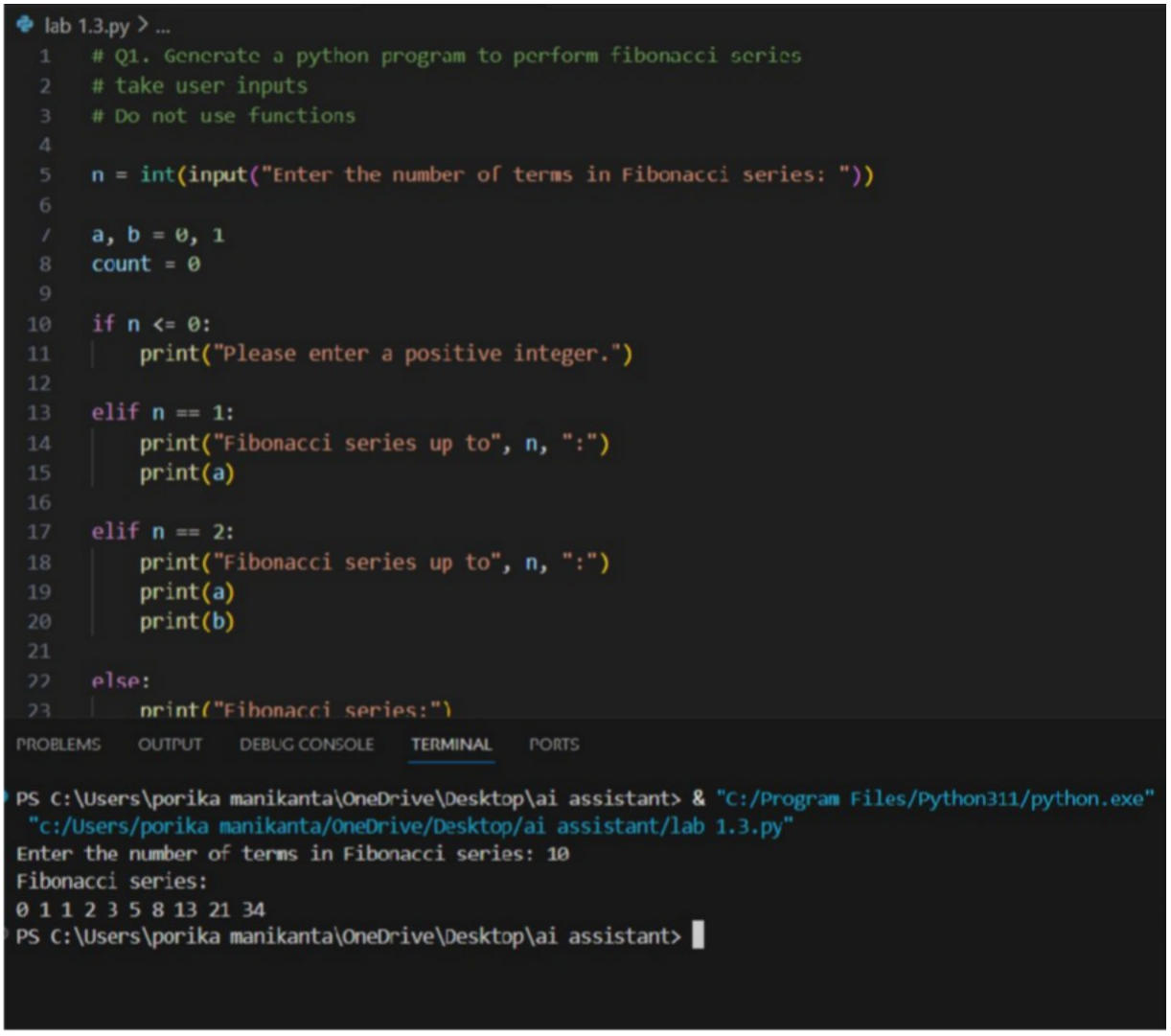
AI Assisted

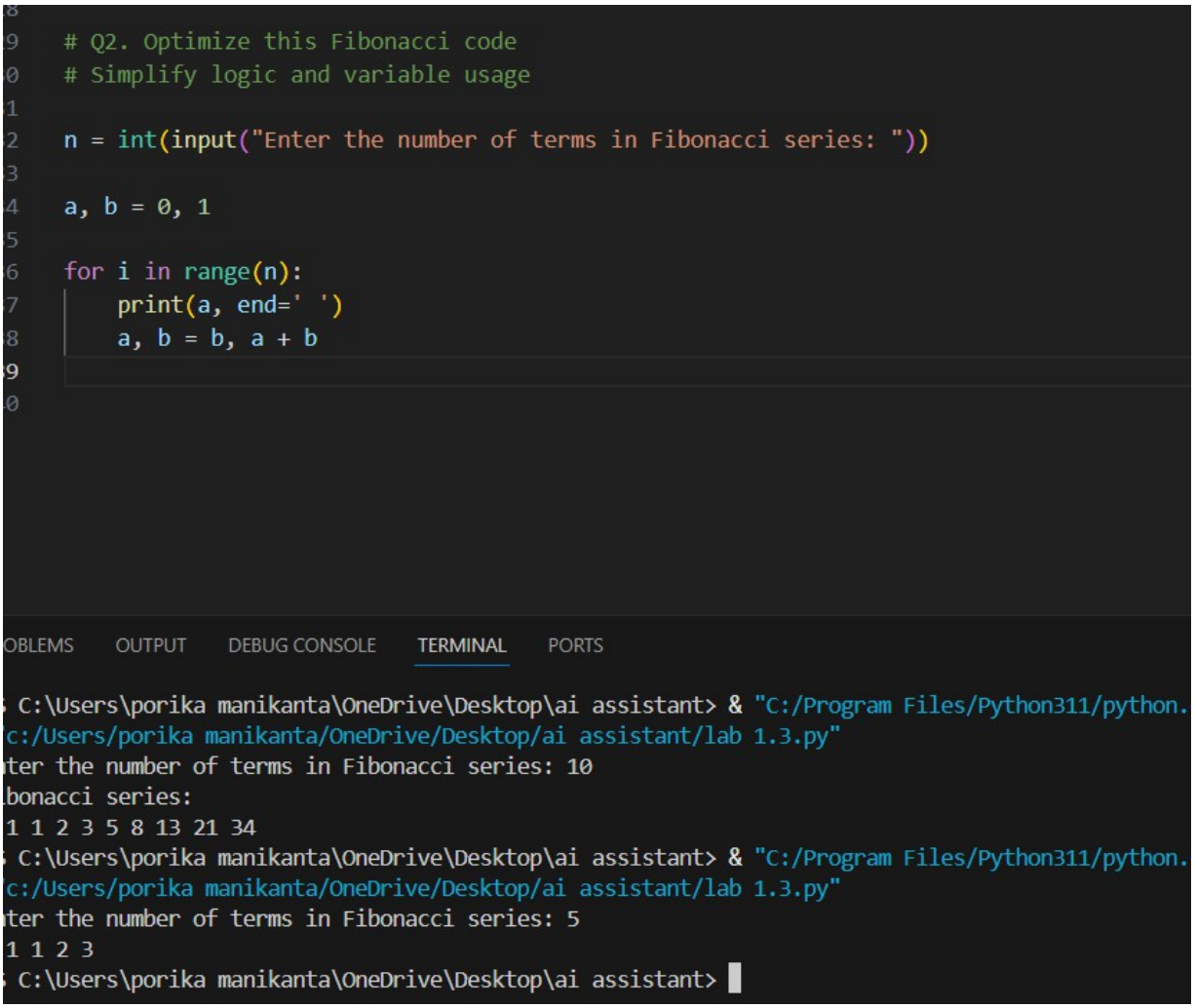
Coding Assignment - 1

V.sri charitha || 2303A51626|| Batch: 08

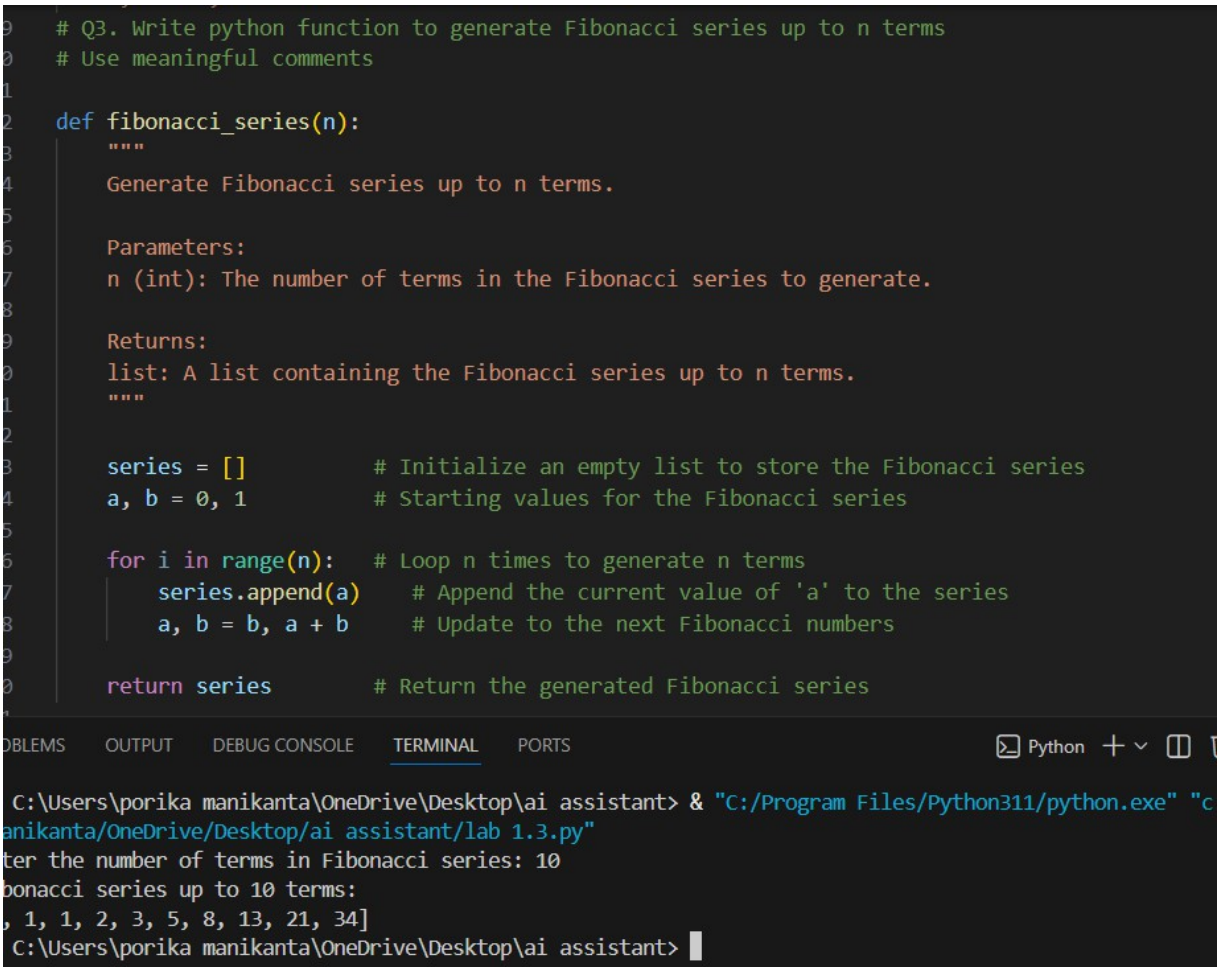


Task 1: AI-Generated Logic Without Modularizaton (Fibonacci Sequence Without Functons) **Code:**

Task 2: AI Code Optmizaton & Cleanup (Improving Efciency) **Code**:



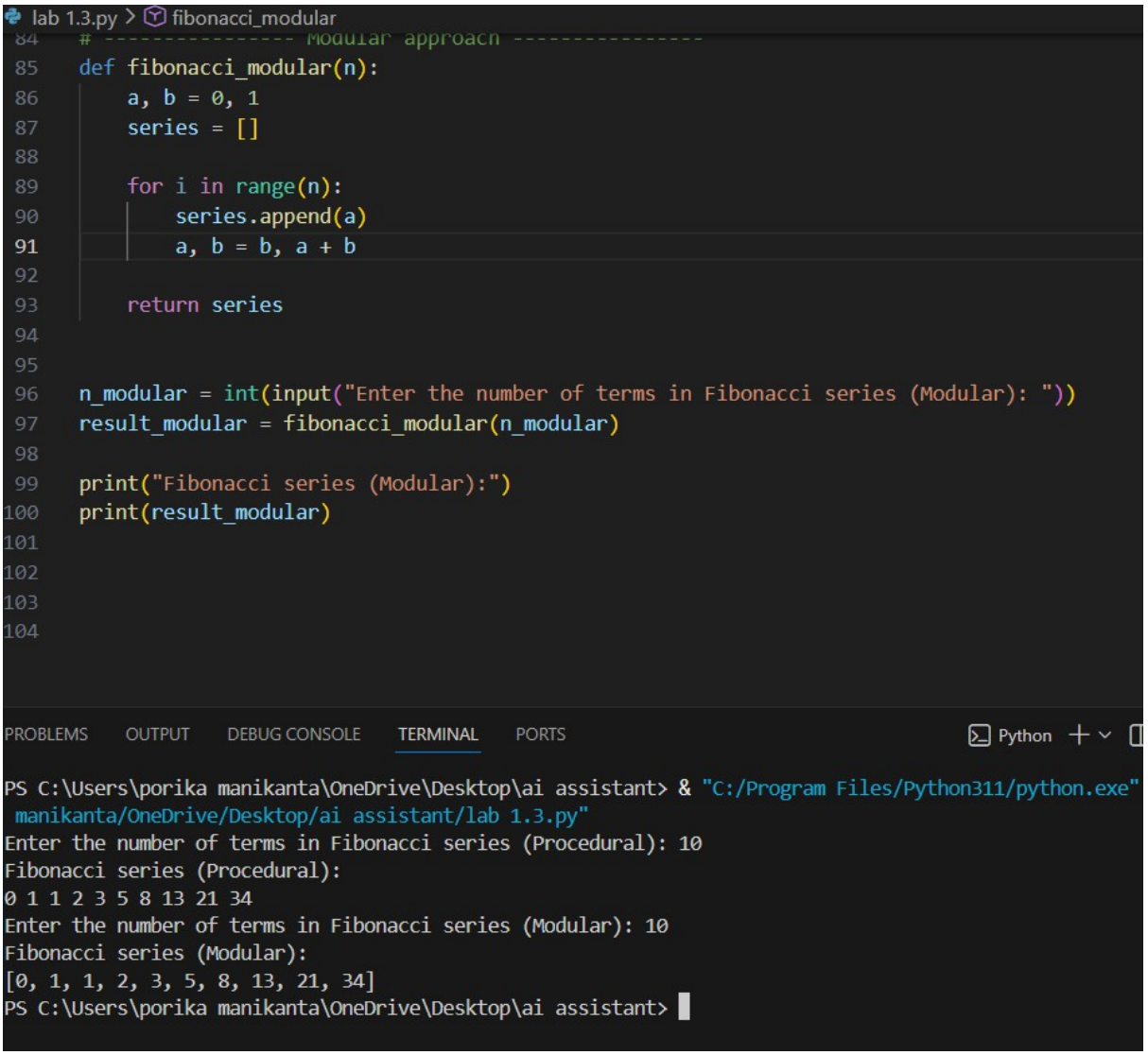
Task 3: Modular Design Using AI Assistance (Fibonacci Using Functions) **Code**:



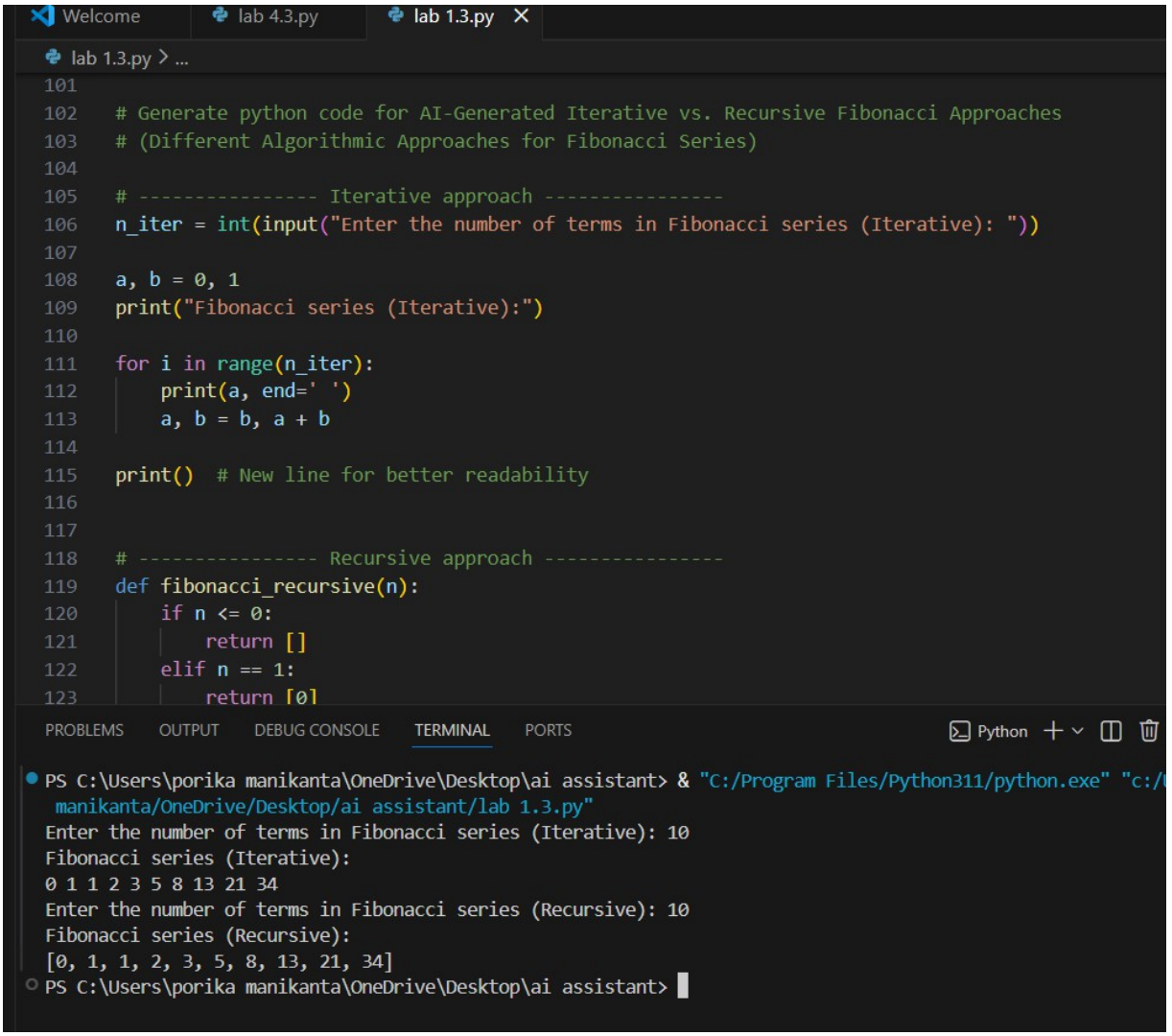
```python
# Q3. Write python function to generate Fibonacci series up to n terms
# Use meaningful comments

def fibonacci_series(n):
    """
    Generate Fibonacci series up to n terms.

    Parameters:
    n (int): The number of terms in the Fibonacci series to generate.

    Returns:
    list: A list containing the Fibonacci series up to n terms.
    """

    series = []          # Initialize an empty list to store the Fibonacci series
    a, b = 0, 1          # Starting values for the Fibonacci series

    for i in range(n):   # Loop n times to generate n terms
        series.append(a)    # Append the current value of 'a' to the series
        a, b = b, a + b     # Update to the next Fibonacci numbers

    return series        # Return the generated Fibonacci series
```

```
OBLEMS  OUTPUT  DEBUG CONSOLE  TERMINAL  PORTS                    Python

C:\Users\porika manikanta\OneDrive\Desktop\ai assistant> & "C:/Program Files/Python311/python.exe" "c
anikanta/OneDrive/Desktop/ai assistant/lab 1.3.py"
ter the number of terms in Fibonacci series: 10
bonacci series up to 10 terms:
, 1, 1, 2, 3, 5, 8, 13, 21, 34]
C:\Users\porika manikanta\OneDrive\Desktop\ai assistant>
```

Task 4: Comparative Analysis – Procedural vs Modular Fibonacci Code **Code:**



Task 5: AI-Generated Iterative vs Recursive Fibonacci Approaches (Different Algorithmic Approaches for Fibonacci Series) **Code:**


Welcome
lab 4.3.py
lab 1.3.py
lab 1.3.py > ...
101
102 # Generate python code for AI-Generated Iterative vs. Recursive Fibonacci Approaches
103 # (Different Algorithmic Approaches for Fibonacci Series)
104
105 # ---------------- Iterative approach ----------------
106 n_iter = int(input("Enter the number of terms in Fibonacci series (Iterative): "))
107
108 a, b = 0, 1
109 print("Fibonacci series (Iterative):")
110
111 for i in range(n_iter):
112 print(a, end=' ')
113 a, b = b, a + b
114
115 print() # New line for better readability
116
117
118 # ---------------- Recursive approach ----------------
119 def fibonacci_recursive(n):
120 if n <= 0:
121 return []
122 elif n == 1:
123 return [0]
PROBLEMS
OUTPUT
DEBUG CONSOLE
TERMINAL
PORTS
Python
PS C:\Users\porika manikanta\OneDrive\Desktop\ai assistant> & "C:/Program Files/Python311/python.exe" "c:/
manikanta/OneDrive/Desktop/ai assistant/lab 1.3.py"
Enter the number of terms in Fibonacci series (Iterative): 10
Fibonacci series (Iterative):
0 1 1 2 3 5 8 13 21 34
Enter the number of terms in Fibonacci series (Recursive): 10
Fibonacci series (Recursive):
[0, 1, 1, 2, 3, 5, 8, 13, 21, 34]
PS C:\Users\porika manikanta\OneDrive\Desktop\ai assistant>