

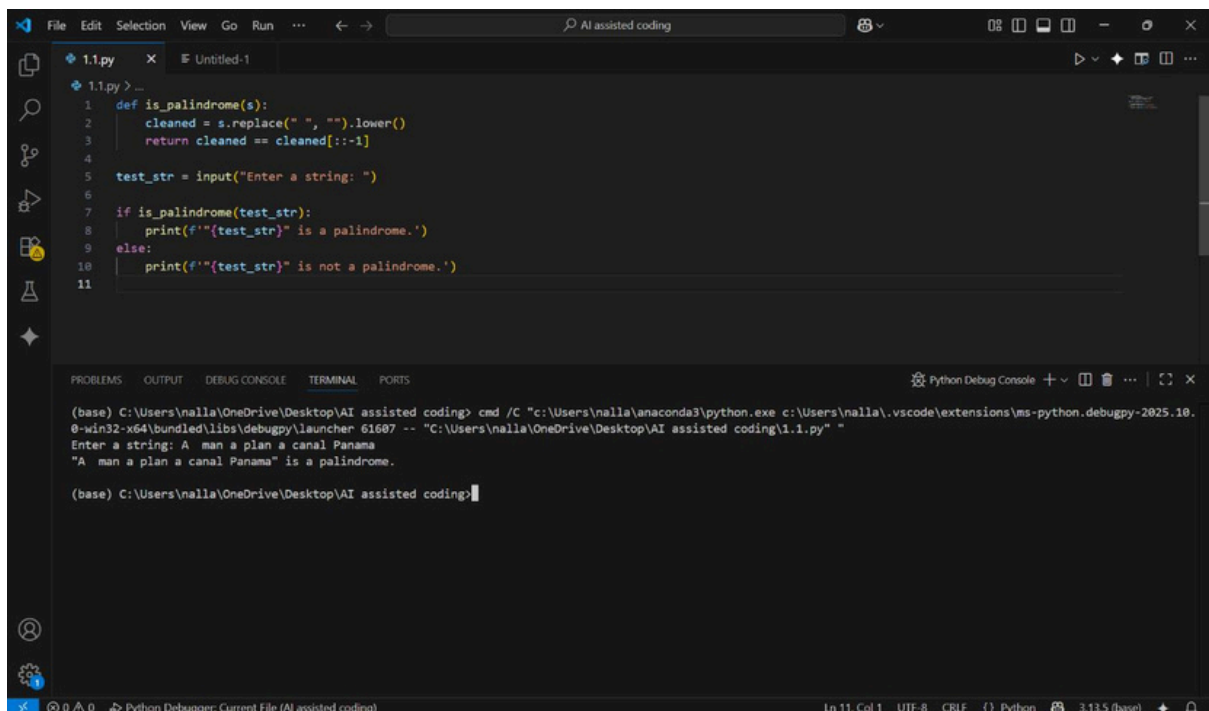
# ASSIGNMENT – 1

**NAME : M.SINDHUJATICKET NO : 2403A52060 BATCH NO : AIB03**

**TASK 1 :** Write a comment: # Function to check if a string is a valid palindrome (ignoring spaces and case) and allow Copilot to complete it. **PROMPT :**

Write a comment: # Function to check if a string is a valid palindrome (ignoring spaces and case)

**CODE :**



```
1.1.py x Untitled-1
1 def is_palindrome(s):
2     cleaned = s.replace(" ", "").lower()
3     return cleaned == cleaned[::-1]
4
5 test_str = input("Enter a string: ")
6
7 if is_palindrome(test_str):
8     print(f"{test_str} is a palindrome.")
9 else:
10    print(f"{test_str} is not a palindrome.")
11
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS Python Debug Console

```
(base) C:\Users\nalla\OneDrive\Desktop\AI assisted coding> cmd /C "c:\Users\nalla\anaconda3\python.exe c:\Users\nalla\.vscode\extensions\ms-python.debugpy-2025.10.0-win32-x64\bundled\libs\debugpy\launcher 61607 -- "C:\Users\nalla\OneDrive\Desktop\AI assisted coding\1.1.py" "
```

Enter a string: A man a plan a canal Panama  
"A man a plan a canal Panama" is a palindrome.

```
(base) C:\Users\nalla\OneDrive\Desktop\AI assisted coding>
```

Ln 11, Col 1 UTF-8 CRLF {} Python 3.13.5 (base)

**OBSERVATION :**

This program is used to check whether a given string is a palindrome. A palindrome is a word or sentence that reads the same forward and

backward, ignoring spaces and letter case. The program first defines a function that removes spaces from the input, converts all characters to lowercase, and then checks if the cleaned string is equal to its reverse. After this, it asks the user to enter a string and passes it to the function. Based on the result, it prints whether the original string entered by the user is a palindrome or not. For example, if the user types “madam” or “A man a plan a canal Panama,” the program will say it is a palindrome, while typing “hello” will result in saying it is not.

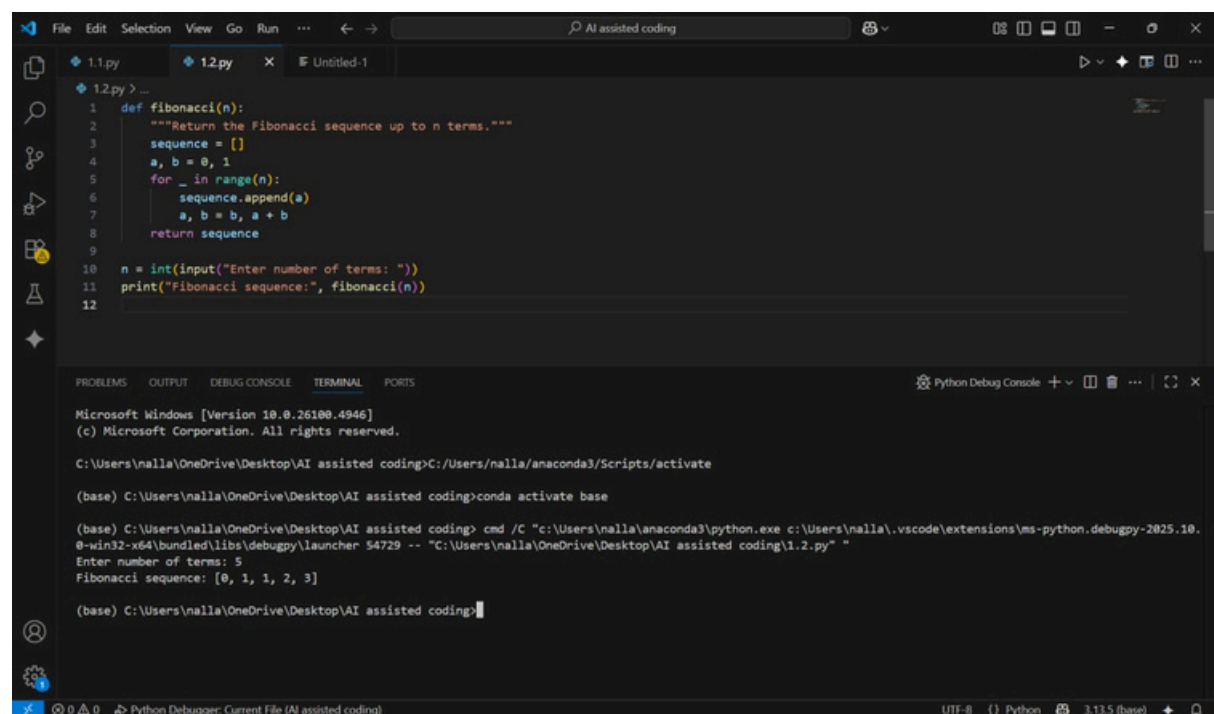
## **TASK 2 :**

Generate a Python function that returns the Fibonacci sequence up to n terms. Prompt with only a function header and docstring.

## **PROMPT :**

Generate a Python function that returns the Fibonacci sequence up to n terms.

## **CODE :**



```
1 def fibonacci(n):
2     """Return the Fibonacci sequence up to n terms."""
3     sequence = []
4     a, b = 0, 1
5     for _ in range(n):
6         sequence.append(a)
7         a, b = b, a + b
8     return sequence
9
10 n = int(input("Enter number of terms: "))
11 print("Fibonacci sequence:", fibonacci(n))
12
```

Microsoft Windows [Version 10.0.26100.4946]  
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C:\Users\nalla\OneDrive\Desktop\AI assisted coding>C:\Users\nalla\anaconda3\Scripts\activate

(base) C:\Users\nalla\OneDrive\Desktop\AI assisted coding>conda activate base

(base) C:\Users\nalla\OneDrive\Desktop\AI assisted coding>cmd /C "c:\Users\nalla\anaconda3\python.exe c:\Users\nalla\.vscode\extensions\ms-python.debugpy-2025.10.0-win32-x64\bundle\libs\debugpy\launcher 54729 -- "C:\Users\nalla\OneDrive\Desktop\AI assisted coding\1.2.py" "

Enter number of terms: 5  
Fibonacci sequence: [0, 1, 1, 2, 3]

(base) C:\Users\nalla\OneDrive\Desktop\AI assisted coding>

**OBSERVATION :** This program generates the Fibonacci sequence up to the number of terms given by the user. The Fibonacci sequence starts with 0 and 1,

and each new number is the sum of the previous two. In the program, two variables a and b are used to hold consecutive terms, starting with 0 and 1. Inside a loop that runs n times, the current value of a is added to the sequence, and then a and b are updated so that a takes the value of b and b becomes the sum of the two. After the loop ends, the complete sequence is returned. Finally, the program asks the user for the number of terms, calls the function, and prints the Fibonacci sequence. For example, if the user enters 5, the program will output 0, 1, 1, 2, 3.

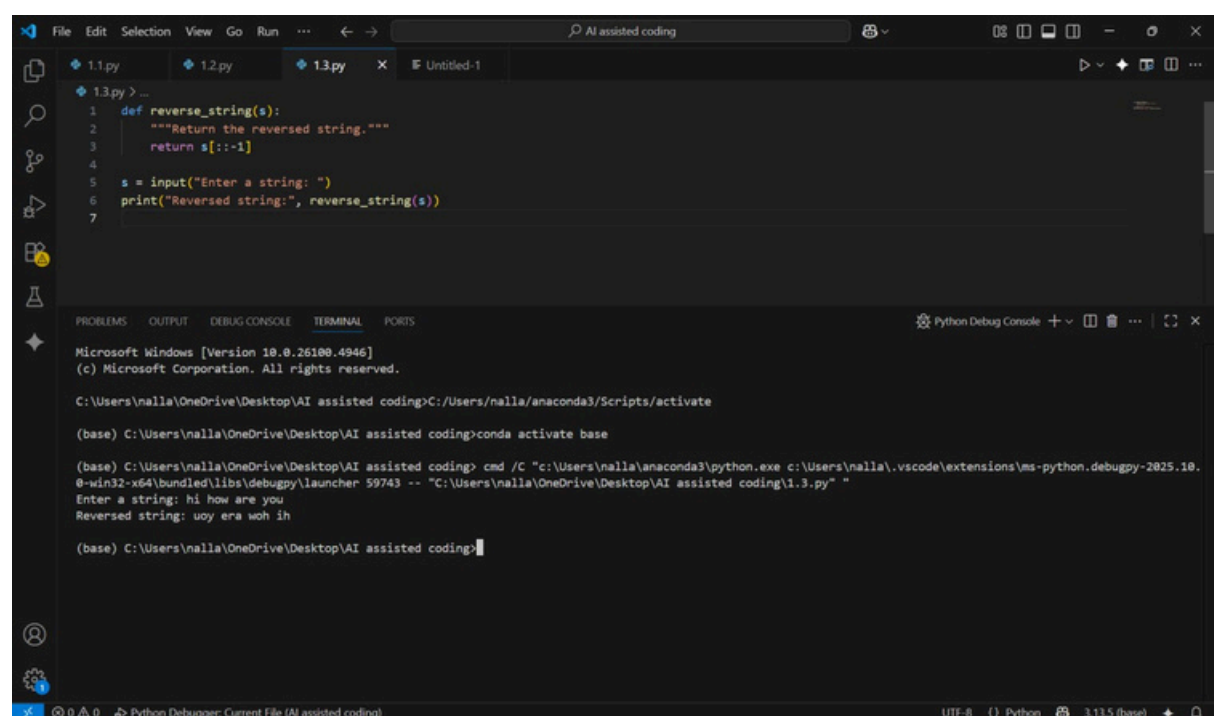
### **TASK 3 :**

Write a comment like # Function to reverse a string and use Copilot to generate the function.

### **PROMPT :**

Write a comment like # Function to reverse a string .

### **CODE :**



```
File Edit Selection View Go Run ... AI assisted coding
1.1.py 1.2.py 1.3.py x Untitled-1
1.3.py > ...
1 def reverse_string(s):
2     """Return the reversed string."""
3     return s[::-1]
4
5 s = input("Enter a string: ")
6 print("Reversed string:", reverse_string(s))
7

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS Python Debug Console
Microsoft Windows [Version 10.0.26100.4946]
(c) Microsoft Corporation. All rights reserved.

C:\Users\nalla\OneDrive\Desktop\AI assisted coding>C:\Users\nalla\anaconda3\Scripts\activate
(base) C:\Users\nalla\OneDrive\Desktop\AI assisted coding>conda activate base
(base) C:\Users\nalla\OneDrive\Desktop\AI assisted coding>cmd /C "c:\Users\nalla\anaconda3\python.exe c:\Users\nalla\.vscode\extensions\ms-python.debugpy-2025.10.0-win32-x64\bundled\libs\debugpy\launcher 59743 -- "C:\Users\nalla\OneDrive\Desktop\AI assisted coding\1.3.py" "
Enter a string: hi how are you
Reversed string: uoy era woh ih

(base) C:\Users\nalla\OneDrive\Desktop\AI assisted coding>
```

### **OBSERVATION :**

This program is used to reverse a string. It defines a function `reverse_string(s)` that takes a string as input. Inside the function, `s[::-1]` is used to reverse the string. The program then asks the user to enter a

string.

Finally, it calls the function and prints the reversed string.

#### **TASK 4 :**

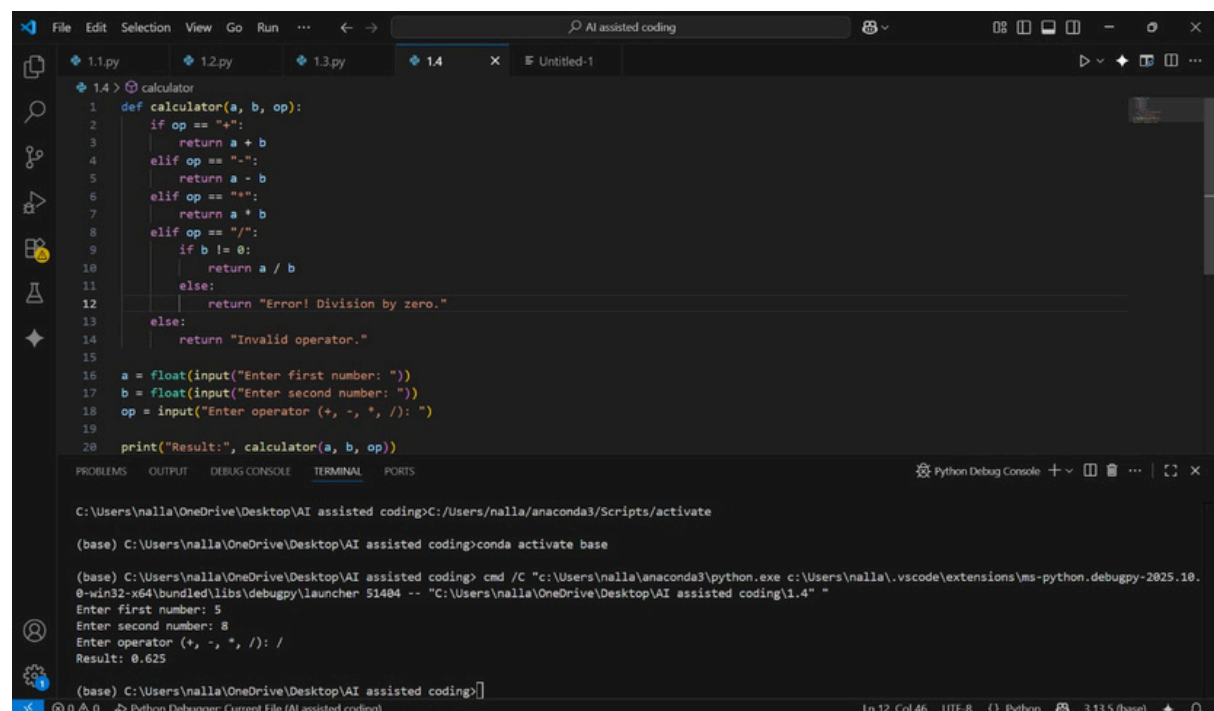
Generate a program that simulates a basic calculator (add, subtract, multiply, divide).

#### **PROMPT :**

Generate a program that simulates a basic calculator (add, subtract, multiply, divide).

Write the comment: # Simple calculator with 4 operations .

#### **CODE :**



```
1.1.py 1.2.py 1.3.py 1.4 x Untitled-1
1.4 > calculator
1 def calculator(a, b, op):
2     if op == "+":
3         return a + b
4     elif op == "-":
5         return a - b
6     elif op == "*":
7         return a * b
8     elif op == "/":
9         if b != 0:
10            return a / b
11        else:
12            return "Error! Division by zero."
13    else:
14        return "Invalid operator."
15
16 a = float(input("Enter first number: "))
17 b = float(input("Enter second number: "))
18 op = input("Enter operator (+, -, *, /): ")
19
20 print("Result:", calculator(a, b, op))

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS
Python Debug Console
C:\Users\nalla\OneDrive\Desktop\AI assisted coding>C:\Users\nalla\anaconda3\Scripts\activate
(base) C:\Users\nalla\OneDrive\Desktop\AI assisted coding>conda activate base
(base) C:\Users\nalla\OneDrive\Desktop\AI assisted coding>cmd /C "c:\Users\nalla\anaconda3\python.exe c:\Users\nalla\.vscode\extensions\ms-python.debugpy-2025.10.0-win32-x64\bundled\libs\debugpy\launcher 51404 -- "C:\Users\nalla\OneDrive\Desktop\AI assisted coding\1.4" "
Enter first number: 5
Enter second number: 8
Enter operator (+, -, *, /): /
Result: 0.625
(base) C:\Users\nalla\OneDrive\Desktop\AI assisted coding>]
```

#### **OBSERVATION :**

This program works as a simple calculator. It defines a function `calculator(a, b, op)` that takes two numbers and an operator.

Based on the operator, it performs addition, subtraction, multiplication, or division. It also checks for division by zero and returns an error if it happens.

Finally, the program takes input from the user and displays the result.

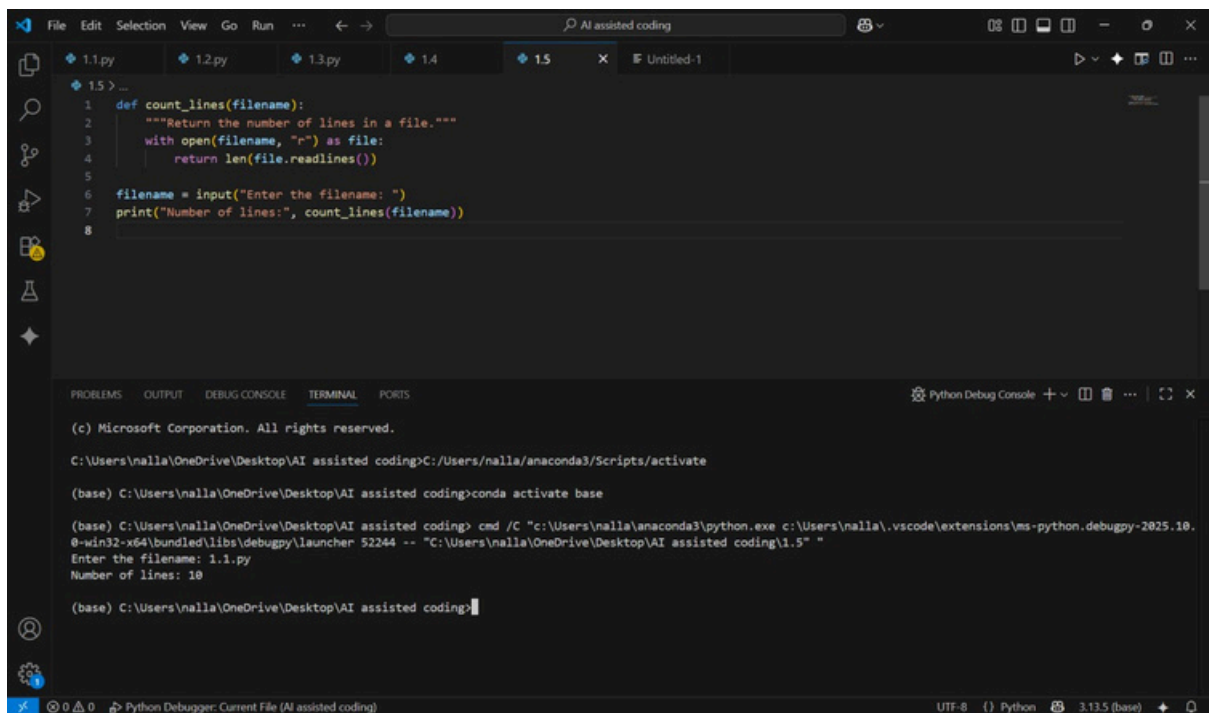
## TASK 5 :

Use a comment to instruct AI to write a function that reads a file and returns the number of lines.

### PROMPT :

Generate a function that reads a file and returns the number of lines.

### CODE :



The screenshot shows a Visual Studio Code editor window with a Python file named 1.5.py. The code defines a function `count_lines` that takes a filename as input, opens the file, and returns the number of lines. The function is then called with the input filename, and the result is printed. The terminal output shows the execution of the script, which prompts the user to enter the filename and displays the number of lines (10).

```
1 def count_lines(filename):
2     """Return the number of lines in a file."""
3     with open(filename, "r") as file:
4         return len(file.readlines())
5
6 filename = input("Enter the filename: ")
7 print("Number of lines:", count_lines(filename))
8
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS Python Debug Console

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C:\Users\nalla\OneDrive\Desktop\AI assisted coding>C:\Users\nalla\anaconda3\Scripts\activate

(base) C:\Users\nalla\OneDrive\Desktop\AI assisted coding>conda activate base

(base) C:\Users\nalla\OneDrive\Desktop\AI assisted coding>cmd /C "C:\Users\nalla\anaconda3\python.exe c:\Users\nalla\.vscode\extensions\ms-python.debugpy-2025.10.0-win32-x64\bundled\libs\debugpy\launcher 52244 -- "C:\Users\nalla\OneDrive\Desktop\AI assisted coding\1.5" "

Enter the filename: 1.1.py

Number of lines: 10

(base) C:\Users\nalla\OneDrive\Desktop\AI assisted coding>

Python Debugger: Current File (AI assisted coding) UTF-8 Python 3.13.5 (base)