AI ASSISTED CODING
ASSIGNMENT – 9.2

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BATCH: 04

Task-1: (Documentation – Google-Style Docstrings for Python Functions)

- Task: Use AI to add Google-style docstrings to all functions in a given Python script.
- Instructions:

o Prompt AI to generate docstrings without providing any input-output examples.

o Ensure each docstring includes:

▪ Function description

▪ Parameters with type hints

▪ Return values with type hints

▪ Example usage

o Review the generated docstrings for accuracy and formatting.

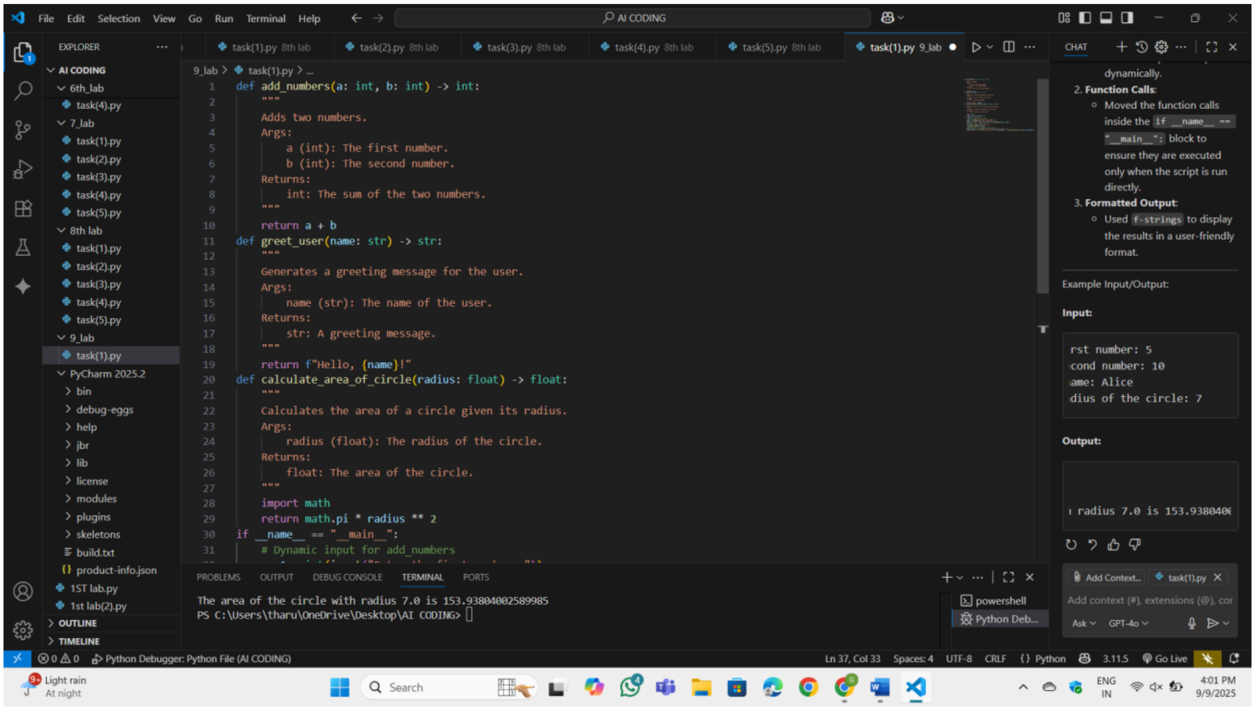
- Expected Output #1:

o A Python script with all functions documented using correctly formatted Google-style docstrings

Prompt: add Google-style docstrings to all functions in a given Python script.

Ensure each docstring includes: Function description, Parameters with type hints, Return values with type hints

Code:



```python
def add_numbers(a: int, b: int) -> int:
    """
    Adds two numbers.
    Args:
        a (int): The first number.
        b (int): The second number.
    Returns:
        int: The sum of the two numbers.
    """
    return a + b
def greet_user(name: str) -> str:
    """
    Generates a greeting message for the user.
    Args:
        name (str): The name of the user.
    Returns:
        str: A greeting message.
    """
    return f"Hello, {name}!"
def calculate_area_of_circle(radius: float) -> float:
    """
    Calculates the area of a circle given its radius.
    Args:
        radius (float): The radius of the circle.
    Returns:
        float: The area of the circle.
    """
    import math
    return math.pi * radius ** 2
if __name__ == "__main__":
    # Dynamic input for add_numbers
```

```
The area of the circle with radius 7.0 is 153.93804002589985
PS C:\Users\tharu\OneDrive\Desktop\AI CODING> 
```

dynamically.

2. **Function Calls**:
   - Moved the function calls inside the `if __name__ == "__main__":` block to ensure they are executed only when the script is run directly.
3. **Formatted Output**:
   - Used `f-strings` to display the results in a user-friendly format.

Example Input/Output:

Input:

```
rst number: 5
cond number: 10
ame: Alice
dius of the circle: 7
```

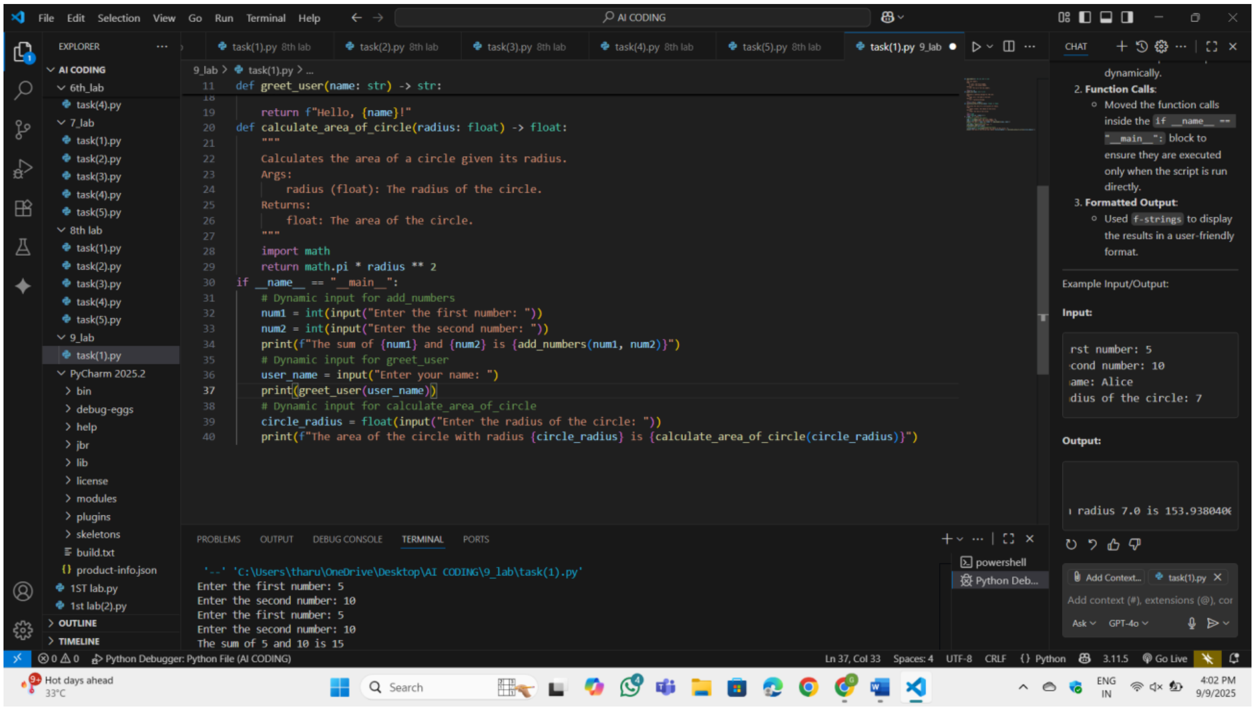
Output:

```
 radius 7.0 is 153.938040
```

Add Context... task(1).py

Add context (#), extensions (@), cor

Ask GPT-4o



```python
def greet_user(name: str) -> str:

    return f"Hello, {name}!"
def calculate_area_of_circle(radius: float) -> float:
    """
    Calculates the area of a circle given its radius.
    Args:
        radius (float): The radius of the circle.
    Returns:
        float: The area of the circle.
    """
    import math
    return math.pi * radius ** 2
if __name__ == "__main__":
    # Dynamic input for add_numbers
    num1 = int(input("Enter the first number: "))
    num2 = int(input("Enter the second number: "))
    print(f"The sum of {num1} and {num2} is {add_numbers(num1, num2)}")
    # Dynamic input for greet_user
    user_name = input("Enter your name: ")
    print(greet_user(user_name))
    # Dynamic input for calculate_area_of_circle
    circle_radius = float(input("Enter the radius of the circle: "))
    print(f"The area of the circle with radius {circle_radius} is {calculate_area_of_circle(circle_radius)}")
```

```
 '--' 'C:\Users\tharu\OneDrive\Desktop\AI CODING\9_lab\task(1).py'
Enter the first number: 5
Enter the second number: 10
Enter the first number: 5
Enter the second number: 10
The sum of 5 and 10 is 15
```

dynamically.

2. **Function Calls**:
   - Moved the function calls inside the `if __name__ == "__main__":` block to ensure they are executed only when the script is run directly.
3. **Formatted Output**:
   - Used `f-strings` to display the results in a user-friendly format.

Example Input/Output:

Input:

rst number: 5
cond number: 10
ame: Alice
dius of the circle: 7

Output:

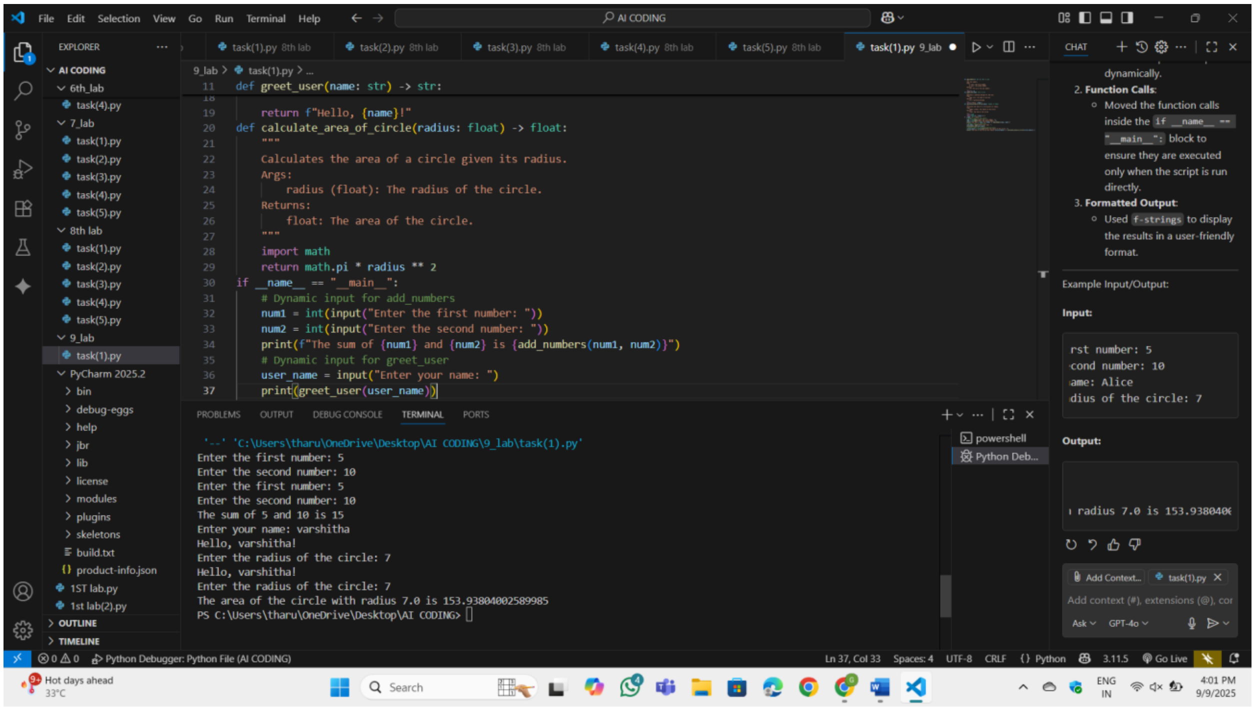
 radius 7.0 is 153.938040

Add Context... task(1).py

Add context (#), extensions (@), cor

Ask GPT-4o

OP:



```python
def greet_user(name: str) -> str:

    return f"Hello, {name}!"
def calculate_area_of_circle(radius: float) -> float:
    """
    Calculates the area of a circle given its radius.
    Args:
        radius (float): The radius of the circle.
    Returns:
        float: The area of the circle.
    """
    import math
    return math.pi * radius ** 2
if __name__ == "__main__":
    # Dynamic input for add_numbers
    num1 = int(input("Enter the first number: "))
    num2 = int(input("Enter the second number: "))
    print(f"The sum of {num1} and {num2} is {add_numbers(num1, num2)}")
    # Dynamic input for greet_user
    user_name = input("Enter your name: ")
    print(greet_user(user_name))
```

```
 '--' 'C:\Users\tharu\OneDrive\Desktop\AI CODING\9_lab\task(1).py'
Enter the first number: 5
Enter the second number: 10
Enter the first number: 5
Enter the second number: 10
The sum of 5 and 10 is 15
Enter your name: varshitha
Hello, varshitha!
Enter the radius of the circle: 7
Hello, varshitha!
Enter the radius of the circle: 7
The area of the circle with radius 7.0 is 153.93804002589985
PS C:\Users\tharu\OneDrive\Desktop\AI CODING> 
```

dynamically.

2. **Function Calls**:
   - Moved the function calls inside the `if __name__ == "__main__":` block to ensure they are executed only when the script is run directly.
3. **Formatted Output**:
   - Used `f-strings` to display the results in a user-friendly format.

Example Input/Output:

Input:

```
rst number: 5
cond number: 10
ame: Alice
dius of the circle: 7
```

Output:

```
radius 7.0 is 153.938040
```

Observation:

Added input() prompts for each function to allow the user to provide input dynamically. Moved the function calls inside the if __name__ == "__main__": block to ensure they are executed only when the script is run directly. Used f-strings to display the results in a user-friendly format.

Task-2: (Documentation – Inline Comments for Complex Logic)

- Task: Use AI to add meaningful inline comments to a Python program explaining only complex logic parts.
- Instructions:

o Provide a Python script without comments to the AI.

o Instruct AI to skip obvious syntax explanations and focus only on tricky or non-intuitive code sections.

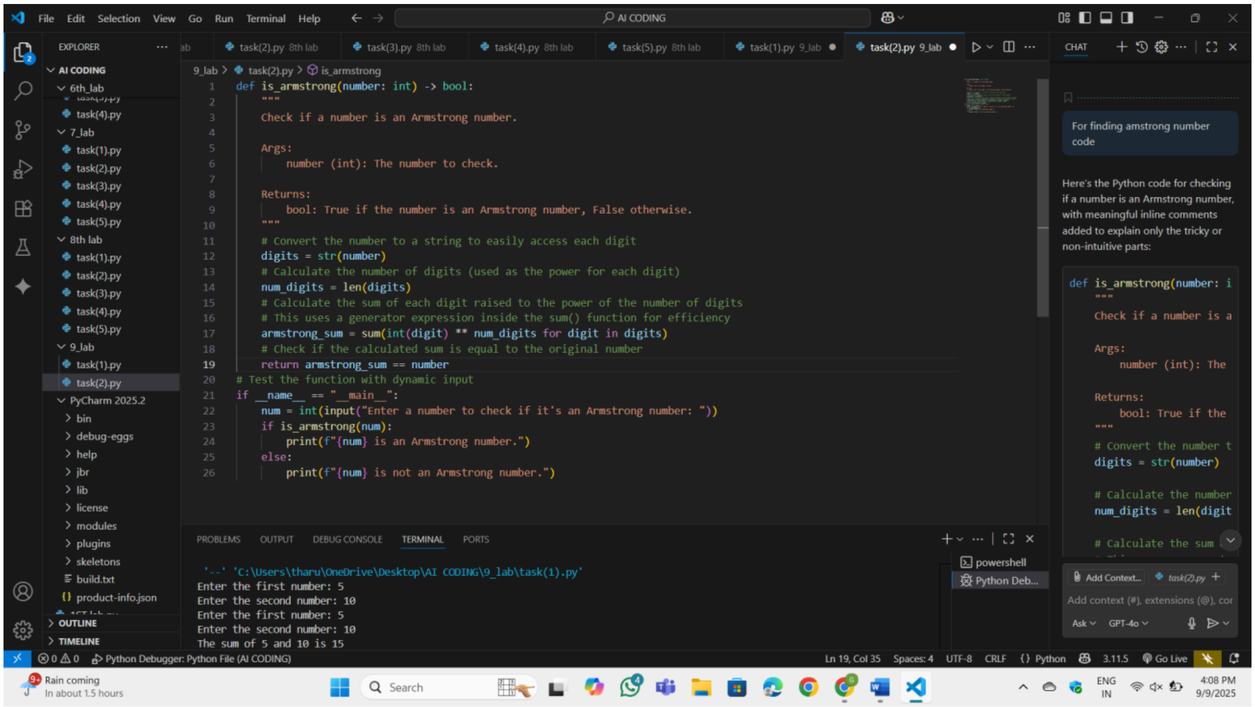
o Verify that comments improve code readability and maintainability.

- Expected Output #2:

o Python code with concise, context-aware inline comments for complex logic blocks

Prompt: for the code I provided focus only on tricky or non-intuitive code sections. And add meaningful inline comments to a Python program explaining only complex logic parts

Code:



```python
def is_armstrong(number: int) -> bool:
    """
    Check if a number is an Armstrong number.

    Args:
        number (int): The number to check.

    Returns:
        bool: True if the number is an Armstrong number, False otherwise.
    """
    # Convert the number to a string to easily access each digit
    digits = str(number)
    # Calculate the number of digits (used as the power for each digit)
    num_digits = len(digits)
    # Calculate the sum of each digit raised to the power of the number of digits
    # This uses a generator expression inside the sum() function for efficiency
    armstrong_sum = sum(int(digit) ** num_digits for digit in digits)
    # Check if the calculated sum is equal to the original number
    return armstrong_sum == number
# Test the function with dynamic input
if __name__ == "__main__":
    num = int(input("Enter a number to check if it's an Armstrong number: "))
    if is_armstrong(num):
        print(f"{num} is an Armstrong number.")
    else:
        print(f"{num} is not an Armstrong number.")
```

```
 '--' 'C:\Users\tharu\OneDrive\Desktop\AI CODING\9_lab\task(1).py'
Enter the first number: 5
Enter the second number: 10
Enter the first number: 5
Enter the second number: 10
The sum of 5 and 10 is 15
```

For finding amstrong number code

Here's the Python code for checking if a number is an Armstrong number, with meaningful inline comments added to explain only the tricky or non-intuitive parts:

```
def is_armstrong(number: i
    """
    Check if a number is a

    Args:
        number (int): The

    Returns:
        bool: True if the
    """
    # Convert the number t
    digits = str(number)

    # Calculate the number
    num_digits = len(digit

    # Calculate the sum
```

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9_lab
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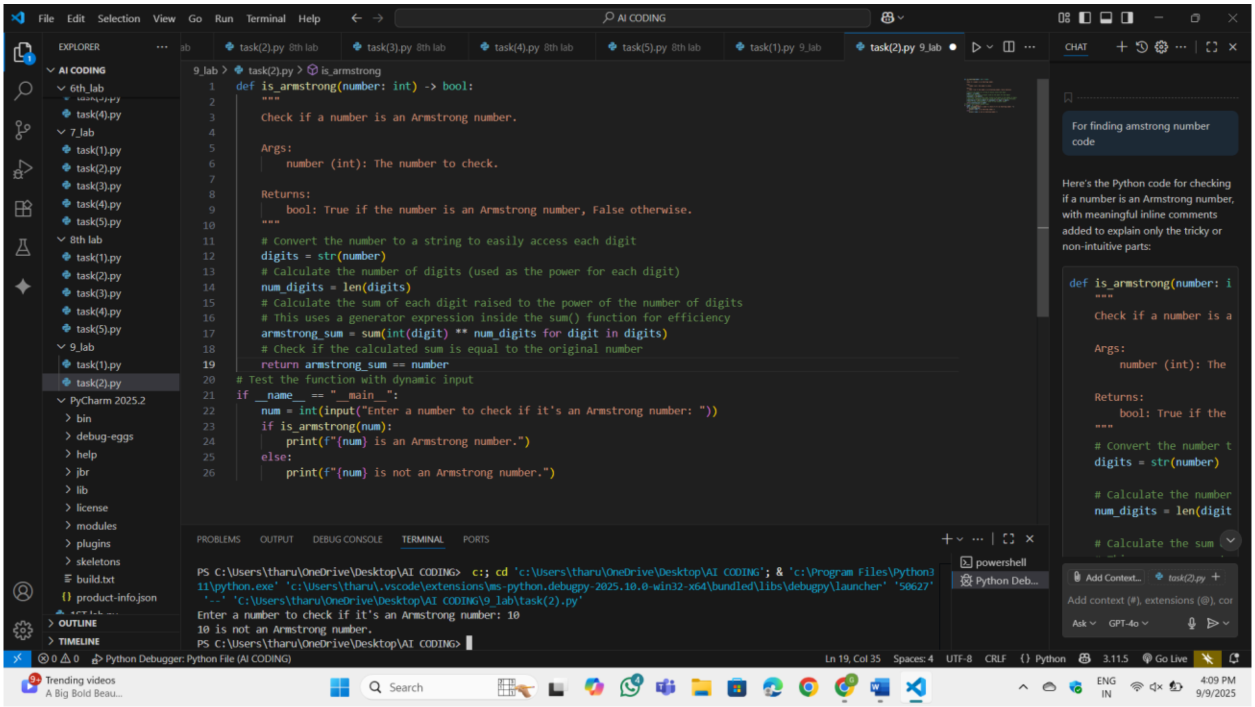
OP:



```python
def is_armstrong(number: int) -> bool:
    """
    Check if a number is an Armstrong number.

    Args:
        number (int): The number to check.

    Returns:
        bool: True if the number is an Armstrong number, False otherwise.
    """
    # Convert the number to a string to easily access each digit
    digits = str(number)
    # Calculate the number of digits (used as the power for each digit)
    num_digits = len(digits)
    # Calculate the sum of each digit raised to the power of the number of digits
    # This uses a generator expression inside the sum() function for efficiency
    armstrong_sum = sum(int(digit) ** num_digits for digit in digits)
    # Check if the calculated sum is equal to the original number
    return armstrong_sum == number
# Test the function with dynamic input
if __name__ == "__main__":
    num = int(input("Enter a number to check if it's an Armstrong number: "))
    if is_armstrong(num):
        print(f"{num} is an Armstrong number.")
    else:
        print(f"{num} is not an Armstrong number.")
```

```
PS C:\Users\tharu\OneDrive\Desktop\AI CODING>  c:; cd 'c:\Users\tharu\OneDrive\Desktop\AI CODING'; & 'c:\Program Files\Python3
11\python.exe' 'c:\Users\tharu\.vscode\extensions\ms-python.debugpy-2025.10.0-win32-x64\bundled\libs\debugpy\launcher' '50627'
 '--' 'C:\Users\tharu\OneDrive\Desktop\AI CODING\9_lab\task(2).py'
Enter a number to check if it's an Armstrong number: 10
10 is not an Armstrong number.
PS C:\Users\tharu\OneDrive\Desktop\AI CODING> 
```

For finding amstrong number code

Here's the Python code for checking if a number is an Armstrong number, with meaningful inline comments added to explain only the tricky or non-intuitive parts:

Observation:

digits = str(number): Converts the number to a string to allow iteration over its digits. num_digits = len(digits): Calculates the number of digits in the number, which determines the power to which each digit is raised. sum(int(digit) ** num_digits for digit in digits): Uses a generator expression to calculate the sum of each digit raised to the power of num_digits. This avoids creating an intermediate list, making the code more memory-efficient. return armstrong_sum == number: Compares the calculated sum to the original number to determine if it’s an Armstrong number

Task-3: (Documentation – Module-Level Documentation)

- Task: Use AI to create a module-level docstring summarizing the purpose, dependencies, and main functions/classes of a Python file.

- Instructions:

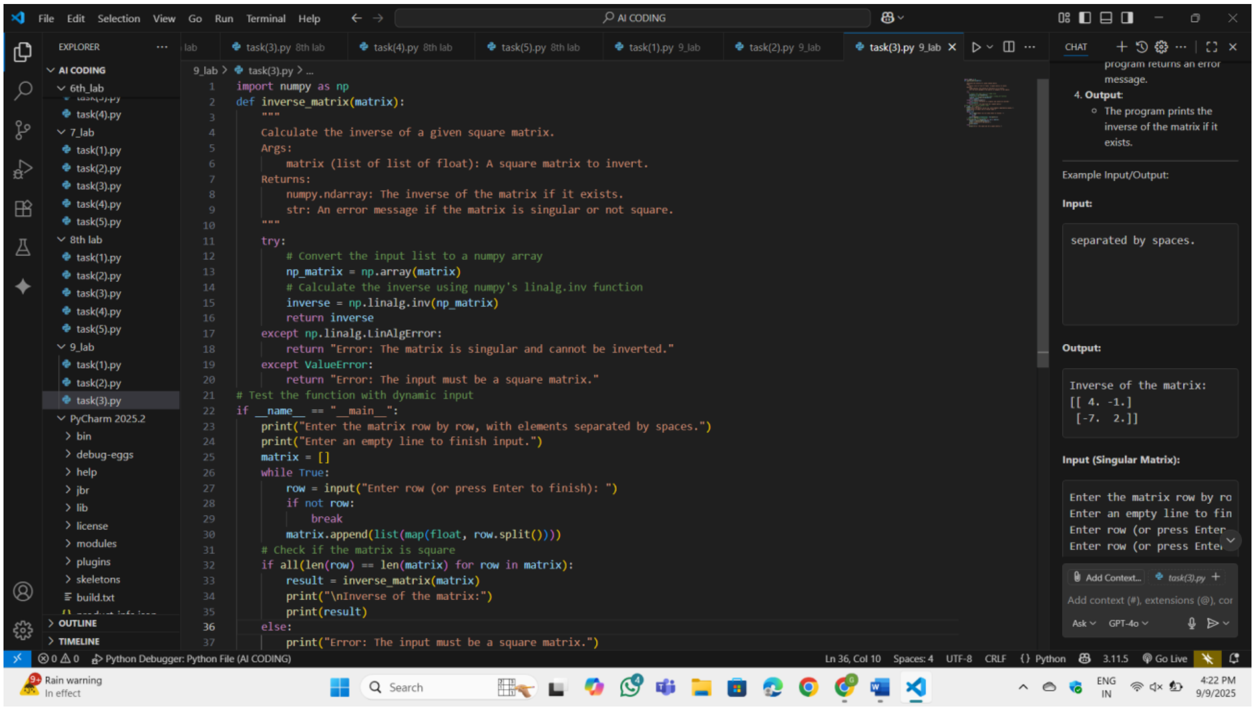
o Supply the entire Python file to AI.

o Instruct AI to write a single multi-line docstring at the top of the file.

o Ensure the docstring clearly describes functionality and usage without rewriting the entire code

Prompt: for the given code describes functionality and usage without rewriting the entire code

Code:



```python
import numpy as np
def inverse_matrix(matrix):
    """
    Calculate the inverse of a given square matrix.
    Args:
        matrix (list of list of float): A square matrix to invert.
    Returns:
        numpy.ndarray: The inverse of the matrix if it exists.
        str: An error message if the matrix is singular or not square.
    """
    try:
        # Convert the input list to a numpy array
        np_matrix = np.array(matrix)
        # Calculate the inverse using numpy's linalg.inv function
        inverse = np.linalg.inv(np_matrix)
        return inverse
    except np.linalg.LinAlgError:
        return "Error: The matrix is singular and cannot be inverted."
    except ValueError:
        return "Error: The input must be a square matrix."
# Test the function with dynamic input
if __name__ == "__main__":
    print("Enter the matrix row by row, with elements separated by spaces.")
    print("Enter an empty line to finish input.")
    matrix = []
    while True:
        row = input("Enter row (or press Enter to finish): ")
        if not row:
            break
        matrix.append(list(map(float, row.split())))
    # Check if the matrix is square
    if all(len(row) == len(matrix) for row in matrix):
        result = inverse_matrix(matrix)
        print("\nInverse of the matrix:")
        print(result)
    else:
        print("Error: The input must be a square matrix.")
```

program returns an error message.

4. **Output**:
    - The program prints the inverse of the matrix if it exists.

Example Input/Output:

Input:

```
separated by spaces.
```

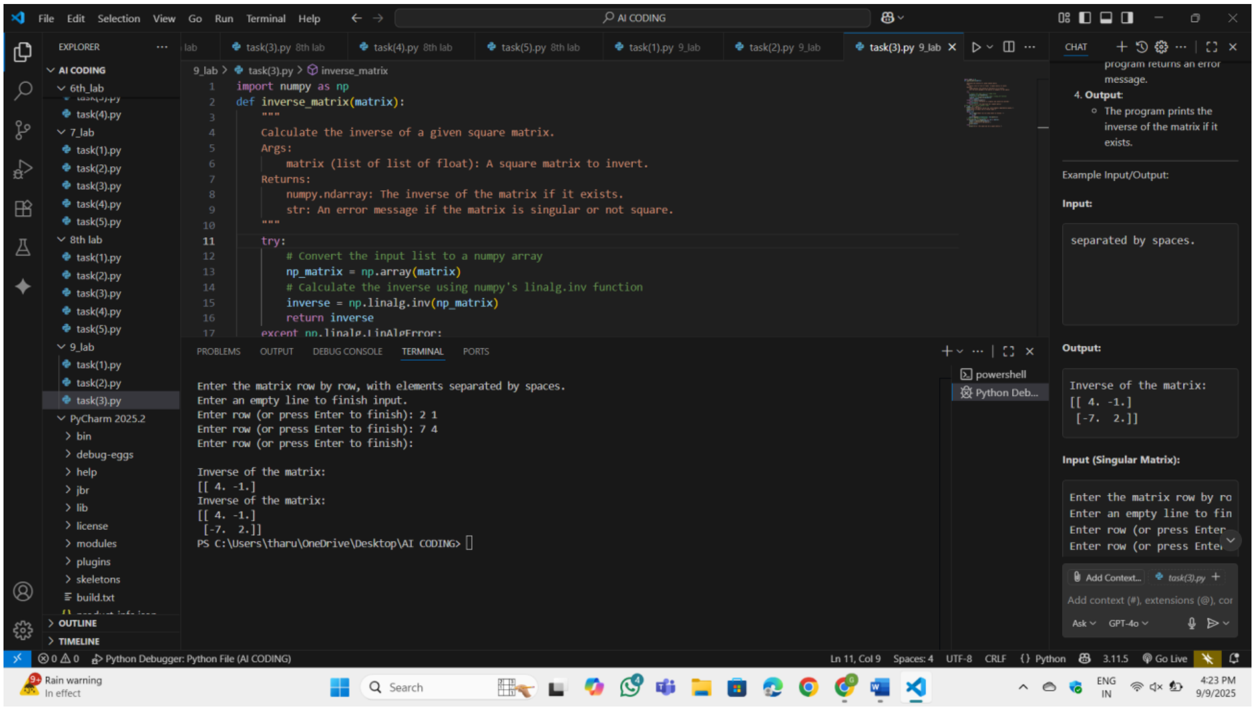
Output:

```
Inverse of the matrix:
[[ 4. -1.]
 [-7.  2.]]
```

Input (Singular Matrix):

```
Enter the matrix row by ro
Enter an empty line to fin
Enter row (or press Enter
Enter row (or press Ente
```

OP:



```python
import numpy as np
def inverse_matrix(matrix):
    """
    Calculate the inverse of a given square matrix.
    Args:
        matrix (list of list of float): A square matrix to invert.
    Returns:
        numpy.ndarray: The inverse of the matrix if it exists.
        str: An error message if the matrix is singular or not square.
    """
    try:
        # Convert the input list to a numpy array
        np_matrix = np.array(matrix)
        # Calculate the inverse using numpy's linalg.inv function
        inverse = np.linalg.inv(np_matrix)
        return inverse
    except np.linalg.LinAlgError:
```

```
Enter the matrix row by row, with elements separated by spaces.
Enter an empty line to finish input.
Enter row (or press Enter to finish): 2 1
Enter row (or press Enter to finish): 7 4
Enter row (or press Enter to finish):

Inverse of the matrix:
[[ 4. -1.]
Inverse of the matrix:
[[ 4. -1.]
 [-7.  2.]]
PS C:\Users\tharu\OneDrive\Desktop\AI CODING> 
```

program returns an error message.

4. **Output**:
    - The program prints the inverse of the matrix if it exists.

Example Input/Output:

Input:

```
separated by spaces.
```

Output:

```
Inverse of the matrix:
[[ 4. -1.]
 [-7.  2.]]
```

Input (Singular Matrix):

```
Enter the matrix row by ro
Enter an empty line to fin
Enter row (or press Enter
Enter row (or press Ente
```

Observation:

The numpy library is used for matrix operations.

The np.linalg.inv() function calculates the inverse of a matrix. The user inputs the matrix row by row. The input is converted into a list of lists, where each inner list represents a row. If the matrix is not square, the program returns an error message. If the matrix is singular (determinant = 0), the program returns an error message. The program prints the inverse of the matrix if it exists.

Task-4: (Documentation – Convert Comments to Structured Docstrings)

- Task: Use AI to transform existing inline comments into structured function docstrings following Google style.
- Instructions:

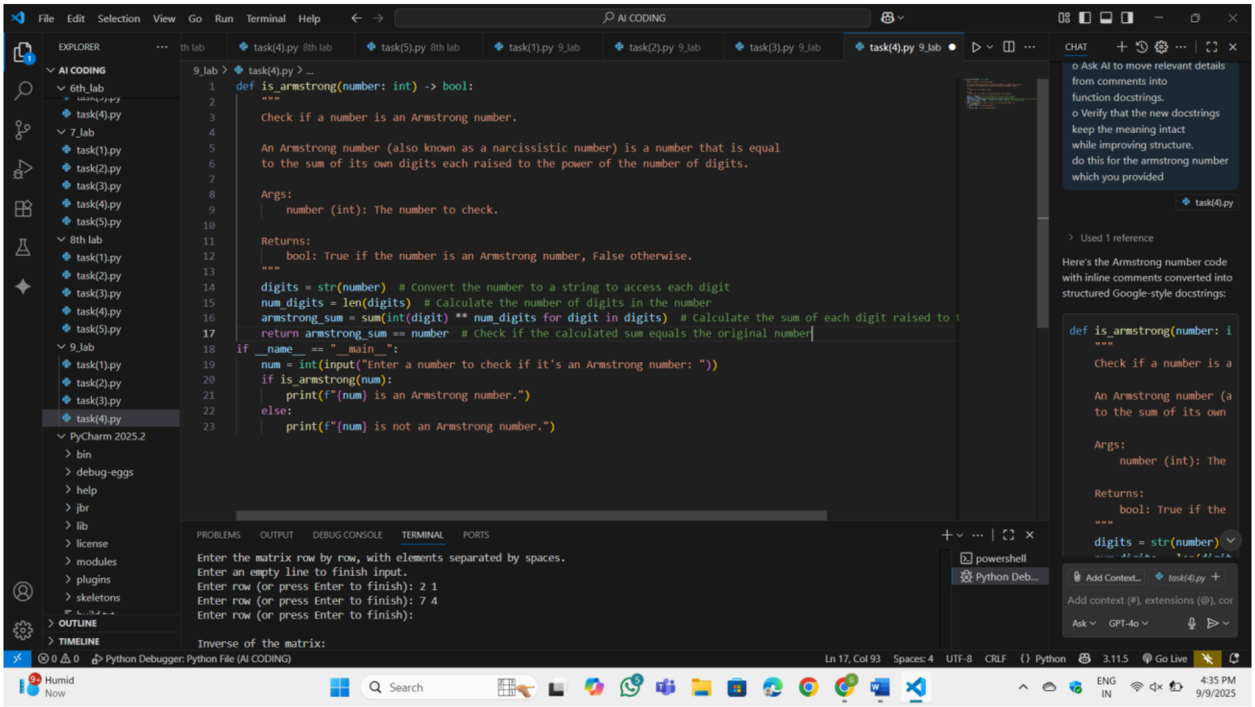
o Provide AI with Python code containing inline comments.

o Ask AI to move relevant details from comments into

function docstrings.
o Verify that the new docstrings keep the meaning intact
while improving structure.
• Expected Output #4:
o Python code with comments replaced by clear,
standardized docstrings

Prompt: convert Comments to Structured Docstrings for the code which I provided.

Code:



```python
def is_armstrong(number: int) -> bool:
    """
    Check if a number is an Armstrong number.

    An Armstrong number (also known as a narcissistic number) is a number that is equal
    to the sum of its own digits each raised to the power of the number of digits.

    Args:
        number (int): The number to check.

    Returns:
        bool: True if the number is an Armstrong number, False otherwise.
    """
    digits = str(number)  # Convert the number to a string to access each digit
    num_digits = len(digits)  # Calculate the number of digits in the number
    armstrong_sum = sum(int(digit) ** num_digits for digit in digits)  # Calculate the sum of each digit raised to t
    return armstrong_sum == number  # Check if the calculated sum equals the original number
if __name__ == "__main__":
    num = int(input("Enter a number to check if it's an Armstrong number: "))
    if is_armstrong(num):
        print(f"{num} is an Armstrong number.")
    else:
        print(f"{num} is not an Armstrong number.")
```

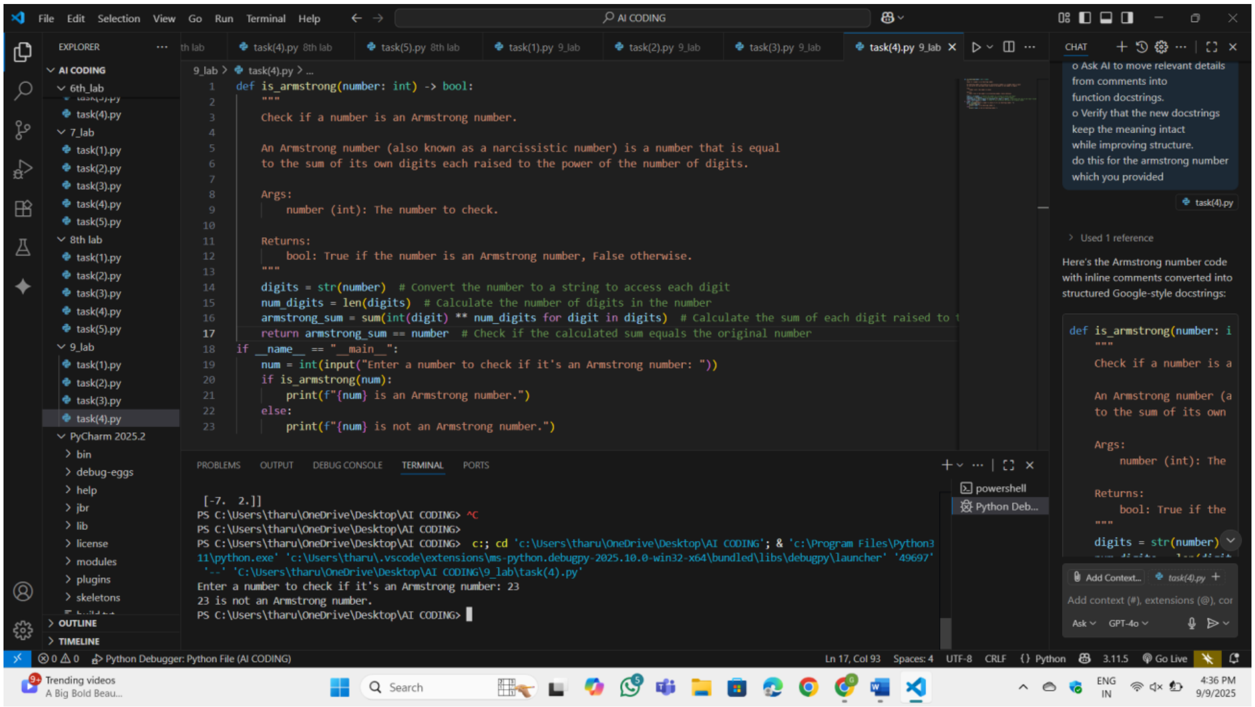
```
Enter the matrix row by row, with elements separated by spaces.
Enter an empty line to finish input.
Enter row (or press Enter to finish): 2 1
Enter row (or press Enter to finish): 7 4
Enter row (or press Enter to finish):

Inverse of the matrix:
```

o Ask AI to move relevant details from comments into function docstrings.
o Verify that the new docstrings keep the meaning intact while improving structure.
do this for the armstrong number which you provided

Here's the Armstrong number code with inline comments converted into structured Google-style docstrings:

```python
def is_armstrong(number: i
    """
    Check if a number is a

    An Armstrong number (a
    to the sum of its own

    Args:
        number (int): The

    Returns:
        bool: True if the
    """
    digits = str(number)
```

OP:



```python
def is_armstrong(number: int) -> bool:
    """
    Check if a number is an Armstrong number.

    An Armstrong number (also known as a narcissistic number) is a number that is equal
    to the sum of its own digits each raised to the power of the number of digits.

    Args:
        number (int): The number to check.

    Returns:
        bool: True if the number is an Armstrong number, False otherwise.
    """
    digits = str(number)  # Convert the number to a string to access each digit
    num_digits = len(digits)  # Calculate the number of digits in the number
    armstrong_sum = sum(int(digit) ** num_digits for digit in digits)  # Calculate the sum of each digit raised to
    return armstrong_sum == number  # Check if the calculated sum equals the original number
if __name__ == "__main__":
    num = int(input("Enter a number to check if it's an Armstrong number: "))
    if is_armstrong(num):
        print(f"{num} is an Armstrong number.")
    else:
        print(f"{num} is not an Armstrong number.")
```

```
 [-7.  2.]]
PS C:\Users\tharu\OneDrive\Desktop\AI CODING> ^C
PS C:\Users\tharu\OneDrive\Desktop\AI CODING>
PS C:\Users\tharu\OneDrive\Desktop\AI CODING>  c:; cd 'c:\Users\tharu\OneDrive\Desktop\AI CODING'; & 'c:\Program Files\Python3
11\python.exe' 'c:\Users\tharu\.vscode\extensions\ms-python.debugpy-2025.10.0-win32-x64\bundled\libs\debugpy\launcher' '49697'
 '--' 'C:\Users\tharu\OneDrive\Desktop\AI CODING\9_lab\task(4).py'
Enter a number to check if it's an Armstrong number: 23
23 is not an Armstrong number.
PS C:\Users\tharu\OneDrive\Desktop\AI CODING> 
```

o Ask AI to move relevant details from comments into function docstrings.
o Verify that the new docstrings keep the meaning intact while improving structure.
do this for the armstrong number which you provided

Here's the Armstrong number code with inline comments converted into structured Google-style docstrings:

```
def is_armstrong(number: i
    """
    Check if a number is a

    An Armstrong number (a
    to the sum of its own

    Args:
        number (int): The

    Returns:
        bool: True if the
    """
    digits = str(number)
```

Observation:

Removed inline comments from the code. Added a detailed docstring to the is_armstrong function. The docstring explains: **Purpose**: What the function does. **Args**: The input parameter and its type. **Returns**: The return value and its type. **Logic**: A brief explanation of the Armstrong number concept. The docstring improves the structure and readability of the code while keeping the meaning intact

Task-5: (Documentation – Review and Correct Docstrings)

- Task: Use AI to identify and correct inaccuracies in existing docstrings.
- Instructions:

o Provide Python code with outdated or incorrect docstrings.

o Instruct AI to rewrite each docstring to match the current code behavior.

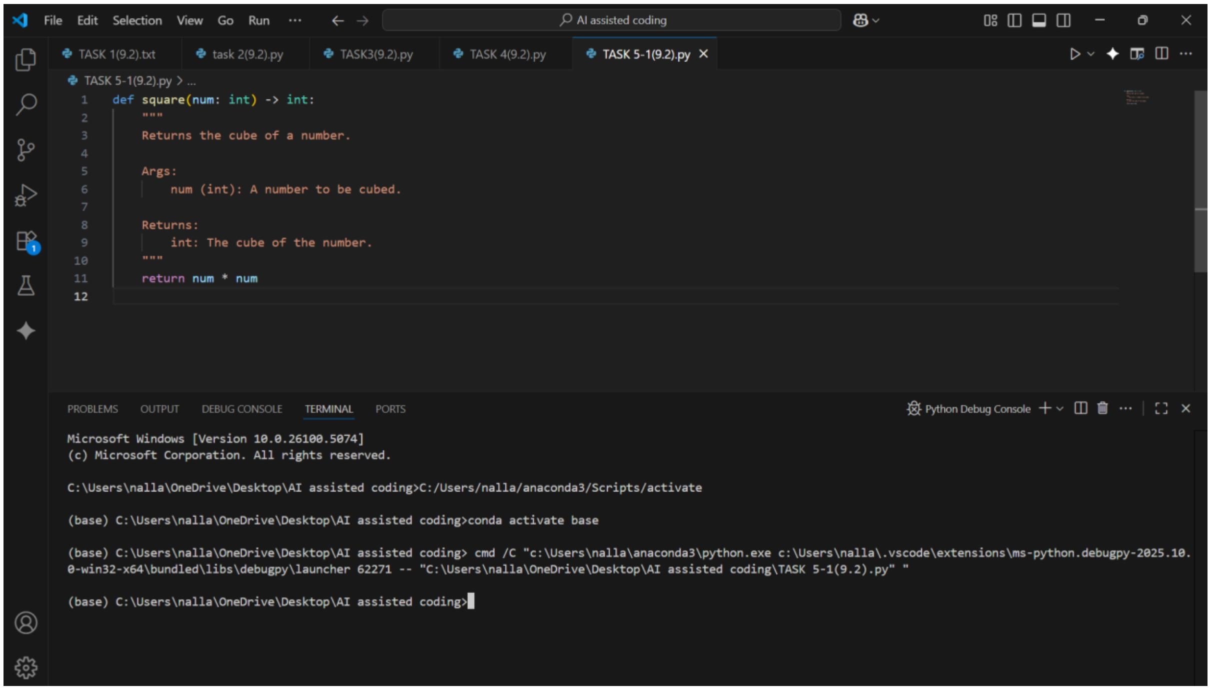
o Ensure corrections follow Google-style formatting.

• Expected Output #5:

o Python file with updated, accurate, and standardized docstrings

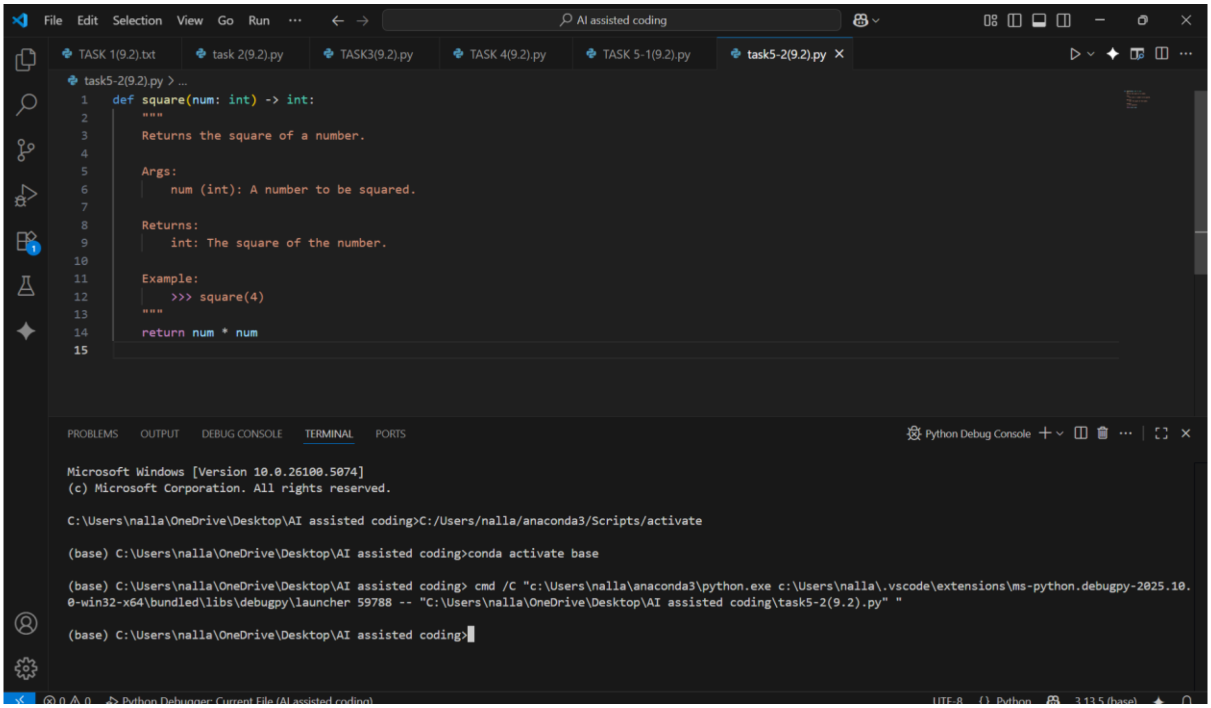
Prompt: Identify and correct inaccuracies in existing docstrings.

Code:



```python
def square(num: int) -> int:
    """
    Returns the cube of a number.

    Args:
        num (int): A number to be cubed.

    Returns:
        int: The cube of the number.
    """
    return num * num

```

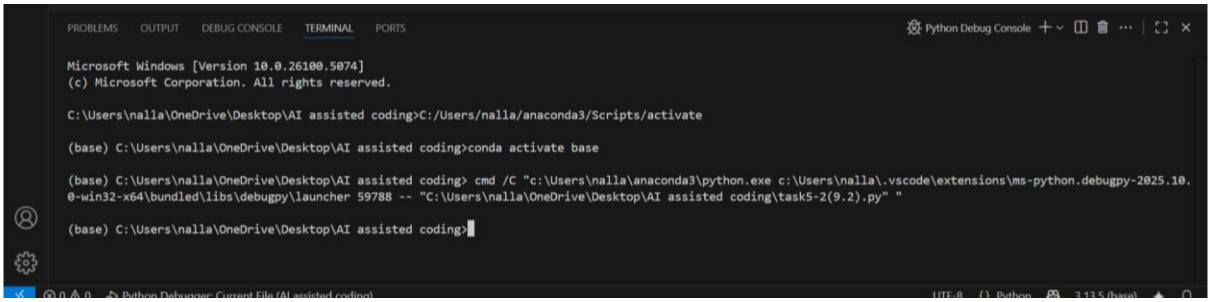
```
Microsoft Windows [Version 10.0.26100.5074]
(c) Microsoft Corporation. All rights reserved.

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 62271 -- "C:\Users\nalla\OneDrive\Desktop\AI assisted coding\TASK 5-1(9.2).py" "

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



```python
def square(num: int) -> int:
    """
    Returns the square of a number.

    Args:
        num (int): A number to be squared.

    Returns:
        int: The square of the number.

    Example:
        >>> square(4)
    """
    return num * num

```

```
Microsoft Windows [Version 10.0.26100.5074]
(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 59788 -- "C:\Users\nalla\OneDrive\Desktop\AI assisted coding\task5-2(9.2).py" "

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

OP:



```
Microsoft Windows [Version 10.0.26100.5074]
(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 59788 -- "C:\Users\nalla\OneDrive\Desktop\AI assisted coding\task5-2(9.2).py" "

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

Observation:

The main issue is docstring drift—the code changes but the documentation doesn't. Correcting the docstrings to Google style makes the functions clearer, accurate, and easier to maintain

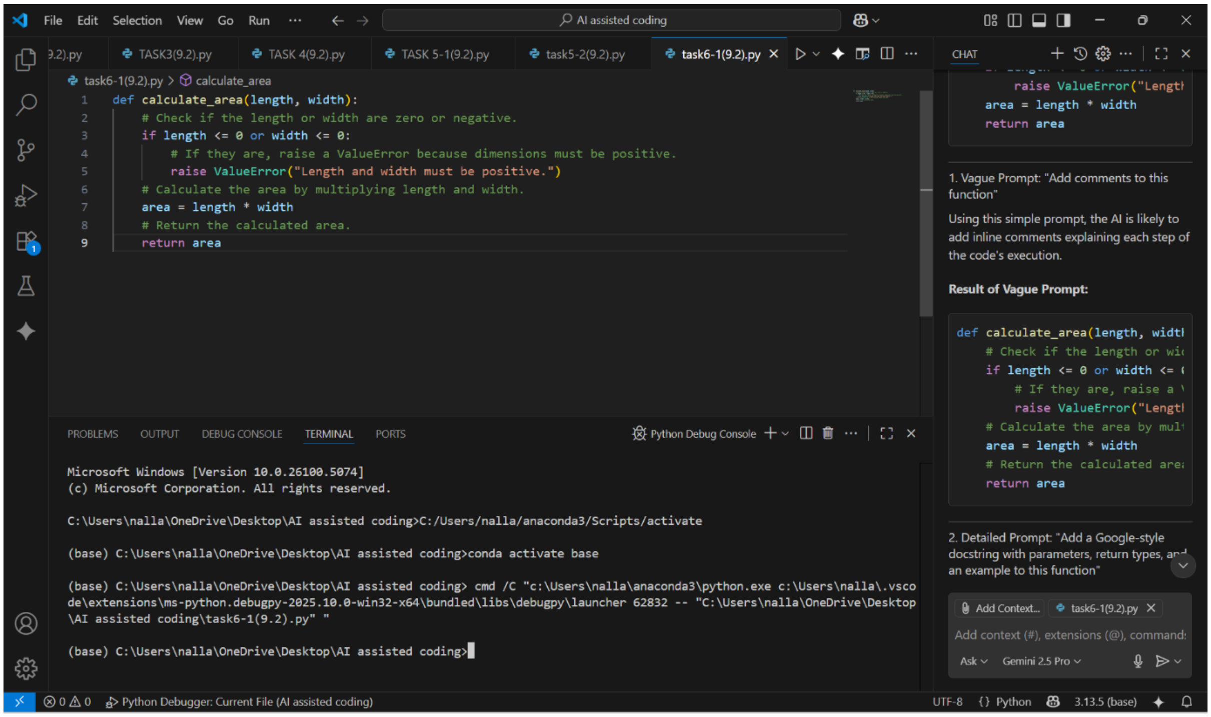
Task-6:

(Documentation – Prompt Comparison
Experiment)

- Task: Compare documentation output from a vague prompt and a detailed prompt for the same Python function.
- Instructions:
  - Create two prompts: one simple (“Add comments to this function”) and one detailed (“Add Google-style docstrings with parameters, return types, and examples”).
  - Use AI to process the same Python function with both prompts.
  - Analyze and record differences in quality, accuracy, and completeness.
- Expected Output #6:
  - A comparison table showing the results from both prompts with observations

Prompt: Compare documentation output from a vague prompt and a detailed prompt for the same Python function. Create two prompts: one simple (“Add comments to this function”) and one detailed (“Add Google-style docstrings with parameters, return types, and examples”).

Code:



```python
def calculate_area(length, width):
    # Check if the length or width are zero or negative.
    if length <= 0 or width <= 0:
        # If they are, raise a ValueError because dimensions must be positive.
        raise ValueError("Length and width must be positive.")
    # Calculate the area by multiplying length and width.
    area = length * width
    # Return the calculated area.
    return area
```

```
Microsoft Windows [Version 10.0.26100.5074]
(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\.vsco
de\extensions\ms-python.debugpy-2025.10.0-win32-x64\bundled\libs\debugpy\launcher 62832 -- "C:\Users\nalla\OneDrive\Desktop
\AI assisted coding\task6-1(9.2).py" "

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

```
        raise ValueError("Lengt
    area = length * width
    return area
```

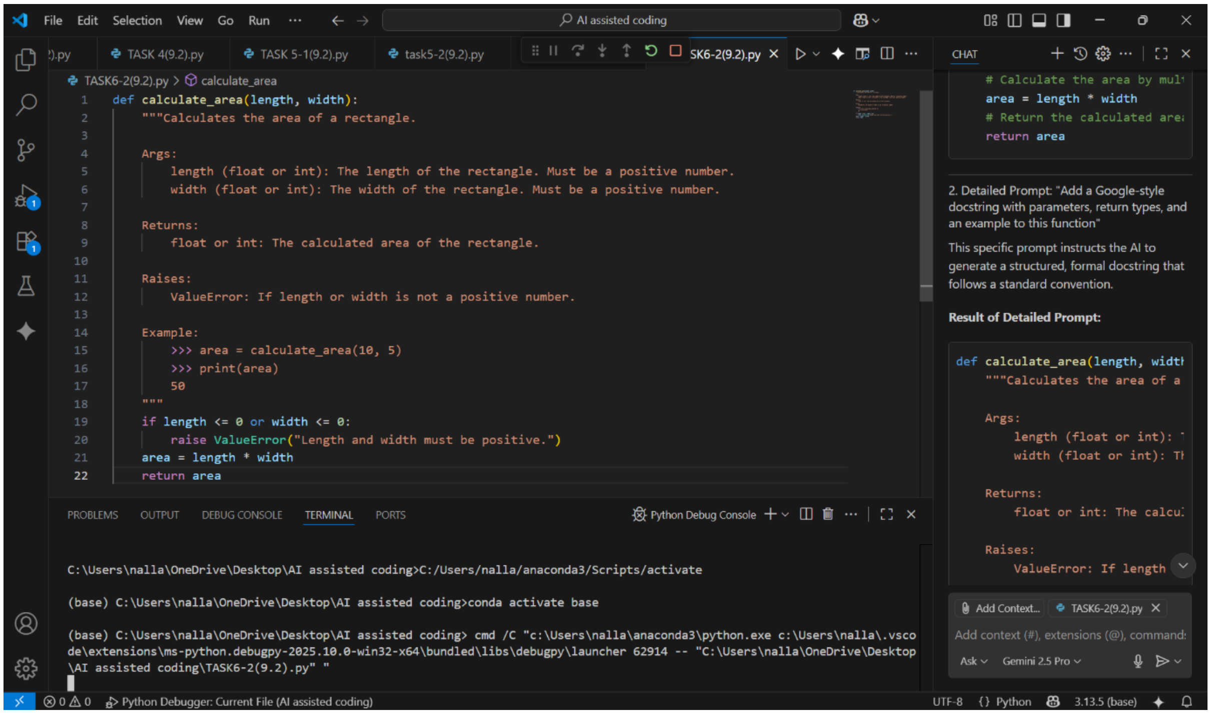
1. Vague Prompt: "Add comments to this function"

Using this simple prompt, the AI is likely to add inline comments explaining each step of the code's execution.

Result of Vague Prompt:

```
def calculate_area(length, widt
    # Check if the length or wi
    if length <= 0 or width <= 
        # If they are, raise a 
        raise ValueError("Lengt
    # Calculate the area by mul
    area = length * width
    # Return the calculated are
    return area
```

2. Detailed Prompt: "Add a Google-style docstring with parameters, return types, an an example to this function"


File Edit Selection View Go Run
AI assisted coding
).py
TASK 4(9.2).py
TASK 5-1(9.2).py
task5-2(9.2).py
SK6-2(9.2).py
TASK6-2(9.2).py > calculate_area
CHAT
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS
Python Debug Console
Add Context...
TASK6-2(9.2).py
Add context (#), extensions (@), command:
Ask
Gemini 2.5 Pro
⊗ 0 ⚠ 0
Python Debugger: Current File (AI assisted coding)
UTF-8
{} Python
3.13.5 (base)

```python
def calculate_area(length, width):
    """Calculates the area of a rectangle.

    Args:
        length (float or int): The length of the rectangle. Must be a positive number.
        width (float or int): The width of the rectangle. Must be a positive number.

    Returns:
        float or int: The calculated area of the rectangle.

    Raises:
        ValueError: If length or width is not a positive number.

    Example:
        >>> area = calculate_area(10, 5)
        >>> print(area)
        50
    """
    if length <= 0 or width <= 0:
        raise ValueError("Length and width must be positive.")
    area = length * width
    return area
```

```
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\.vsco
de\extensions\ms-python.debugpy-2025.10.0-win32-x64\bundled\libs\debugpy\launcher 62914 -- "C:\Users\nalla\OneDrive\Desktop
\AI assisted coding\TASK6-2(9.2).py" "
```

```
    # Calculate the area by mul
    area = length * width
    # Return the calculated are
    return area
```

2. Detailed Prompt: "Add a Google-style docstring with parameters, return types, and an example to this function"

This specific prompt instructs the AI to generate a structured, formal docstring that follows a standard convention.

Result of Detailed Prompt:

```
def calculate_area(length, widt
    """Calculates the area of a

    Args:
        length (float or int): 
        width (float or int): Th

    Returns:
        float or int: The calcu

    Raises:
        ValueError: If length
```

OP:

Observation:

A detailed and specific prompt yields a vastly superior documentation result. It moves beyond simple line-by-line explanations to create structured, comprehensive, and professional documentation that significantly improves code maintainability and usability.