Varshini Girugula

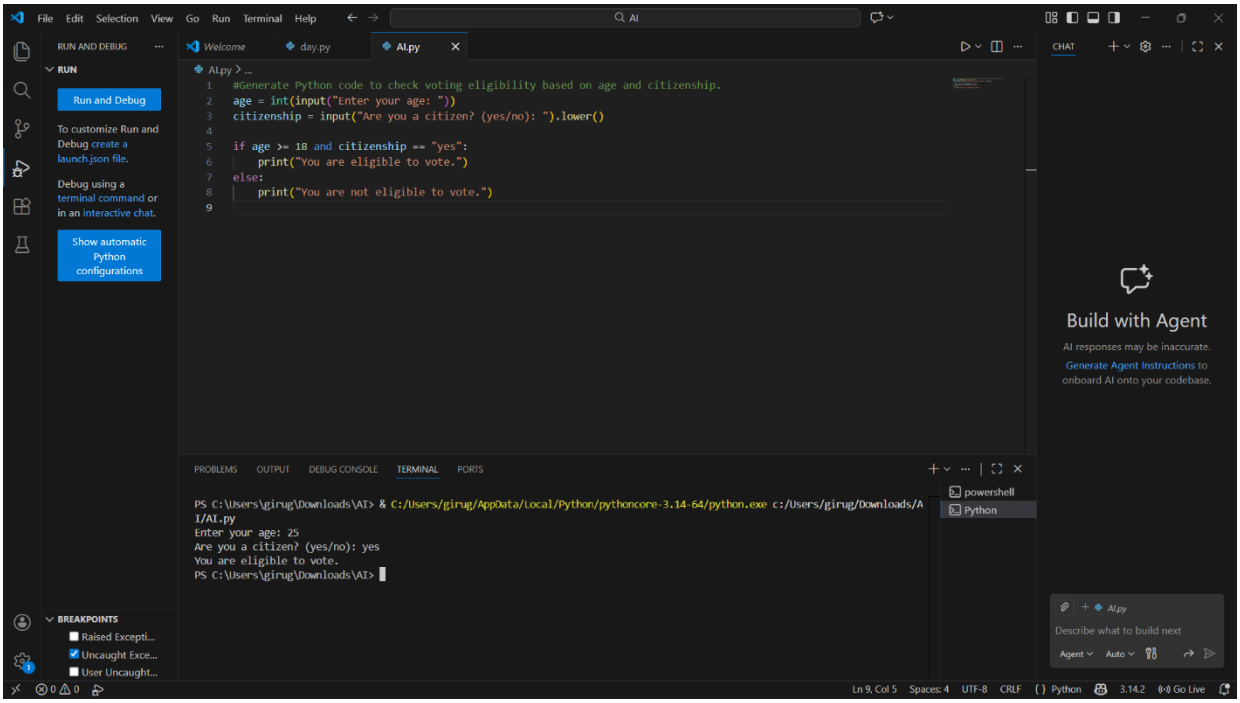
2403a51l14

Batch-51

Lab 6: AI-Based Code Completion: Working with suggestions for classes, loops, conditionals

Task Description – 1: AI-Based Code Completion for Conditional Eligibility Check.

Prompt: Generate Python code to check voting eligibility based on age and citizenship.



Justification:

It checks voting eligibility using conditional statements. It verifies whether the user's age is 18 or above and if the person is a citizen. Based on these conditions, it displays eligibility status.

age >= 18 → Checks minimum voting age.

citizen == "yes" → Ensures citizenship.

and → Both conditions must be true.

if-else → Makes the eligibility decision.

Task Description – 2: AI-Based Code Completion for Loop-Based String Processing.

Prompt: Generate Python code to count vowels and consonants in a string using a loop.

AI-Generated Code:

```python
#task2
#“Generate Python code to count vowels and consonants in a string using a loop.”
def count_vowels_consonants(s):
    vowels = "aeiouAEIOU"
    vowel_count = 0
    consonant_count = 0

    for char in s:
        if char.isalpha():  # Check if the character is a letter
            if char in vowels:
                vowel_count += 1  # Increment vowel count
            else:
                consonant_count += 1  # Increment consonant count

    return vowel_count, consonant_count
input_string = input("Enter a string: ")
vowels, consonants = count_vowels_consonants(input_string)
print(f"Vowels: {vowels}, Consonants: {consonants}")
```

OUTPUT:

```
30
31
PROBLEMS  OUTPUT  DEBUG CONSOLE  TERMINAL  PORTS

PS C:\Users\girug\Downloads\AI> ^C
PS C:\Users\girug\Downloads\AI>
PS C:\Users\girug\Downloads\AI>



                                >  c:; cd 'c:\Users\girug\Downloads\AI'; & 'c:\
64\python.exe' 'c:\Users\girug\.vscode\extensions\ms-python.debugpy-2025.18.6
 '--' 'C:\Users\girug\Downloads\AI\AI.py'
Enter a string: Apple
Vowels: 2, Consonants: 3
PS C:\Users\girug\Downloads\AI>
```

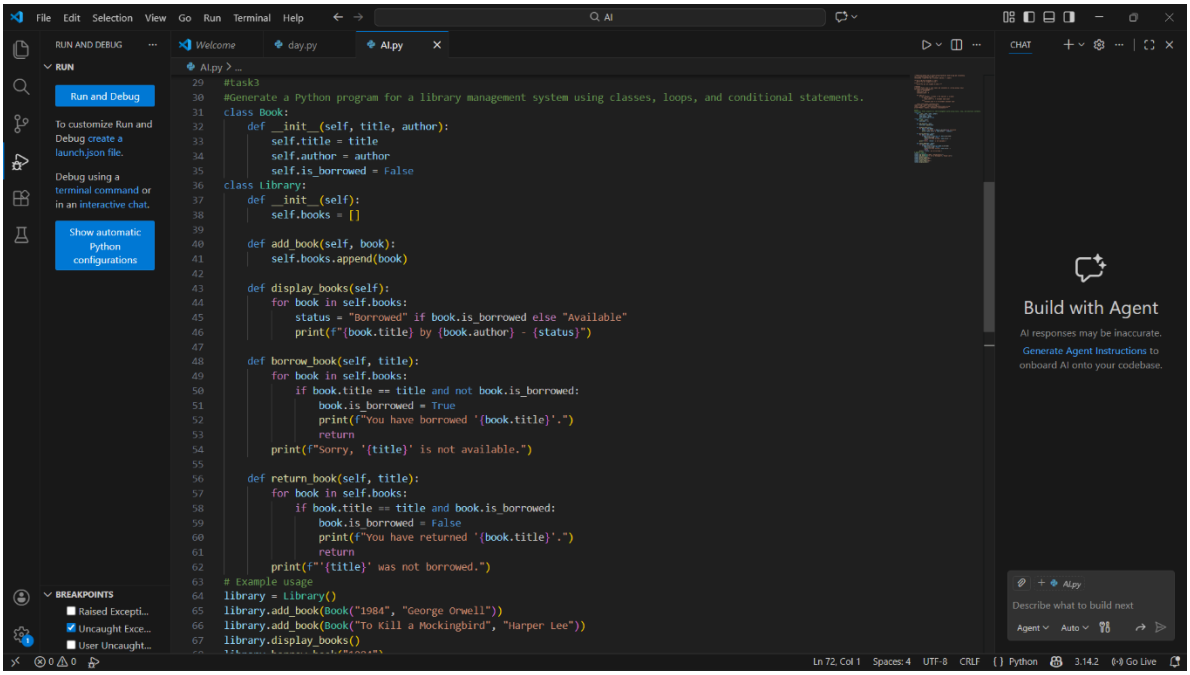
Justification:

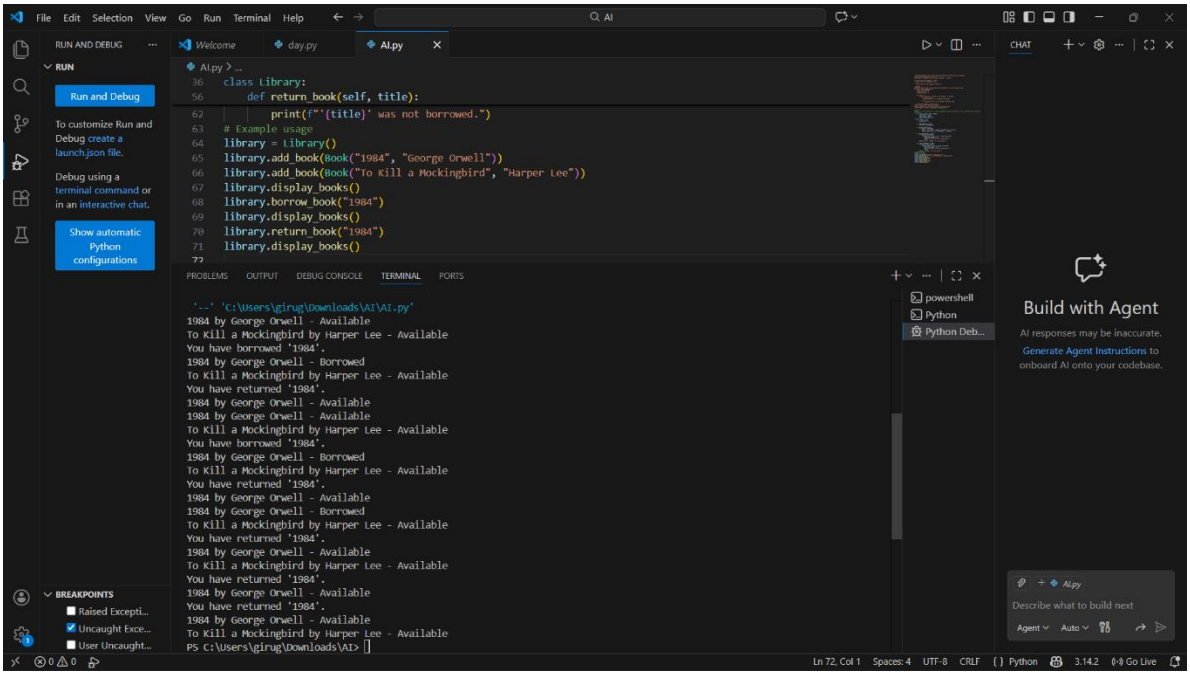
This task uses AI-generated Python code to count vowels and consonants in a given string using a loop. The program reads a string input from the user and

converts it to lowercase to avoid case sensitivity. A for loop iterates through each character in the string.If it is a vowel, the vowel count is incremented; otherwise, the consonant count is increased. This task demonstrates the use of loops and nested conditionals for string processing and character analysis.

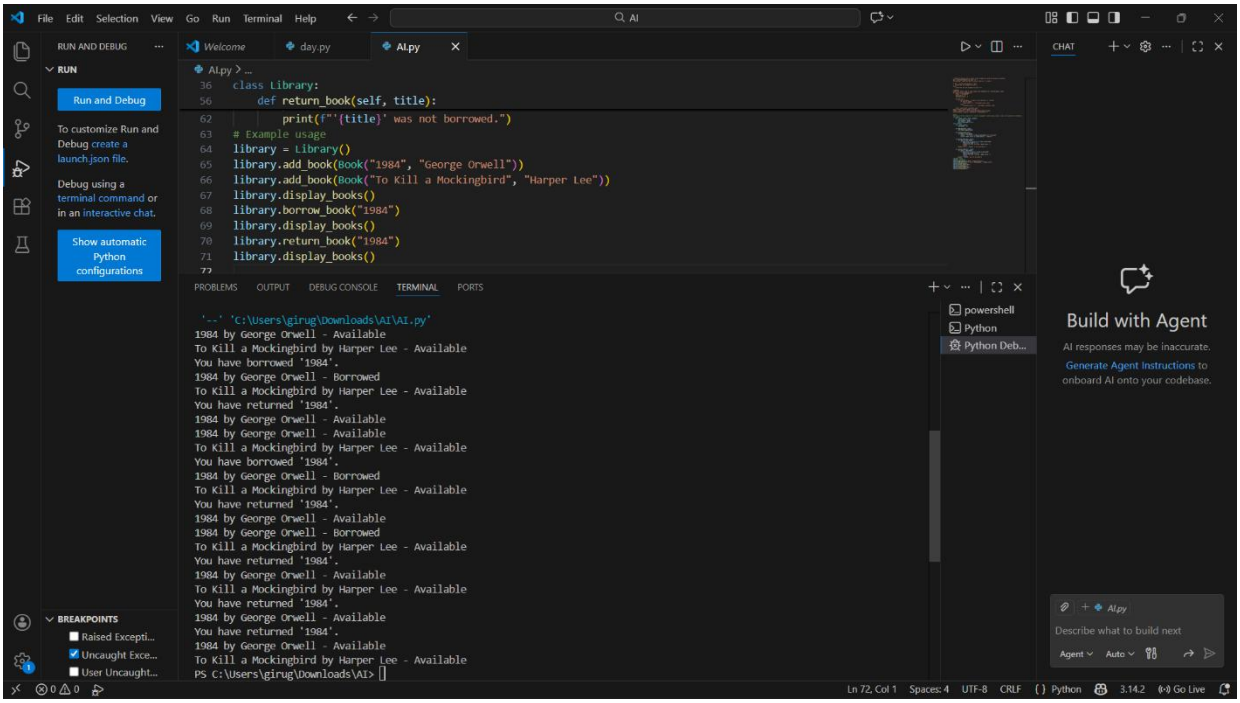
Task Description – 3: AI-Assisted Code Completion Reflection Task

Prompt: Generate a Python program for a library management system using classes, loops, and conditional statements.





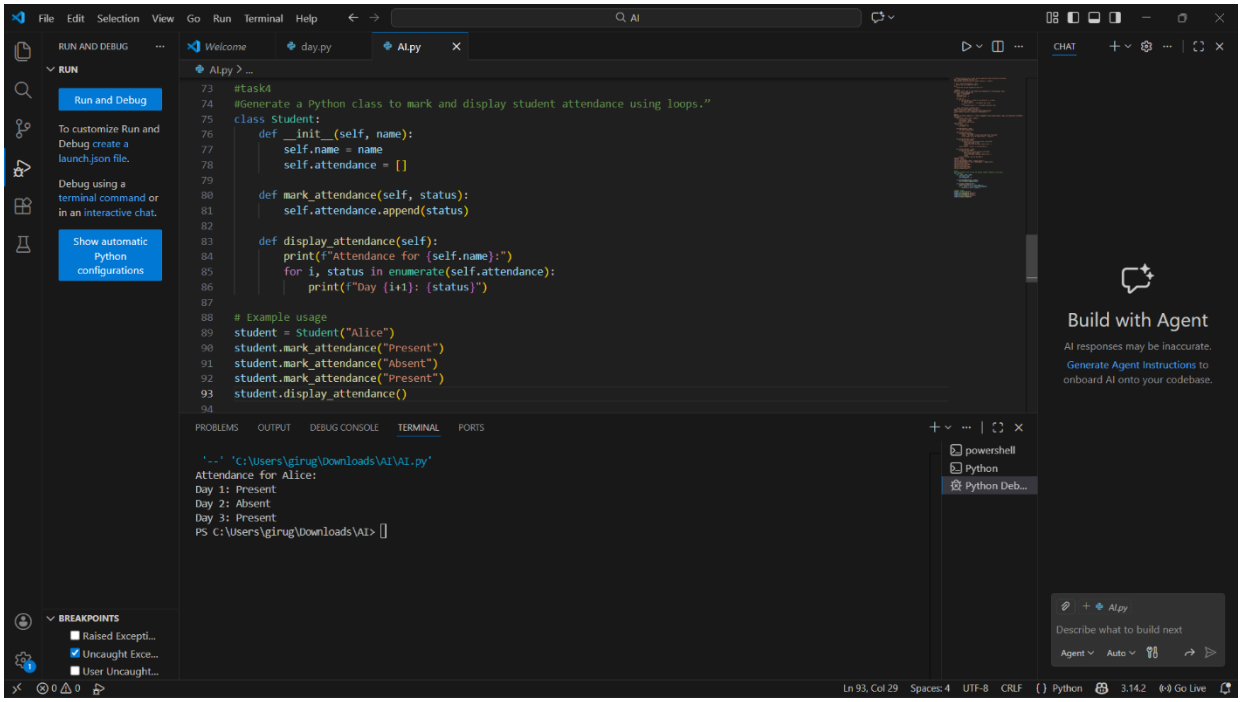
OUTPUT:



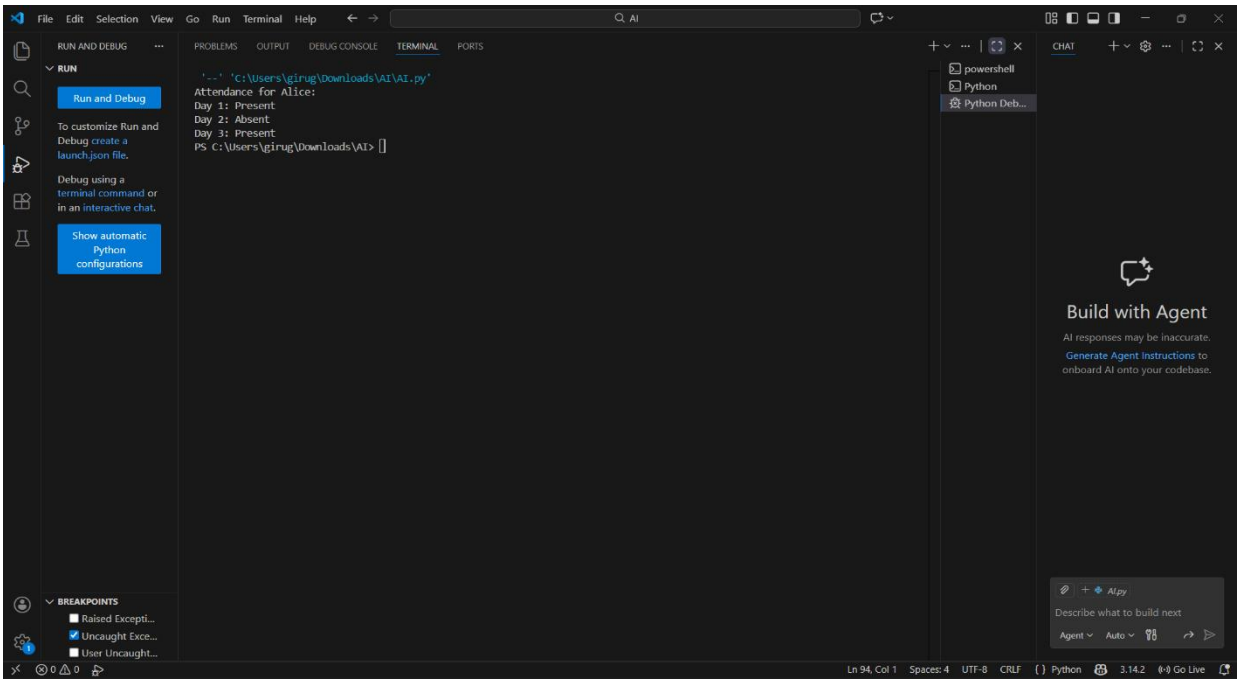
Justification: AI-assisted coding helped speed up development and provided a structured solution. However, human review was necessary to improve input validation, error handling, and real-world usability. Responsible AI use requires understanding and modifying generated code rather than copying blindly.

Task Description – 4: AI-Assisted Code Completion for Class-Based Attendance System

Prompt: Generate a Python class to mark and display student attendance using loops.



OUTPUT:



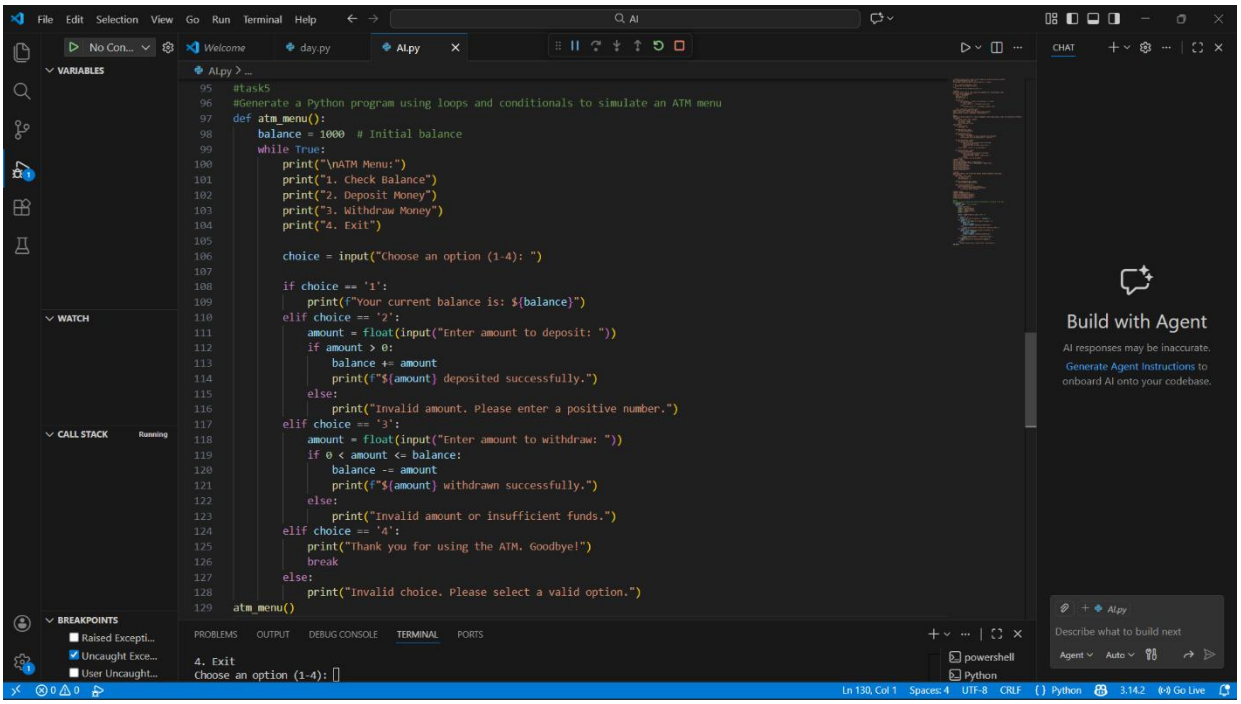
Observations:

- Dictionary stores student name and attendance

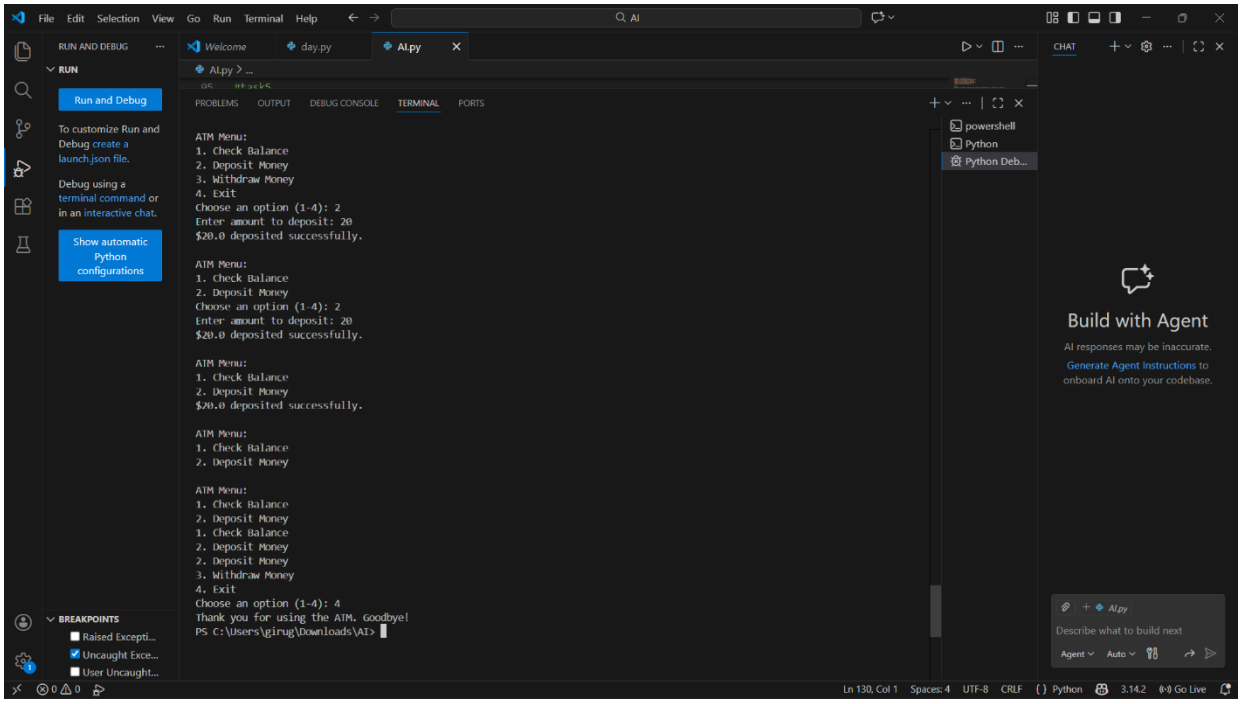
- Loop iterates through records
- Simple and efficient design

Task Description – 5: AI-Based Code Completion for Conditional Menu Navigation

Prompt: Generate a Python program using loops and conditionals to simulate an ATM menu.



OUTPUT:



Justification:

- Correct balance update
- Prevents overdraft
- Loop exits safely