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Assignment :Lab 1.2

SCHOOL OF COMPUTER SCIENCE AND ARTIFICIAL INTELLIGENCE	**DEPARTMENT OF COMPUTER SCIENCE ENGINEERING**

ProgramName:B. Tech	**Assignment Type: Lab**	**AcademicYear:**2025-2026

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CourseCode	24CS002PC215	**CourseTitle**	AI Assisted Coding
Year/Sem	II/I	**Regulation**	R24
Date and Day of Assignment	Week1 - Tuesday	**Time(s)**	
Duration	2 Hours	**Applicableto Batches**	24CSBTB01 To 24CSBTB39

AssignmentNumber:1.2(Present assignment number)/**24**(Total number of assignments)

Q.No.	**Question**	***ExpectedTime to complete***
1	Lab 1: Environment Setup – GitHub Copilot and VS Code Integration	Week1 -

wednesday

Lab Objectives:

- To install and configure GitHub Copilot in Visual Studio Code.
- To explore AI-assisted code generation using GitHub Copilot.
- To analyze the accuracy and effectiveness of Copilot's code suggestions.
- To understand prompt-based programming using comments and code context

Lab Outcomes (LOs):
After completing this lab, students will be able to:

- Set up GitHub Copilot in VS Code successfully.
- Use inline comments and context to generate code with Copilot.
- Evaluate AI-generated code for correctness and readability.
- Compare code suggestions based on different prompts and programming styles.

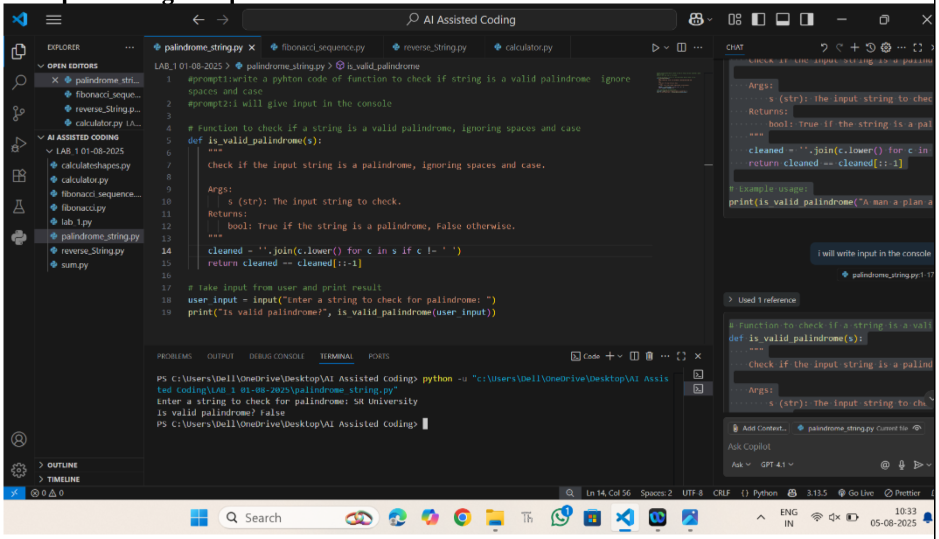
Task Description#1

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

Expected Output#1

- A function that correctly returns True for phrases like "A man a plan a canal Panama"

Prompt1:Write a python code of function to check if string is a valid Palindrome .Ignore spaces and case.
Prompt2:I will give input from the user.



```python
#prompt1:write a pyhton code of function to check if string is a valid palindrome  ignore spaces and case
#prompt2:i will give input in the console

# Function to check if a string is a valid palindrome, ignoring spaces and case
def is_valid_palindrome(s):
    """
    Check if the input string is a palindrome, ignoring spaces and case.

    Args:
        s (str): The input string to check.
    Returns:
        bool: True if the string is a palindrome, False otherwise.
    """
    cleaned = ''.join(c.lower() for c in s if c != ' ')
    return cleaned == cleaned[::-1]

# Take input from user and print result
user_input = input("Enter a string to check for palindrome: ")
print("Is valid palindrome?", is_valid_palindrome(user_input))
```

```
PS C:\Users\Dell\OneDrive\Desktop\AI Assisted Coding> python -u "c:\Users\Dell\OneDrive\Desktop\AI Assisted Coding\LAB_1 01-08-2025\palindrome_string.py"
Enter a string to check for palindrome: SR University
Is valid palindrome? False
PS C:\Users\Dell\OneDrive\Desktop\AI Assisted Coding>
```

i will write input in the console

Observation:In the above python code I Observed that Palindrome is nothing but the given String from Starting to ending and end to start should have the same sequence of elements then it is True or else False.

From the Console we can see SR Univeristy is not a palindrome.So that it is False.

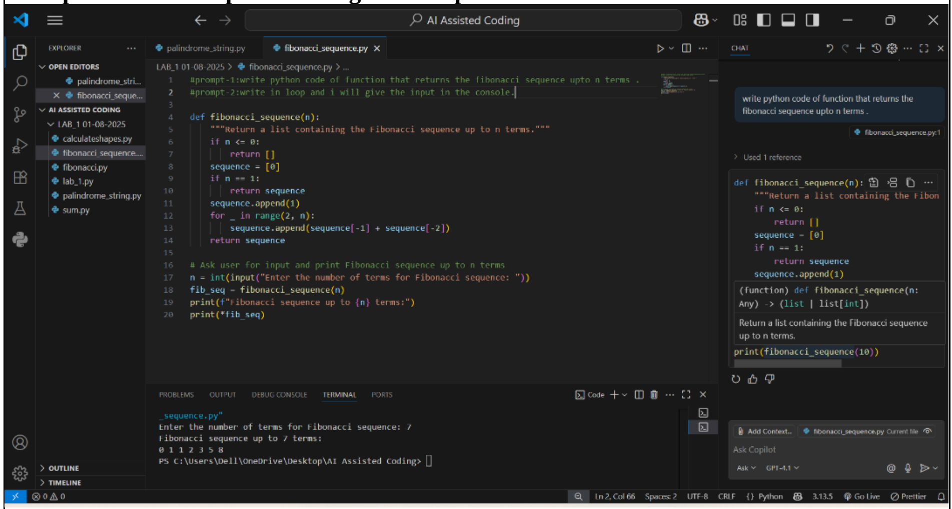
Task Description#2

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

Expected Output#2

- AI completes the function logic using loop or recursion with accurate output

Prompt1:Write python code of function that returns the fibonacci sequence upto n terms.
Prompt2:Write in loop and I will give the input in the console.



```python
#prompt-1:write python code of function that returns the fibonacci sequence upto n terms .
#prompt-2:write in loop and i will give the input in the console.

def fibonacci_sequence(n):
    """Return a list containing the Fibonacci sequence up to n terms."""
    if n <= 0:
        return []
    sequence = [0]
    if n == 1:
        return sequence
    sequence.append(1)
    for _ in range(2, n):
        sequence.append(sequence[-1] + sequence[-2])
    return sequence

# Ask user for input and print Fibonacci sequence up to n terms
n = int(input("Enter the number of terms for Fibonacci sequence: "))
fib_seq = fibonacci_sequence(n)
print(f"Fibonacci sequence up to {n} terms:")
print(*fib_seq)
```

```
_sequence.py"
Enter the number of terms for Fibonacci sequence: 7
Fibonacci sequence up to 7 terms:
0 1 1 2 3 5 8
PS C:\Users\Dell\OneDrive\Desktop\AI Assisted Coding> 
```

write python code of function that returns the fibonacci sequence upto n terms .

```python
def fibonacci_sequence(n):
    """Return a list containing the Fibon
    if n <= 0:
        return []
    sequence = [0]
    if n == 1:
        return sequence
    sequence.append(1)
```

```
(function) def fibonacci_sequence(n: Any) -> (list | list[int])
```

Return a list containing the Fibonacci sequence up to n terms.

```python
print(fibonacci_sequence(10))
```

Observation:

In the above Code ,The Fibonacci series is nothing sum of the 2 sequential elements.And in input nth number I taken as 7 so starts from 0 and adds the sequnce elements.

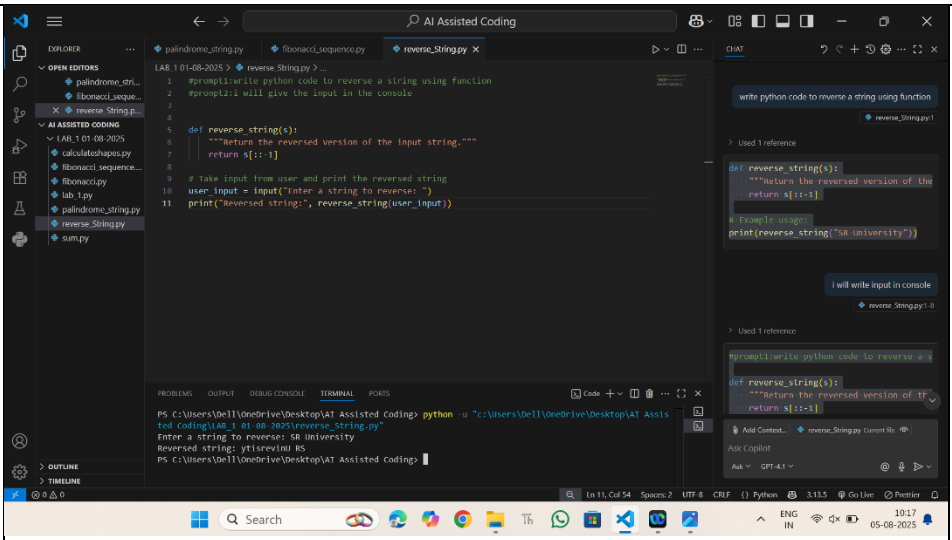
Task Description#3

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

Expected Output#3

- Auto-completed reverse function2s

Prompt1:Write Python code to reverse a string using function
Prompt2:I will give input from the user.



```
#prompt1:write python code to reverse a string using function
#pronpt2:i will give the input in the console


def reverse_string(s):
    """Return the reversed version of the input string."""
    return s[::-1]

# Take input from user and print the reversed string
user_input = input("Enter a string to reverse: ")
print("Reversed string:", reverse_string(user_input))
```

```
PS C:\Users\Dell\OneDrive\Desktop\AI Assisted Coding> python -u "c:\Users\Dell\OneDrive\Desktop\AI Assisted Coding\LAB_1 01-08-2025\reverse_String.py"
Enter a string to reverse: SR University
Reversed string: ytisrevinU RS
PS C:\Users\Dell\OneDrive\Desktop\AI Assisted Coding>
```

write python code to reverse a string using function

```
def reverse_string(s):
    """Return the reversed version of the
    return s[::-1]

# Example usage:
print(reverse_string("SR University"))
```

i will write input in console

```
#prompt1:write python code to reverse a s

def reverse_string(s):
    """Return the reversed version of th
    return s[::-1]
```

Observation:

From the above Python Code, if Give a String in the output then output we get in the reverse ordere.

For Eg:

Enter a String:Hello

Output:olleH

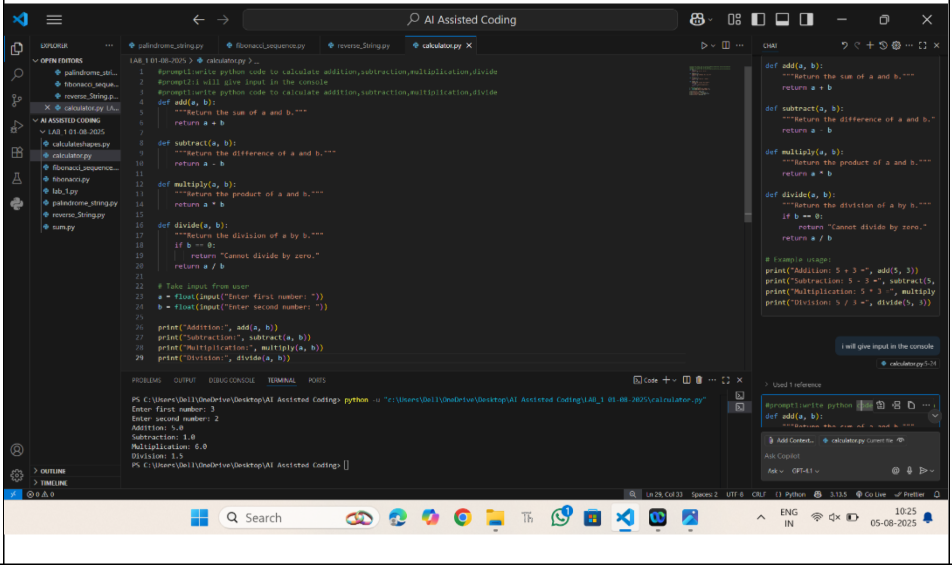
Task Description#4

- Generate a program that simulates a basic calculator (add, subtract, multiply, divide). Write the comment: # Simple calculator with 4 operations and let AI complete it.

Expected Output#4

- Fully working calculator with input/output and operator selection logic

Prompt1: Write Python code to calculate Addition.Subtraction,Multiplication and Division.
Prompt2:I will give input from the user.



```
#prompt1:write python code to calculate addition,subtraction,multiplication,divide
#prompt2:i will give input in the console
#prompt1:write python code to calculate addition,subtraction,multiplication,divide
def add(a, b):
    """Return the sum of a and b."""
    return a + b

def subtract(a, b):
    """Return the difference of a and b."""
    return a - b

def multiply(a, b):
    """Return the product of a and b."""
    return a * b

def divide(a, b):
    """Return the division of a by b."""
    if b == 0:
        return "Cannot divide by zero."
    return a / b

# Take input from user
a = float(input("Enter first number: "))
b = float(input("Enter second number: "))

print("Addition:", add(a, b))
print("Subtraction:", subtract(a, b))
print("Multiplication:", multiply(a, b))
print("Division:", divide(a, b))
```

```
PS C:\Users\Dell\OneDrive\Desktop\AI Assisted Coding> python -u "c:\Users\Dell\OneDrive\Desktop\AI Assisted Coding\LAB_1 01-08-2025\calculator.py"
Enter first number: 3
Enter second number: 2
Addition: 5.0
Subtraction: 1.0
Multiplication: 6.0
Division: 1.5
PS C:\Users\Dell\OneDrive\Desktop\AI Assisted Coding>
```

```
def add(a, b):
    """Return the sum of a and b."""
    return a + b

def subtract(a, b):
    """Return the difference of a and b."
    return a - b

def multiply(a, b):
    """Return the product of a and b."""
    return a * b

def divide(a, b):
    """Return the division of a by b."""
    if b == 0:
        return "Cannot divide by zero."
    return a / b

# Example usage:
print("Addition: 5 + 3 =", add(5, 3))
print("Subtraction: 5 - 3 =", subtract(5,
print("Multiplication: 5 * 3 =", multiply
print("Division: 5 / 3 =", divide(5, 3))
```

i will give input in the console

```
#prompt1:write python code
def add(a, b):
```

Observation:

From the above code,I Observed that we given 2 inputs in console buffer and in ouput we get addition,subtraction,Multiplication and division.

For Eg:

Enter first Number:1

Enter Second Number:2

Addition:3

Subtraction:-1.0

Multiplication:2

Division:0.5

Task Description#5

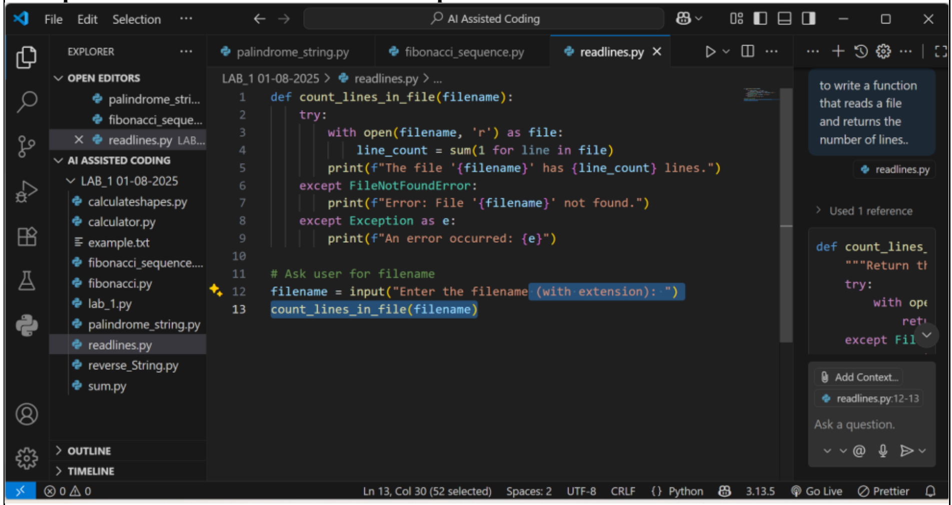
- Use a comment to instruct AI to write a function that reads a file and returns the number of lines..

Expected Output#5

- Functional implementation using open() or with open() and readlines()

Prompt1: write a Python code that reads a file and returns the number of lines. Using Functions.

Prompt2:How and where I can see the output.



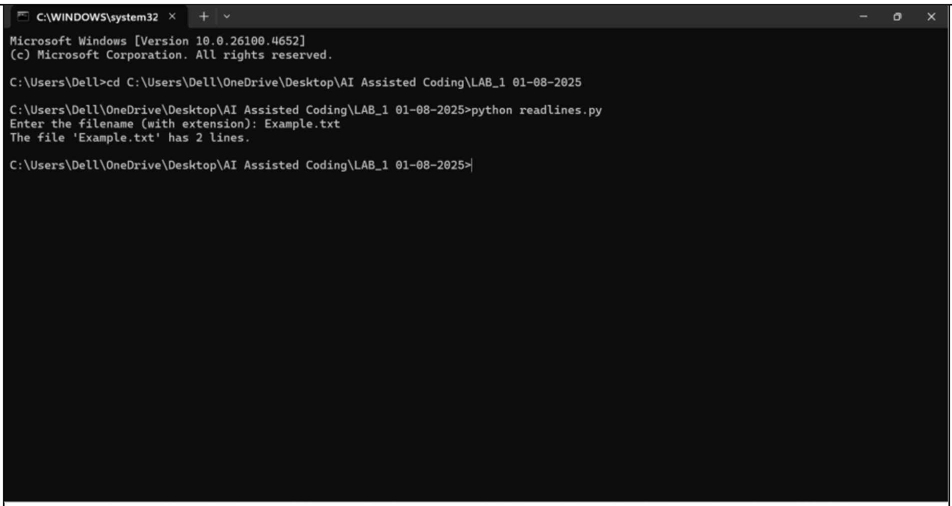
```python
def count_lines_in_file(filename):
    try:
        with open(filename, 'r') as file:
            line_count = sum(1 for line in file)
        print(f"The file '{filename}' has {line_count} lines.")
    except FileNotFoundError:
        print(f"Error: File '{filename}' not found.")
    except Exception as e:
        print(f"An error occurred: {e}")

# Ask user for filename
filename = input("Enter the filename (with extension): ")
count_lines_in_file(filename)
```

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

readlines.py

```
def count_lines_
    """Return th
    try:
        with ope
            ret
    except Fil
```



```
Microsoft Windows [Version 10.0.26100.4652]
(c) Microsoft Corporation. All rights reserved.

C:\Users\Dell>cd C:\Users\Dell\OneDrive\Desktop\AI Assisted Coding\LAB_1 01-08-2025

C:\Users\Dell\OneDrive\Desktop\AI Assisted Coding\LAB_1 01-08-2025>python readlines.py
Enter the filename (with extension): Example.txt
The file 'Example.txt' has 2 lines.

C:\Users\Dell\OneDrive\Desktop\AI Assisted Coding\LAB_1 01-08-2025>
```

Observation:

From the above Code,I Observed that we need to create 2 folder. One is .py extension where we write our python code to find the number of lines.and in Other file I created .txt extension Documents To write write any message.

Open command prompt write (cd path_of_file) then enter and write (python namd_of_code.py). After Enter write the Document file name with Extension.

Then,In output I will give the number of lines we wrote on the Document.

Note: Report should be submitted a word document for all tasks in a single document with prompts, comments & code explanation, and output and if required, screenshots

Evaluation Criteria:

Criteria	Max Marks
Task #1	0.5
Task #2	0.5
Task #3	0.5
Task #4	0.5
Task #5	0.5
Total	**2.5 Marks**