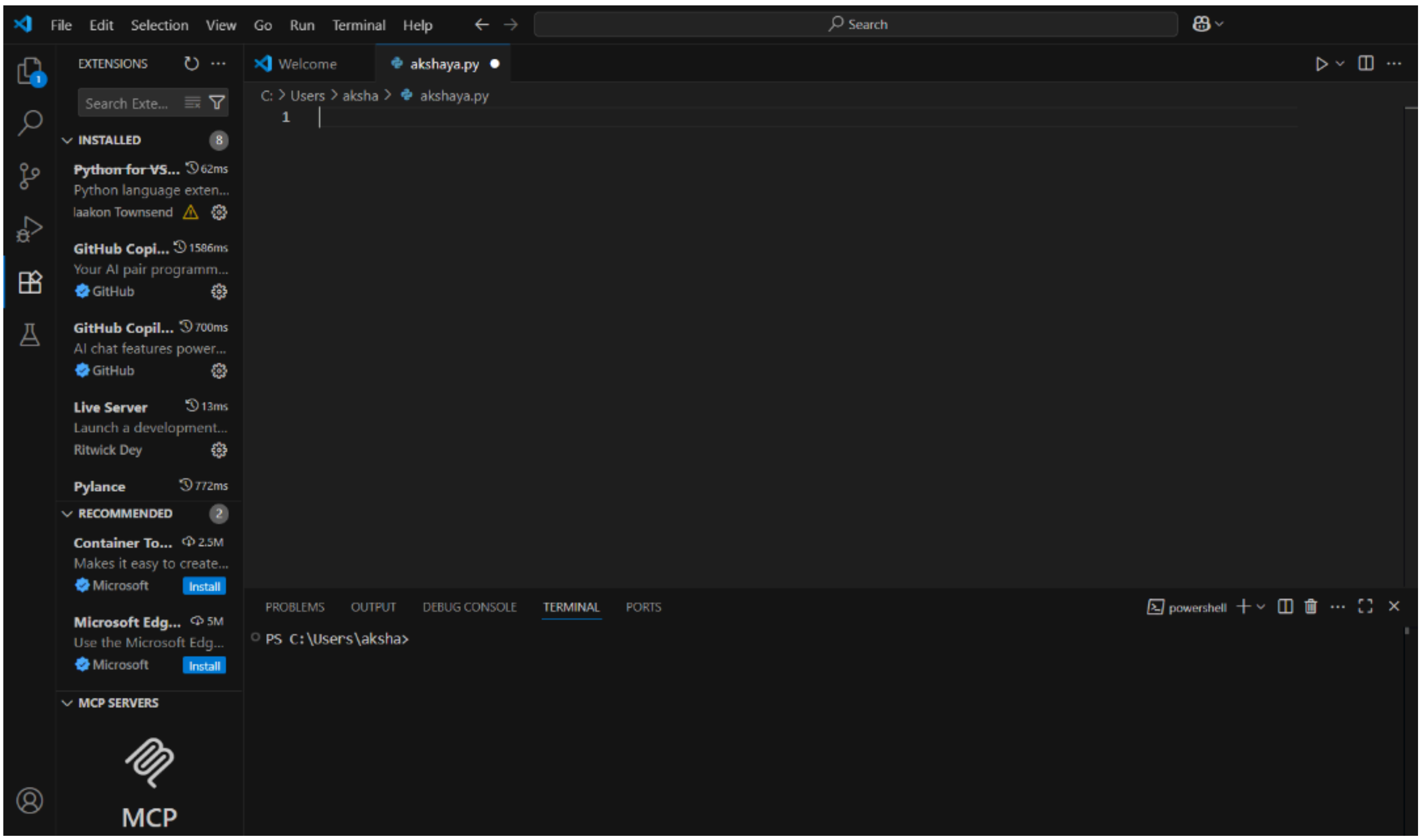
Batch : (DS)batch-3

Task 0

- Install and configure GitHub Copilot in VS Code. Take screenshots of each step.

Expected Output

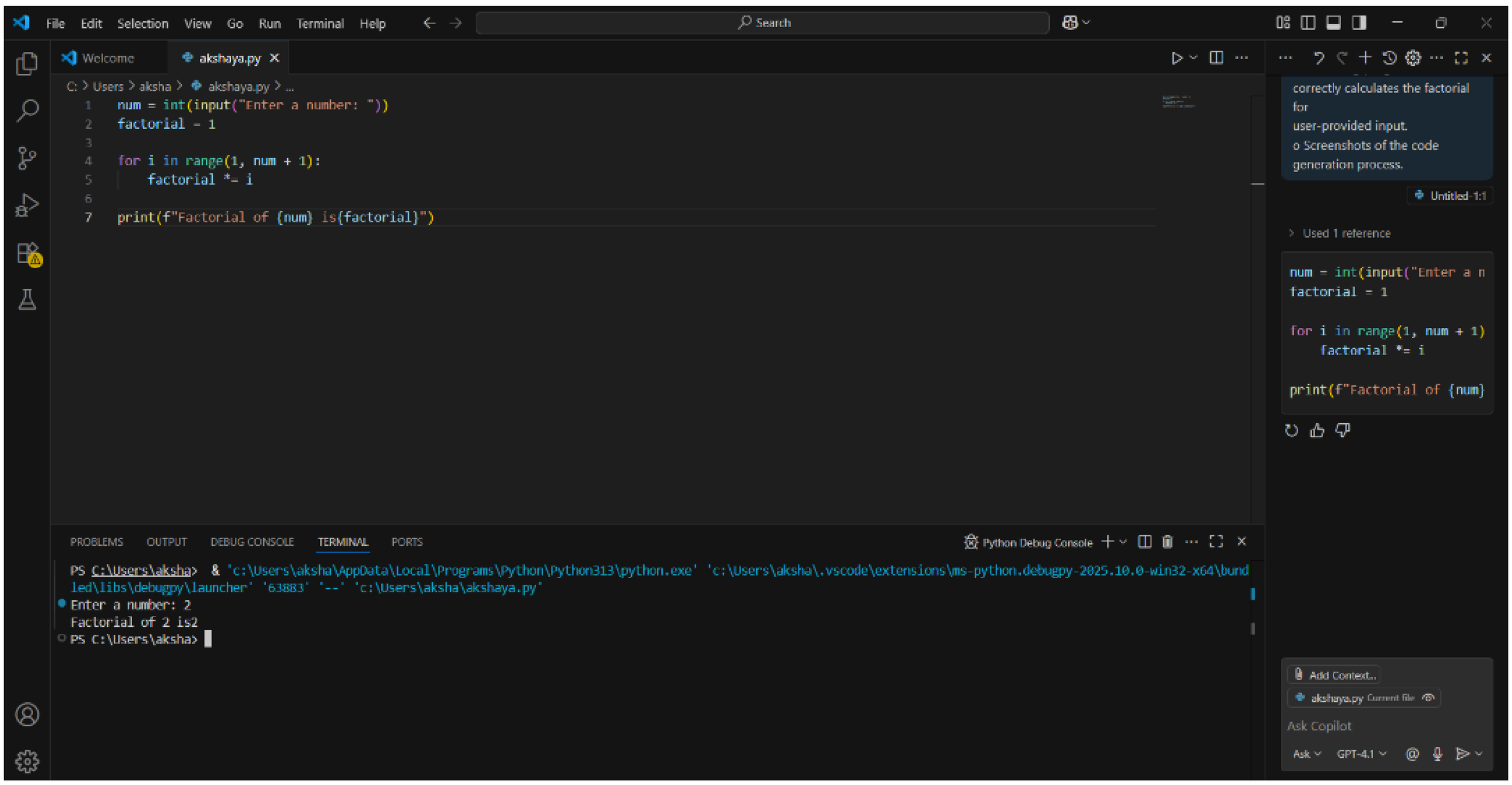
- Install and configure GitHub Copilot in VS Code. Take screenshots of each step.



Task 1: Factorial without Functions

- Description:
  Use GitHub Copilot to generate a Python program that calculates the factorial of a number without defining any functions (using loops directly in the main code).
- Expected Output:
  - A working program that correctly calculates the factorial for user-provided input.
  - Screenshots of the code generation process.

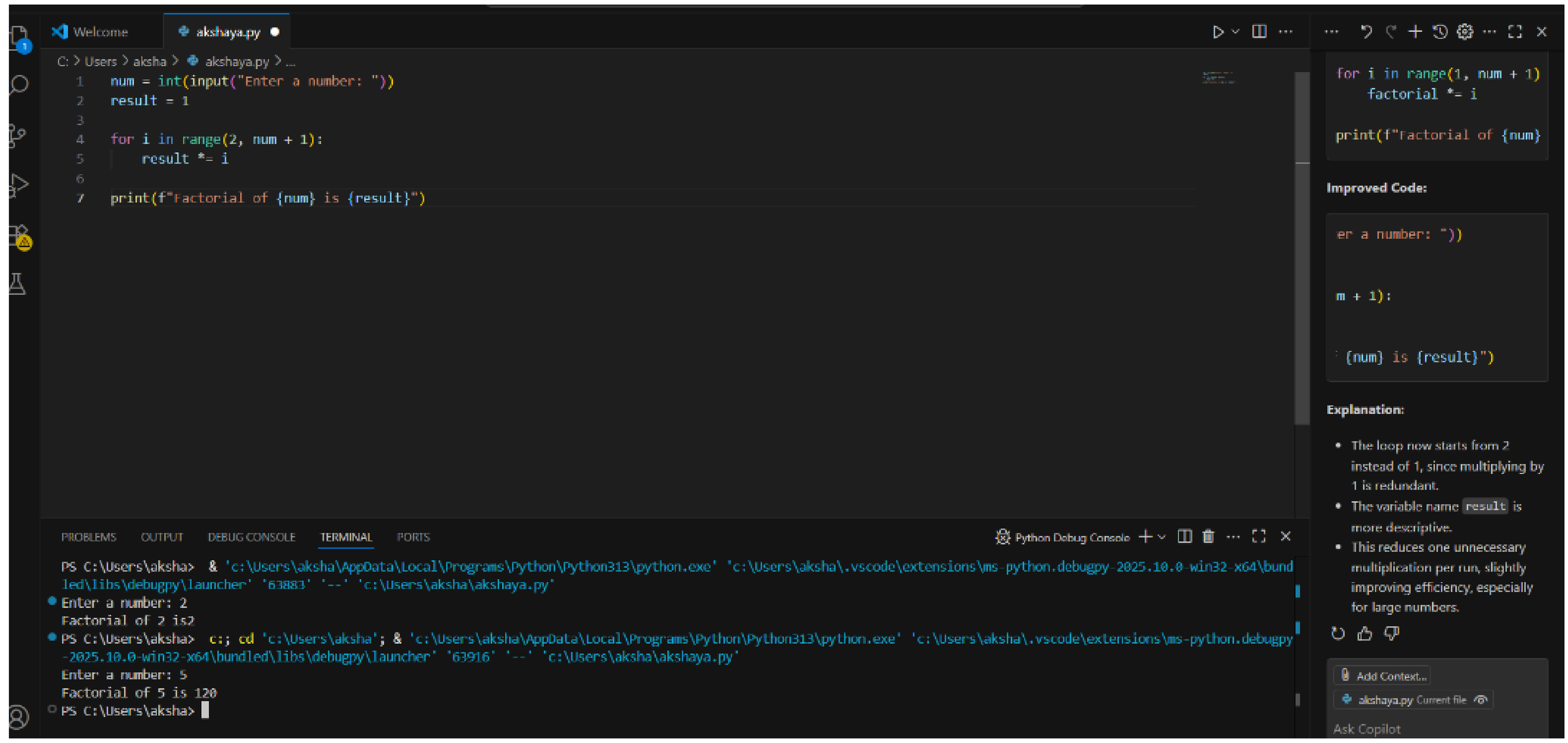
prompt : generate a python program which takes a number from the user and give the factorial as the output ,without using any functions



Task 2: Improving Efficiency

- Description:
  Examine the Copilot-generated code from Task 1 and demonstrate how its efficiency can be improved (e.g., removing unnecessary variables, optimizing loops).
- Expected Output:
  - Original and improved versions of the code.
  - Explanation of how the improvements enhance performance.

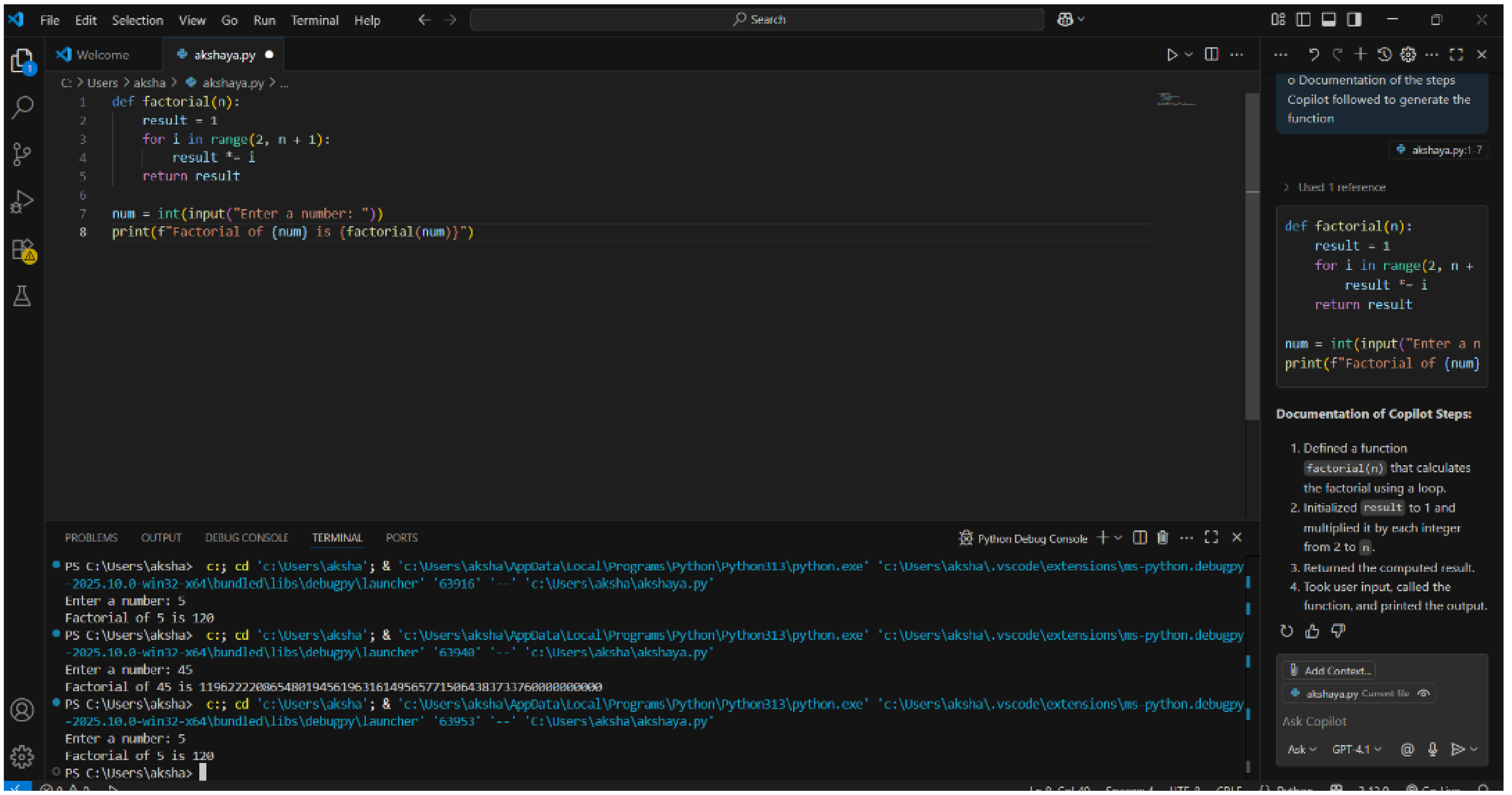
prompt : improve the efficiency from the previous code by removing unnecessary variables,optimizing loops etc...



Task 3:Factorial with Functions

- Description:
  Use GitHub Copilot to generate a Python program that calculates the factorial of a number using a user-defined function.
- Expected Output:
  - Correctly working factorial function with sample outputs.
  - Documentation of the steps Copilot followed to generate the function.

Prompt :generate a python program which take the input from the user and give factorial of it by taking an user defined function



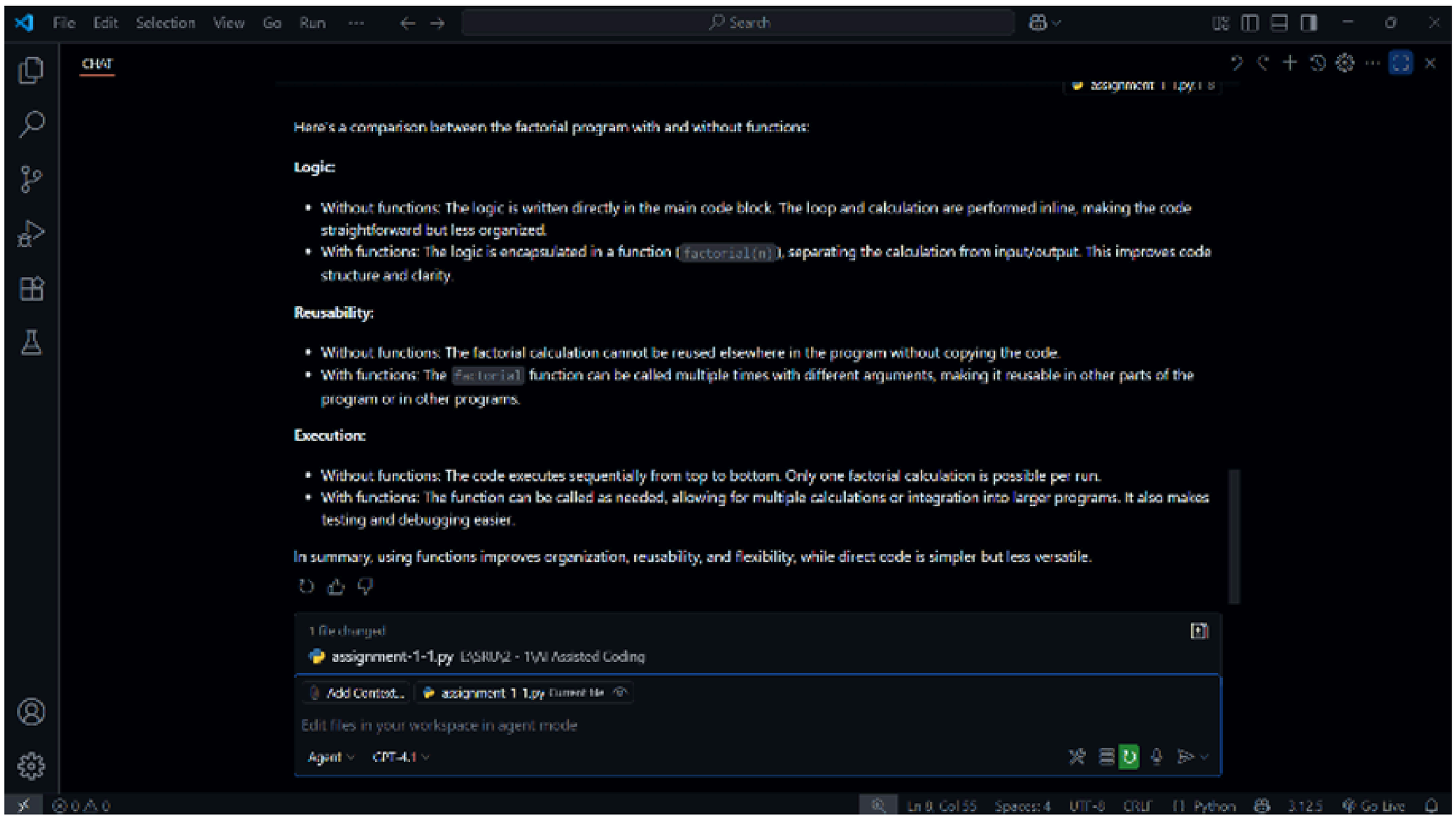
Task 4: Comparative Analysis – With vs Without Functions

- Description:
  Differentiate between the Copilot-generated factorial program with functions and without functions in terms of logic, reusability, and execution.
- Expected Output:

A comparison table or short report explaining the differences

Prompt:

- Differentiate between program with functions and without functions in terms of logic, reusability, and execution.



Task 5: Iterative vs Recursive Factorial

- Description:
  Prompt GitHub Copilot to generate both iterative and recursive versions of the factorial function.
- Expected Output:
  - Two correct implementations.
  - A documented comparison of logic, performance, and execution flow between iterative and recursive approaches.

- Prompt : generate both iterative and recursive versions of the factorial function