ASSIGNMENT-2.5

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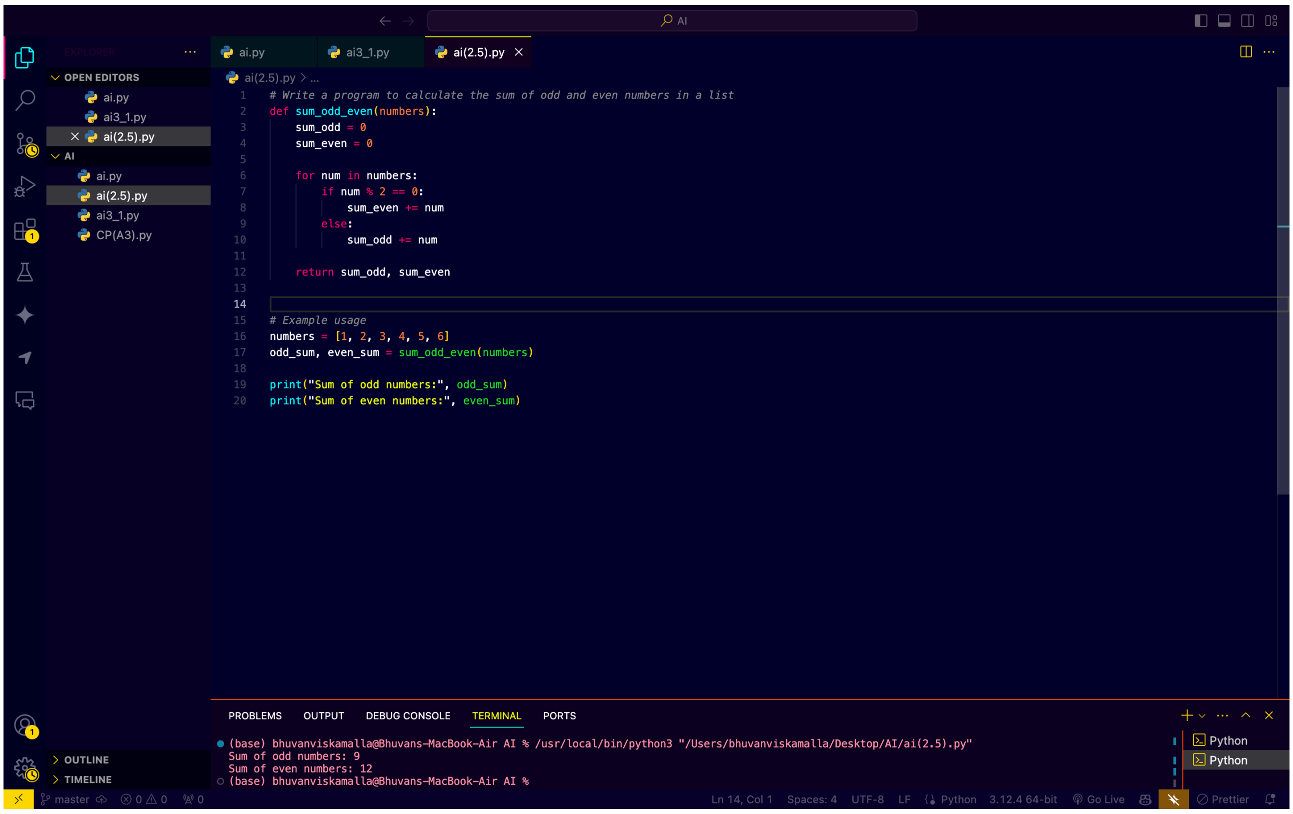
Batch-30

Task-1:

Prompt: Write a program to calculate the sum of odd and even numbers in a list

Code:



```python
# Write a program to calculate the sum of odd and even numbers in a list
def sum_odd_even(numbers):
    sum_odd = 0
    sum_even = 0

    for num in numbers:
        if num % 2 == 0:
            sum_even += num
        else:
            sum_odd += num

    return sum_odd, sum_even


# Example usage
numbers = [1, 2, 3, 4, 5, 6]
odd_sum, even_sum = sum_odd_even(numbers)

print("Sum of odd numbers:", odd_sum)
print("Sum of even numbers:", even_sum)
```

```
(base) bhuvanviskamalla@Bhuvans-MacBook-Air AI % /usr/local/bin/python3 "/Users/bhuvanviskamalla/Desktop/AI/ai(2.5).py"
Sum of odd numbers: 9
Sum of even numbers: 12
(base) bhuvanviskamalla@Bhuvans-MacBook-Air AI %
```

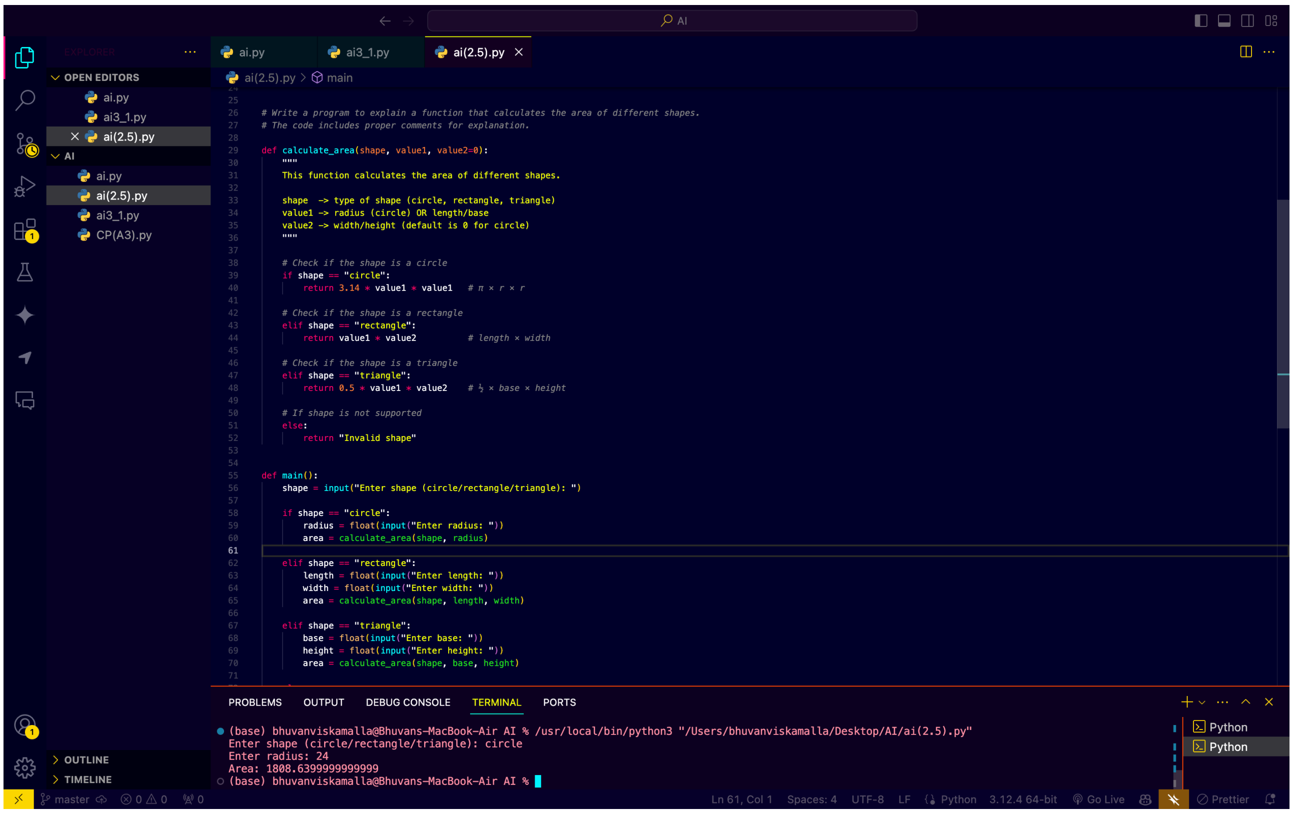
Observation:

The original code works correctly but is written as a single block, making it harder to
reuse and test.

The refactored (AI-improved) code separates logic into a function, improving:
• Readability
• Reusability
• MaintainabilityUsing a function allows the same logic to be reused with different lists without rewriting code.

Task-2:
Prompt: write a program explain a function that calculates the area of different shapes.
The code must include proper comments for explanation.

Code:



```python
# Write a program to explain a function that calculates the area of different shapes.
# The code includes proper comments for explanation.

def calculate_area(shape, value1, value2=0):
    """
    This function calculates the area of different shapes.

    shape  -> type of shape (circle, rectangle, triangle)
    value1 -> radius (circle) OR length/base
    value2 -> width/height (default is 0 for circle)
    """

    # Check if the shape is a circle
    if shape == "circle":
        return 3.14 * value1 * value1   # π × r × r

    # Check if the shape is a rectangle
    elif shape == "rectangle":
        return value1 * value2          # length × width

    # Check if the shape is a triangle
    elif shape == "triangle":
        return 0.5 * value1 * value2    # ½ × base × height

    # If shape is not supported
    else:
        return "Invalid shape"


def main():
    shape = input("Enter shape (circle/rectangle/triangle): ")

    if shape == "circle":
        radius = float(input("Enter radius: "))
        area = calculate_area(shape, radius)

    elif shape == "rectangle":
        length = float(input("Enter length: "))
        width = float(input("Enter width: "))
        area = calculate_area(shape, length, width)

    elif shape == "triangle":
        base = float(input("Enter base: "))
        height = float(input("Enter height: "))
        area = calculate_area(shape, base, height)
```

```
(base) bhuvanviskamalla@Bhuvans-MacBook-Air AI % /usr/local/bin/python3 "/Users/bhuvanviskamalla/Desktop/AI/ai(2.5).py"
Enter shape (circle/rectangle/triangle): circle
Enter radius: 24
Area: 1808.6399999999999
(base) bhuvanviskamalla@Bhuvans-MacBook-Air AI %
```

Observation:

This program uses one function to calculate the area of multiple shapes, which avoids
code duplication.

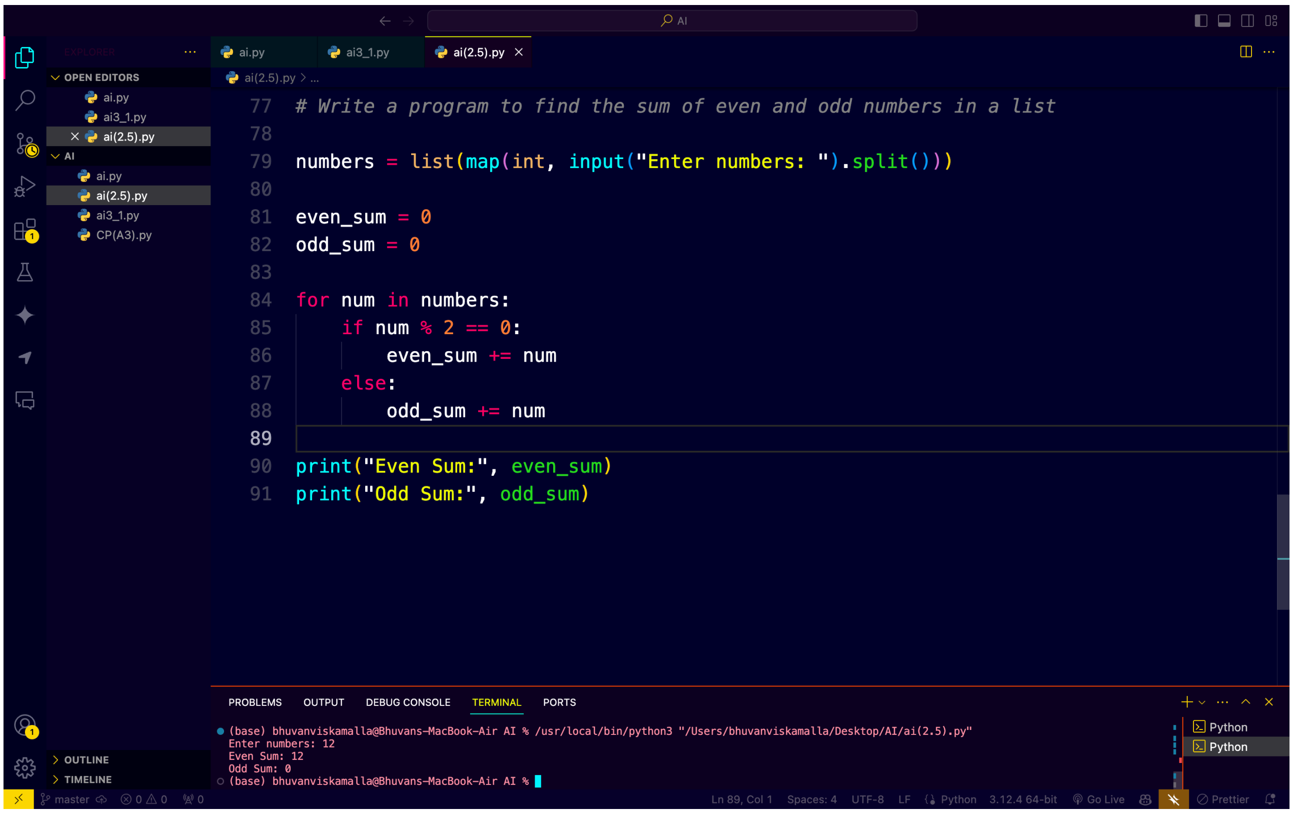
The shape parameter decides which formula to apply.

The function uses conditional statements (if / elif) to select the correct formula.

It improves code clarity, making onboarding easier and faster.

Task:3
Prompt: explain a function that calculates the area of different shapes (curser used)
Shapes. Write a program to find the sum of even and odd numbers in a list

Code:



```python
# Write a program to find the sum of even and odd numbers in a list

numbers = list(map(int, input("Enter numbers: ").split()))

even_sum = 0
odd_sum = 0

for num in numbers:
    if num % 2 == 0:
        even_sum += num
    else:
        odd_sum += num

print("Even Sum:", even_sum)
print("Odd Sum:", odd_sum)
```

```
(base) bhuvanviskamalla@Bhuvans-MacBook-Air AI % /usr/local/bin/python3 "/Users/bhuvanviskamalla/Desktop/AI/ai(2.5).py"
Enter numbers: 12
Even Sum: 12
Odd Sum: 0
(base) bhuvanviskamalla@Bhuvans-MacBook-Air AI %
```

Observation:
The program demonstrates how one function can handle multiple use cases.

Comments clearly explain:

What the function does
Why each condition exists
What each parameter represents
Using comments makes the code junior-developer friendly, which is ideal for
onboarding.

The main () function separates user interaction from business logic, improving
structure.

This style is considered clean, readable, and professional in real-world projects.

Task-4:

Prompt: Based on practical usage and experimentation, compare Gemini, GitHub
Copilot, and Cursor AI in terms of usability and code quality.

Observation:

Gemini is best suited for explanations and learning support. It produces readable,

beginner-friendly code and clear step-by-step reasoning, making it ideal for onboarding

juniors and understanding concepts.GitHub Copilot excels in real-time coding assistance inside IDEs. It is fast, context-

aware, and highly productive for experienced
developers, but its code may lack
explanations.

Cursor AI stands out for prompt sensitivity and
refactoring quality. It responds
strongly to detailed prompts, generating cleaner,
more structured, and optimised code,
making it suitable for improving legacy codebases.
usability, Copilot integrates seamlessly into
workflows, Gemini is conversational and
educational, and Cursor AI offers powerful prompt-
driven refactoring.
code quality, Cursor AI and Copilot generally produce
more professional, production-
ready code, while Gemini focuses on clarity over
optimisation