AI ASSISTANT CODING

Assignment-9.3

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Batch:05

Prompt: #You are developing a utility function that processes numerical lists and must be properly

#documented for future maintenance.

#Write a Python function to return the sum of even numbers and sum of odd numbers in a

#given list

#• Manually add a Google Style docstring to the function

#• Use an AI-assisted tool (Copilot / Cursor AI) to generate a function-level docstring

#• Compare the AI-generated docstring with the manually written docstring

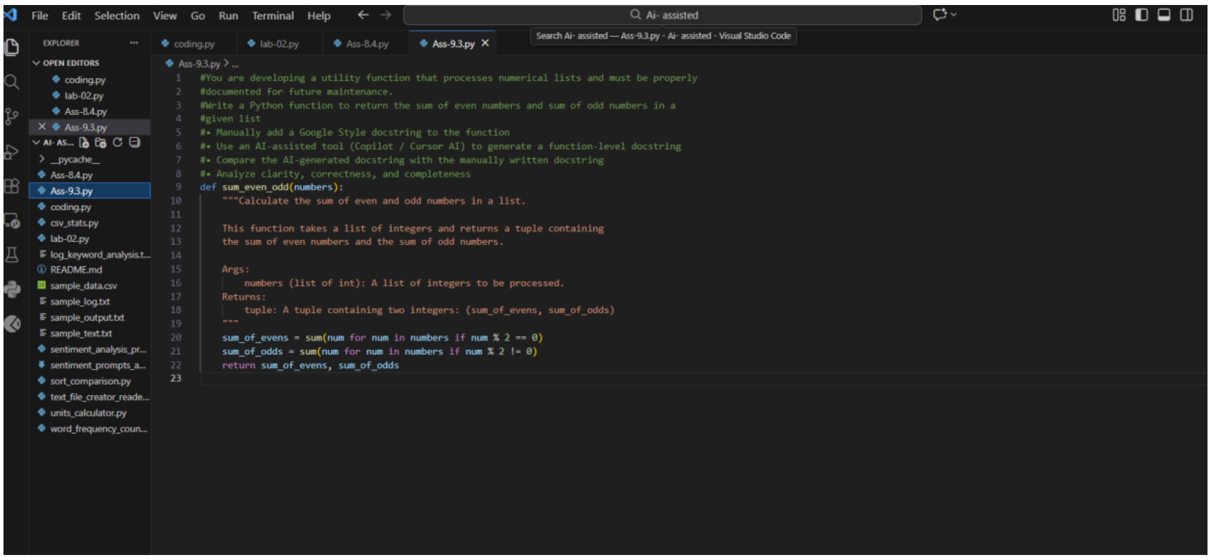
#• Analyze clarity, correctness, and completeness

Code:
```
def sum_even_odd(numbers):
    """Calculate the sum of even and odd numbers in a list.

    This function takes a list of integers and returns a tuple containing
    the sum of even numbers and the sum of odd numbers.

    Args:
        numbers (list of int): A list of integers to be processed.
    Returns:
        tuple: A tuple containing two integers: (sum_of_evens, sum_of_odds)
    """
    sum_of_evens = sum(num for num in numbers if num % 2 == 0)
    sum_of_odds = sum(num for num in numbers if num % 2 != 0)
```

return sum_of_evens, sum_of_odds



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```

Prompt: Task 2: Automatic Inline Comments

#You are developing a student management module that must be easy to understand for new

developers.

#Write a Python program for an sru_student class with the following:

#Attributes: name, roll_no, hostel_status

# Methods: fee_update() and display_details()

# Manually write inline comments for each line or logical block

Use an AI-assisted tool to automatically add inline comments

#Compare manual comments with AI-generated comments

# Identify missing, redundant, or incorrect AI comments

Expected Output

• Python class with manually written inline comments

• AI-generated inline comments added to the same code

• Comparative analysis of manual vs AI comments

• Critical discussion on strengths and limitations of AI-generated comments

Code: class sru_student:

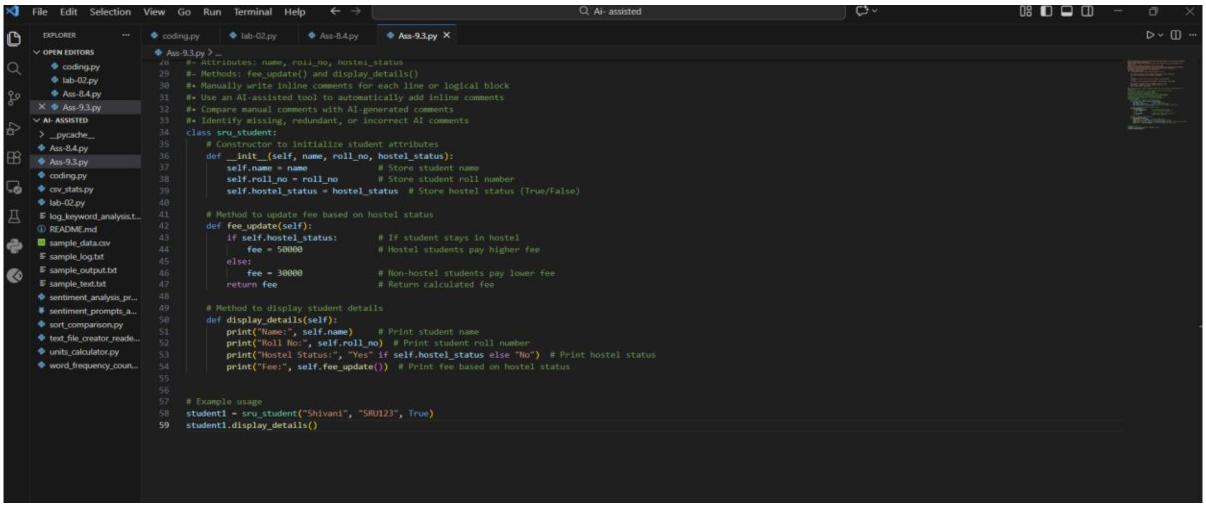
    # Constructor to initialize student attributes

```
    def __init__(self, name, roll_no, hostel_status):
        self.name = name             # Store student name
        self.roll_no = roll_no       # Store student roll number
        self.hostel_status = hostel_status  # Store hostel status (True/False)

    # Method to update fee based on hostel status
    def fee_update(self):
        if self.hostel_status:       # If student stays in hostel
            fee = 50000              # Hostel students pay higher fee
        else:
            fee = 30000              # Non-hostel students pay lower fee
        return fee                   # Return calculated fee

    # Method to display student details
    def display_details(self):
        print("Name:", self.name)     # Print student name
        print("Roll No:", self.roll_no)  # Print student roll number
        print("Hostel Status:", "Yes" if self.hostel_status else "No")  # Print hostel status
        print("Fee:", self.fee_update())  # Print fee based on hostel status

# Example usage
student1 = sru_student("Shivani", "SRU123", True)
student1.display_details()
```



```python
#- Attributes: name, roll_no, hostel_status
#- Methods: fee_update() and display_details()
#• Manually write inline comments for each line or logical block
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#• Compare manual comments with AI-generated comments
#• Identify missing, redundant, or incorrect AI comments
class sru_student:
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Prompt: Task 3: Module-Level and Function-Level Documentation

#You are building a small calculator module that will be shared across multiple projects and requires structured documentation.

# Write a Python script containing 3–4 functions (e.g., add, subtract, multiply, divide)

#Manually write NumPy Style docstrings for each function

#Use AI assistance to generate:

#A module-level docstring

#Individual function-level docstrings

# Compare AI-generated docstrings with manually written ones

# Evaluate documentation structure, accuracy, and readability

Code: """

calculator.py

=============

A simple calculator module providing basic arithmetic operations.

This module can be reused across multiple projects where basic

mathematical functions are required.

"""

```
def add(a, b):
    """
    Add two numbers.

    Parameters
    ----------
    a : float or int
        First number.
    b : float or int
        Second number.

    Returns
    -------
    float or int
        The sum of `a` and `b`.

    Examples
    --------
    >>> add(2, 3)
    5
    """
    return a + b


def subtract(a, b):
    """
    Subtract one number from another.
    Parameters
    ----------
    a : float or int
        First number.
    b : float or int
        Second number to subtract from `a`.

    Returns
    -------
    float or int
        The result of `a - b`.

    Examples
    --------
    >>> subtract(5, 2)
    3
    """
    return a - b


def multiply(a, b):
    """
    Multiply two numbers.

    Parameters
    ----------
    a : float or int
        First number.
    b : float or int
        Second number.

    Returns
    -------
    float or int
        The product of `a` and `b`.

    Examples
    --------
    >>> multiply(4, 3)
    12
    """
    return a * b


def divide(a, b):
    """
    Divide one number by another.

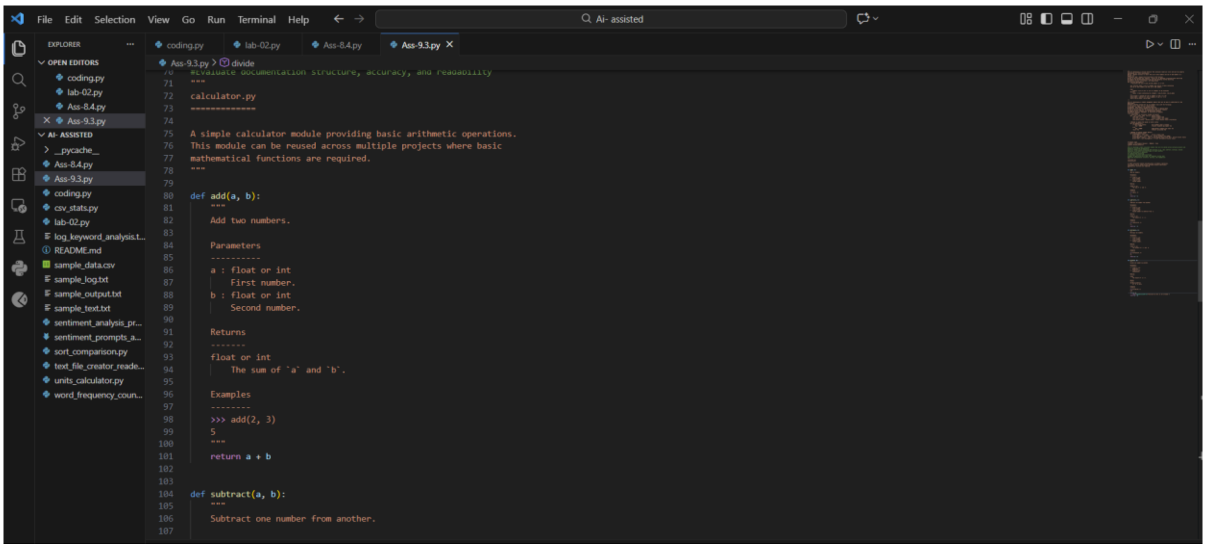
    Parameters
    ----------
    a : float or int
        Numerator.
    b : float or int
        Denominator.

    Returns
```

```
-------
float
    The result of `a / b`.

Raises
------
ZeroDivisionError
    If `b` is zero.

Examples
--------
>>> divide(10, 2)
5.0
"""
if b == 0:
    raise ZeroDivisionError("Division by zero is not allowed.")
return a / b
```



```
#Evaluate documentation structure, accuracy, and readability
"""
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