lab AI assitant assignment 1.4

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batch:06

task:1

Lab 1: Environment Setup – GitHub Copilot and VS Code Integration

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):

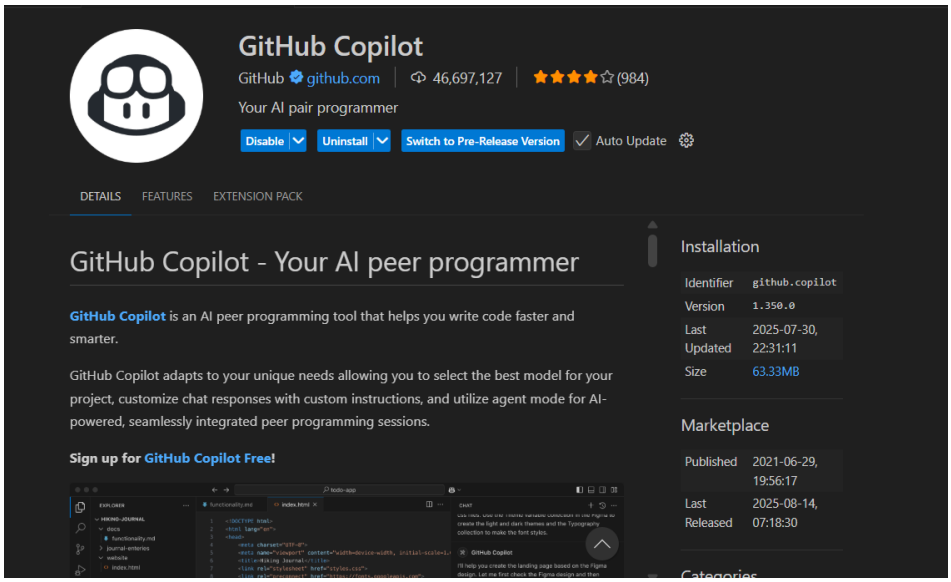
After completing this lab, students will be able to:

- 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

- Install and configure GitHub Copilot in VS Code. Take screenshots of each step



Expected Output #1

- Successfully install and activate GitHub Copilot in VS Code. Include screenshots showing installation, authentication via

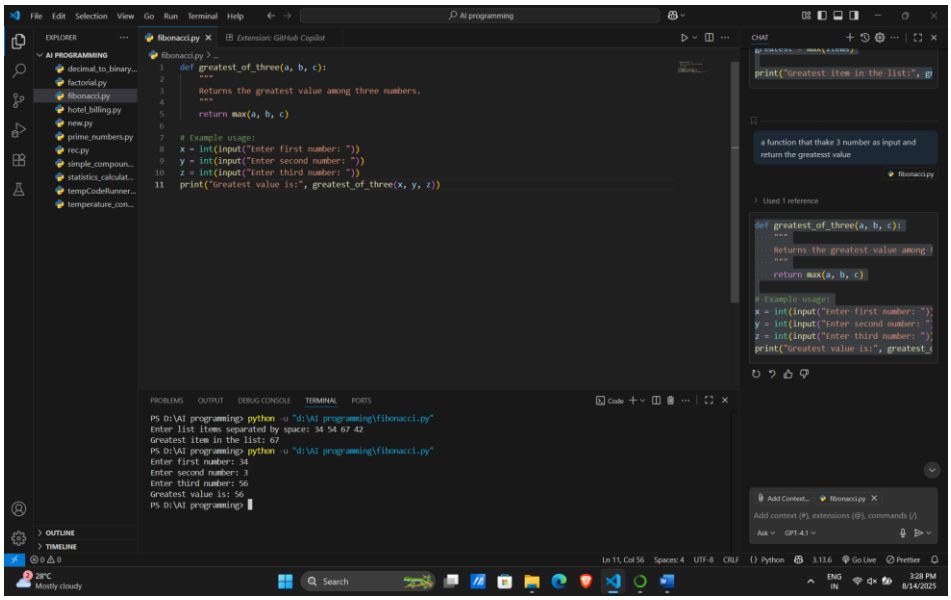
GitHub, and an example suggestion from Copilot.

Task Description #2

- A function in Python that returns the maximum of three numbers using GitHub Copilot. Use an appropriate comment as a prompt.

Expected Output #2

- Python function that takes three inputs and returns the largest value. Include the code and output.



Observation:

This Python program is designed to find the **greatest value among three input numbers** using the built-in max() function.

✅ **How the Program Works:**

1. **Function Definition:**
2. def greatest_of_three(a, b, c):
3. return max(a, b, c)
   - The function greatest_of_three() takes three parameters and returns the maximum using Python's built-in max() function.
4. **User Input:**
   - The program prompts the user to enter three numbers:
   - x = int(input("Enter first number: "))
   - y = int(input("Enter second number: "))
   - z = int(input("Enter third number: "))

- The inputs are converted to integers using int().

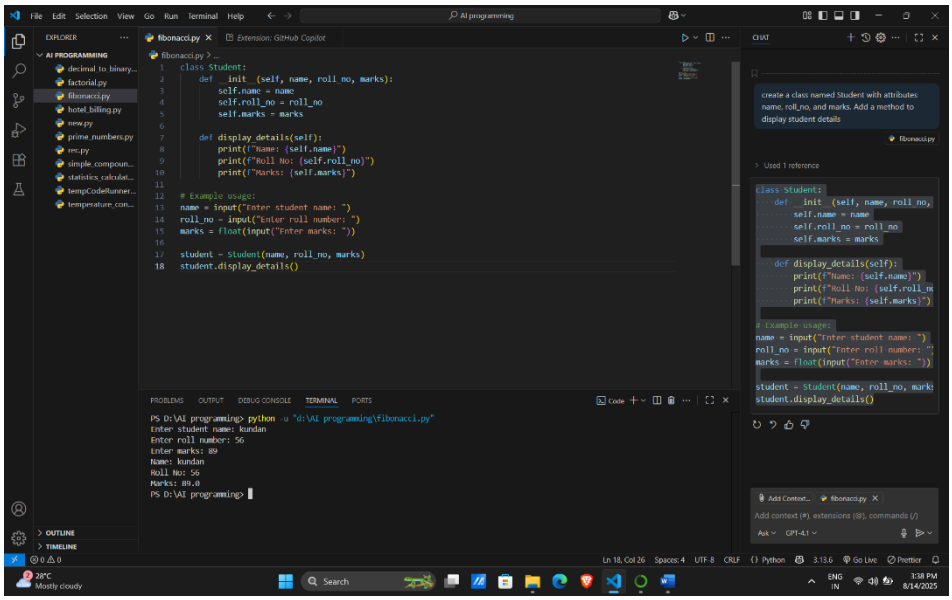
5. **Function Call and Output:**

- The function is called with the three user inputs, and the greatest number is displayed:

```
print("Greatest value is:",
greatest_of_three(x, y, z))
```

Task Description #4

- Prompt GitHub Copilot to create a class named Student with attributes name, roll_no, and marks. Add a method to display student details.



Expected Output #4

• Python class definition with an initializer and a display method. Include object creation and output.

This Python program demonstrates the use of **object-oriented programming (OOP)** by defining a class named Student. It encapsulates student-related data and provides a method to display it.

Observation:

✅ **Key Functionalities:**

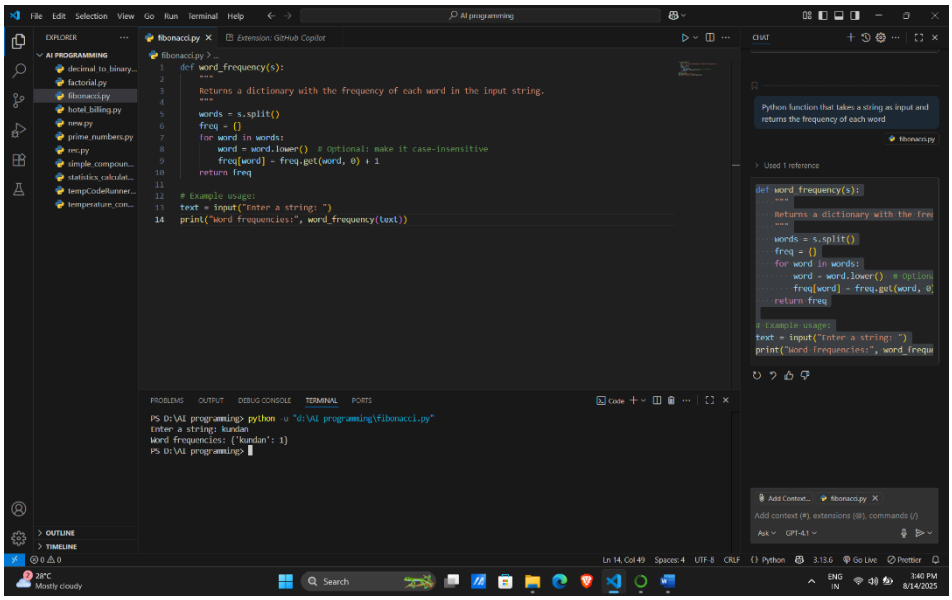
1. **Class Definition:**
2. class Student:
    - A class Student is created to model a student with relevant attributes and behaviors.
3. **Constructor Method (__init__):**

4. def __init__(self, name, roll_no, marks):
5. self.name = name
6. self.roll_no = roll_no
7. self.marks = marks
    - Initializes three instance variables:
        - name: Student's name
        - roll_no: Roll number
        - marks: Marks obtained (as a float)
8. **Display Method:**
9. def display_details(self):
10. print("Name:", self.name)
11. print("Roll No:", self.roll_no)
12. print("Marks:", self.marks)
    - This method prints out the values of the student’s attributes.
13. **User Input & Object Creation:**
14. name = input("Enter student name: ")

```
15. roll_no = input("Enter roll number: ")
16. marks = float(input("Enter marks: "))
17. student = Student(name, roll_no,
    marks)
student.display_details()
```

Task Description #5

- Ask GitHub Copilot to generate a Python function that takes a string as input and returns the frequency of each word.



Expected Output #5

- Python function that returns word

frequency using a dictionary. Provide sample input and output.

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: