AI ASSISTED CODING

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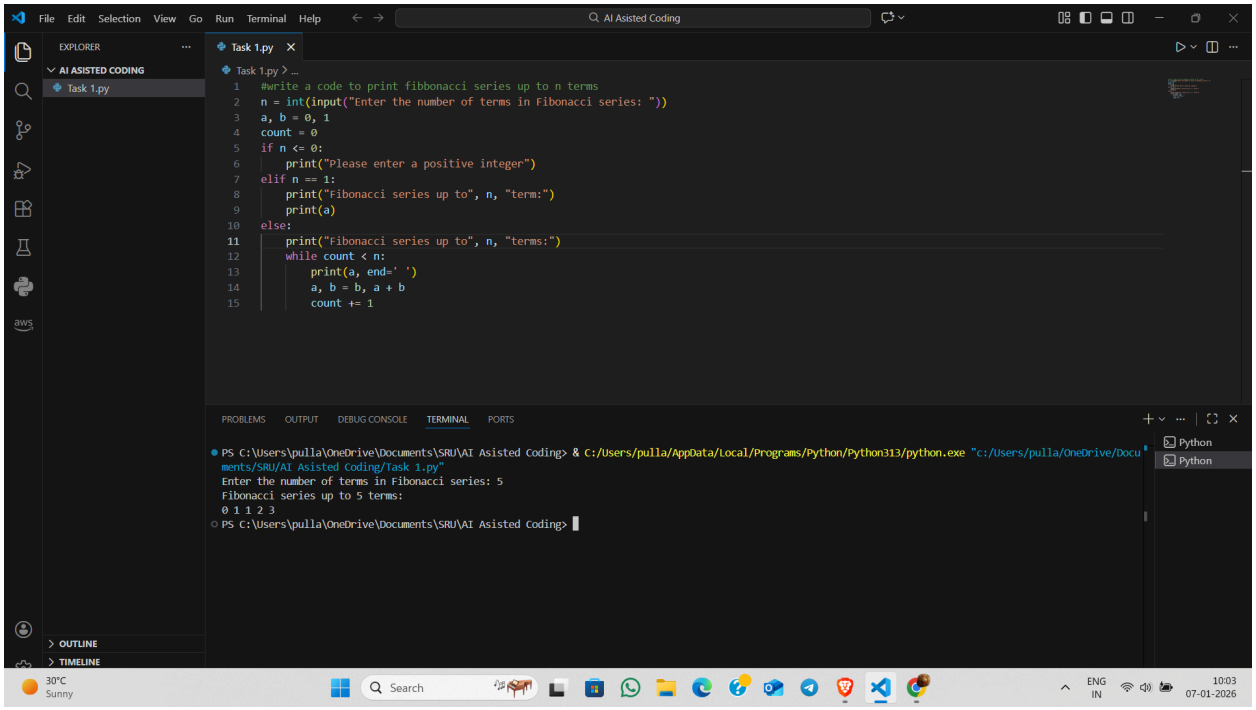
Batch: 37 **Assignment-1**

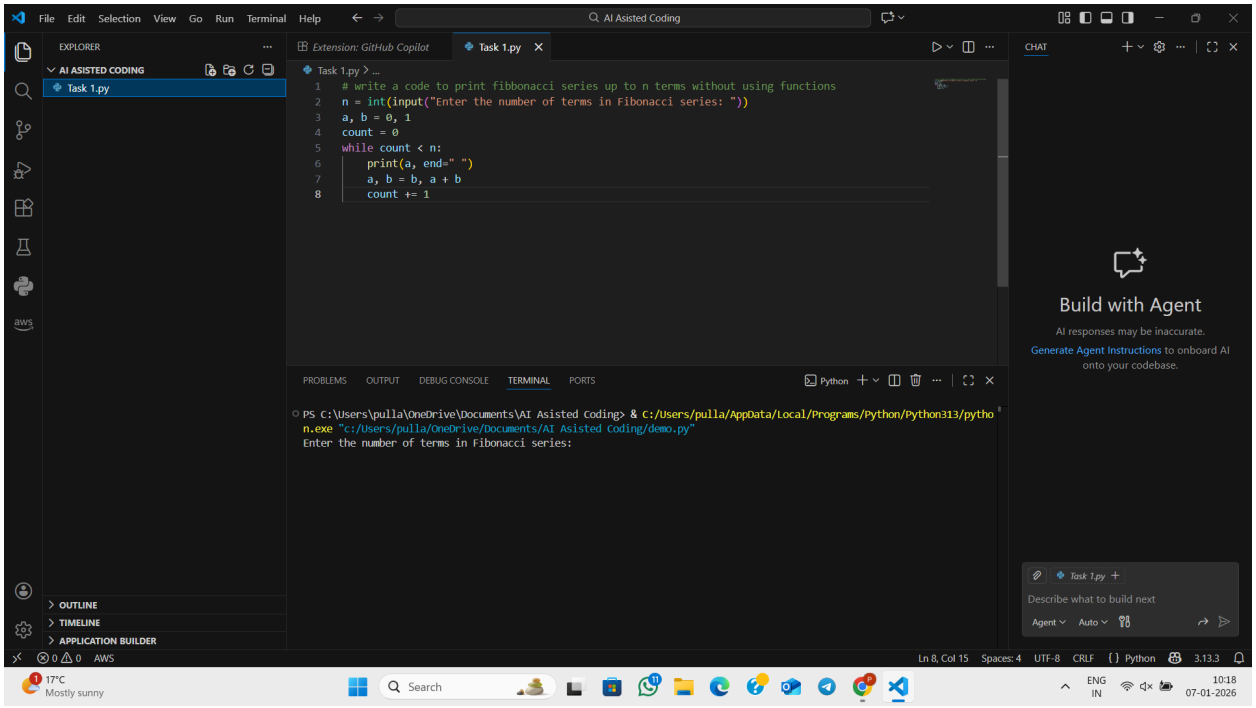
Task 1- AI-Generated Logic Without Modularization (Fibonacci Sequence Without Functions)

Prompt used:

"#write a code to print fibonacci series up to n terms"

"#write a code to print fibonacci series up to n terms without using functions"





Explanation:

GitHub Copilot generated a simple loop-based Fibonacci program using inline comments as prompt, The logic is written directly in the main code without any function definition.

Output:

For input 5, the output displayed is: 0 1 1 2 3

Observation:

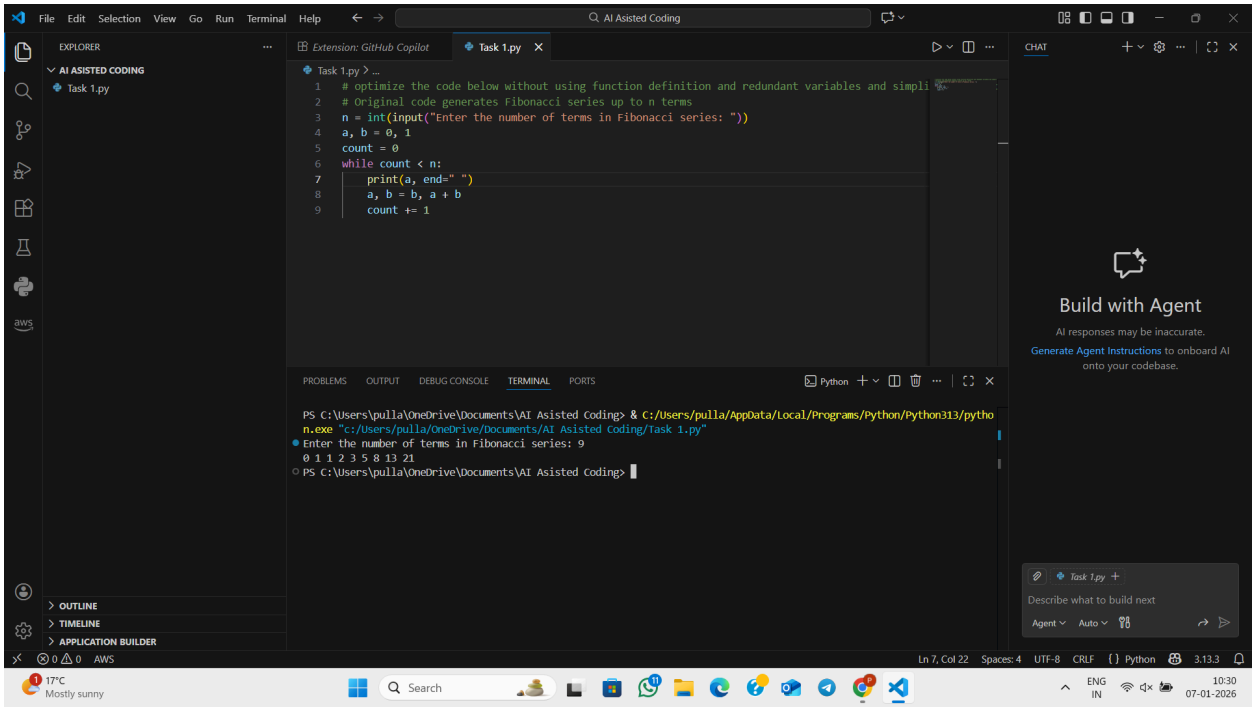
Copilot correctly understood the prompt and produced working procedural code.

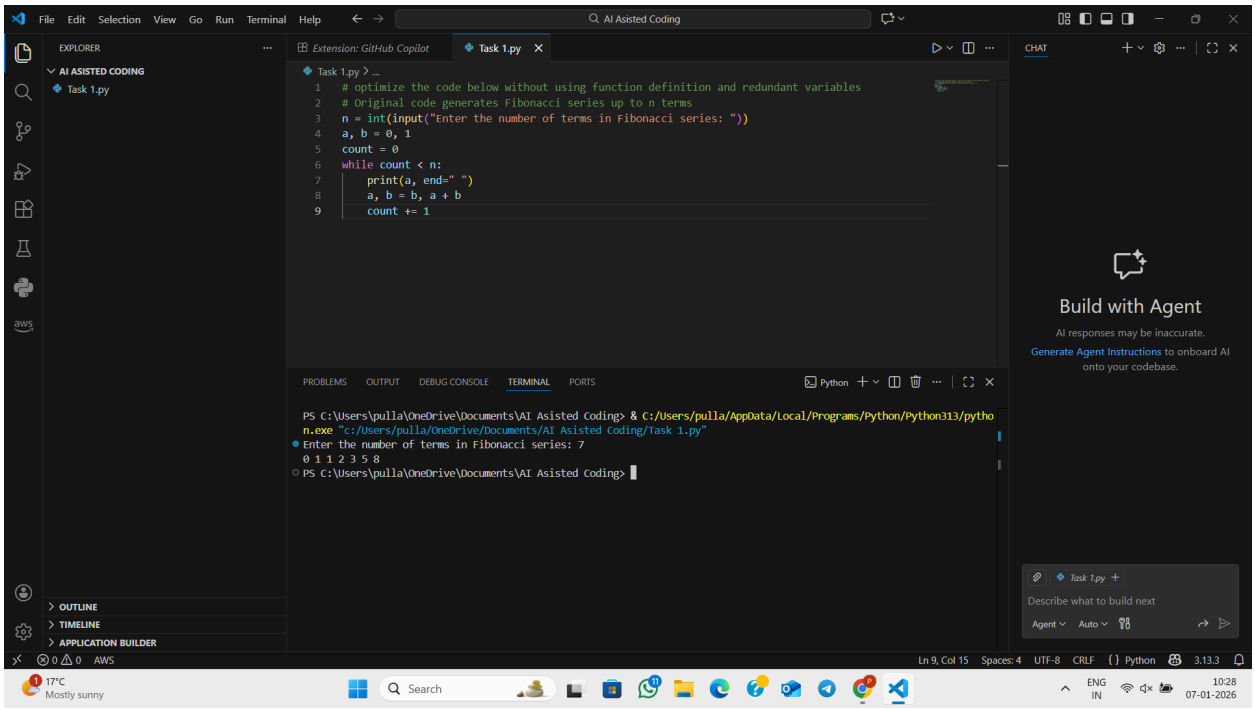
However, the code was less reusable and slightly lengthy.

Task 2: AI Code Optimization & Cleanup (Improving Efficiency)

Prompt used: " #Optimize this Fibonacci code by simplifying logic and removing redundant variables."

“#Original code generates Fibonacci series up to n terms”





Explanation:

Copilot reduced unnecessary variables and simplified the loop structure.
The optimized version is shorter, cleaner, and easier to read.

Output:

For input 7, the output displayed is: `0 1 1 2 3 5 8`

Observation:

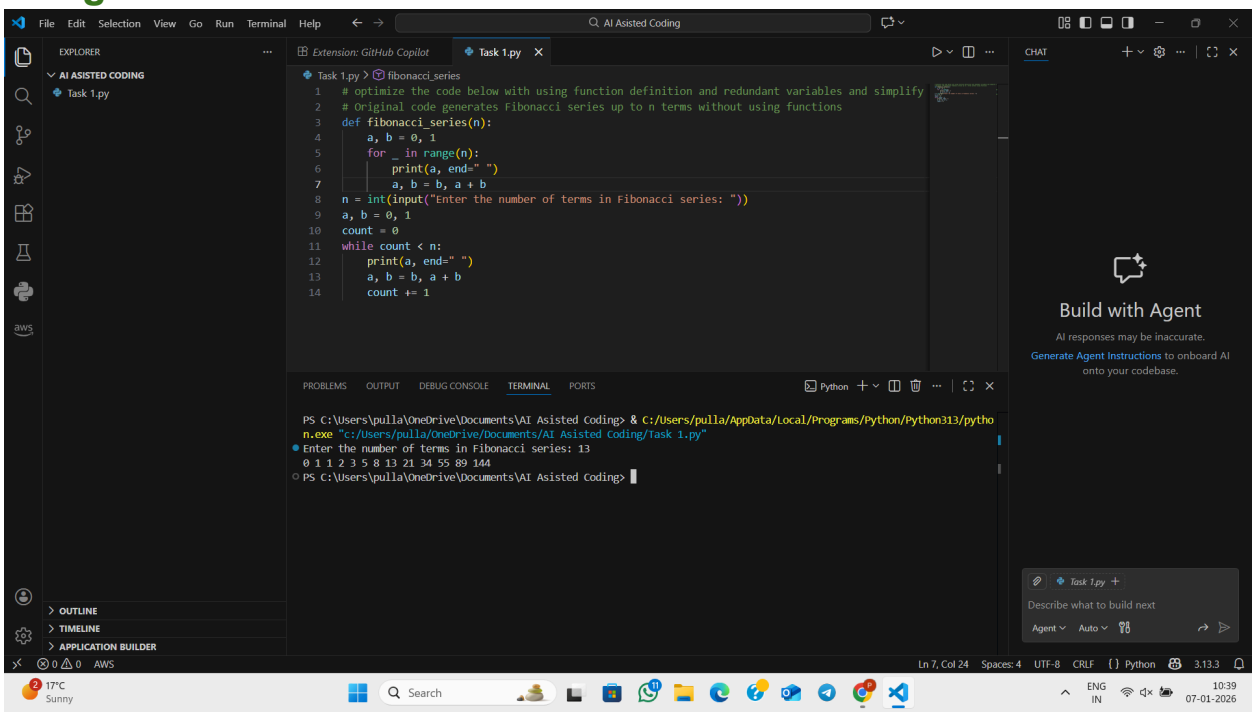
Optimization improved readability and performance.

The code became more concise while producing the same correct output.

Task 3: Modular Design Using AI Assistance (Fibonacci Using Functions)

Prompt used: “#Optimize this Fibonacci code by simplifying logic and removing redundant variables.”

“#Original code generates Fibonacci series up to n terms without using functions”



Explanation:

Copilot generated a user-defined function to encapsulate Fibonacci logic.

The function is called from the main program for better modularity.

Output:

For input 13, the output displayed is:

```
0 1 1 2 3 5 8 13 21 34 55 89 144
```

Observation:

Function-based approach improved code clarity and reusability.
This approach is more suitable for larger applications.

Conclusion: GitHub Copilot helped in quickly generating, optimizing, and understanding Fibonacci programs in VS Code, while manual review ensured correctness and better coding practices.