AI ASSISTED CODING
LAB– 9.2

NAME:MOHAMMED ANAS SIDDIQUI

ENROLL.NO:2403A52088

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:

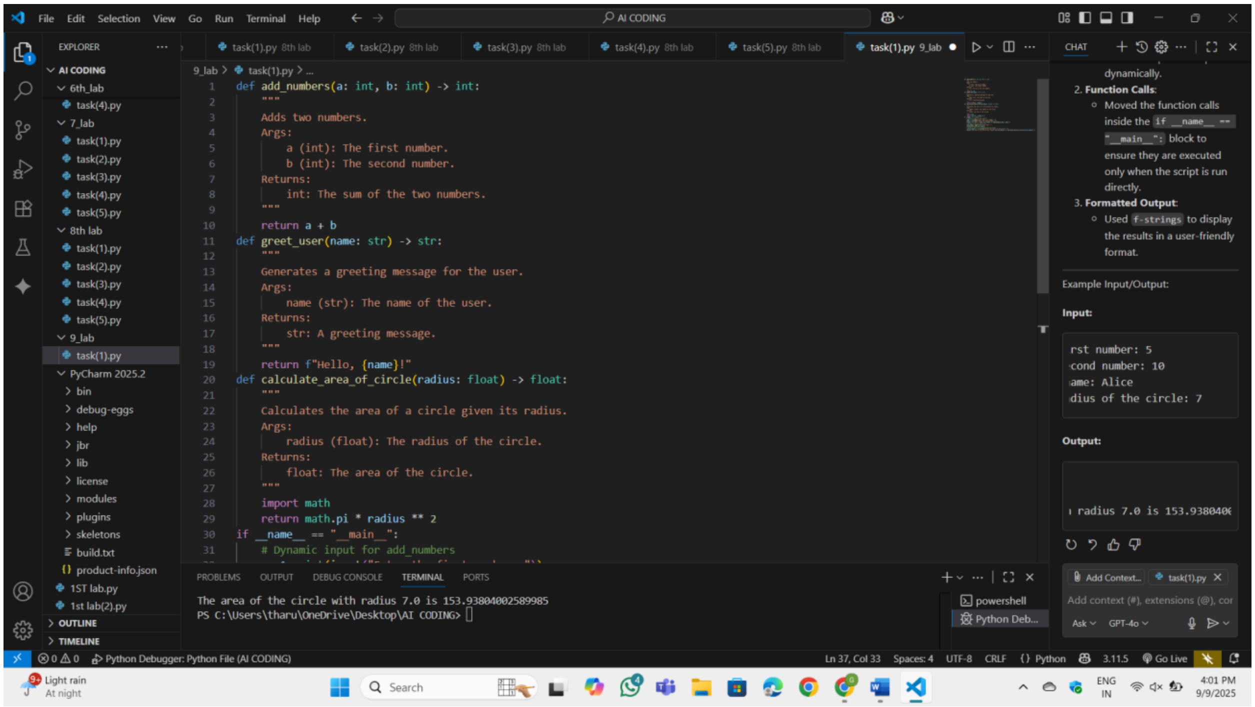
o A Python script with all functions documented using correctly formatted Google-style docstrings

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.

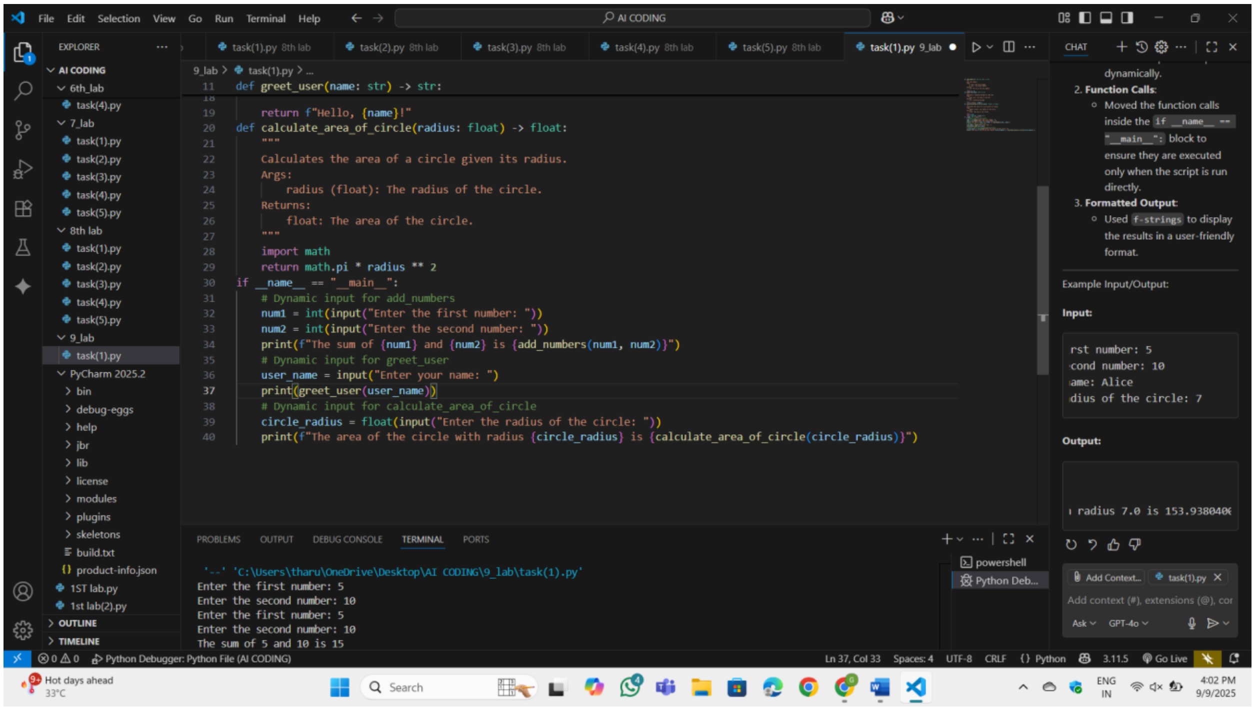
Example Input/Output:

Input:

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

Output:

```
radius 7.0 is 153.938040
```



```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:

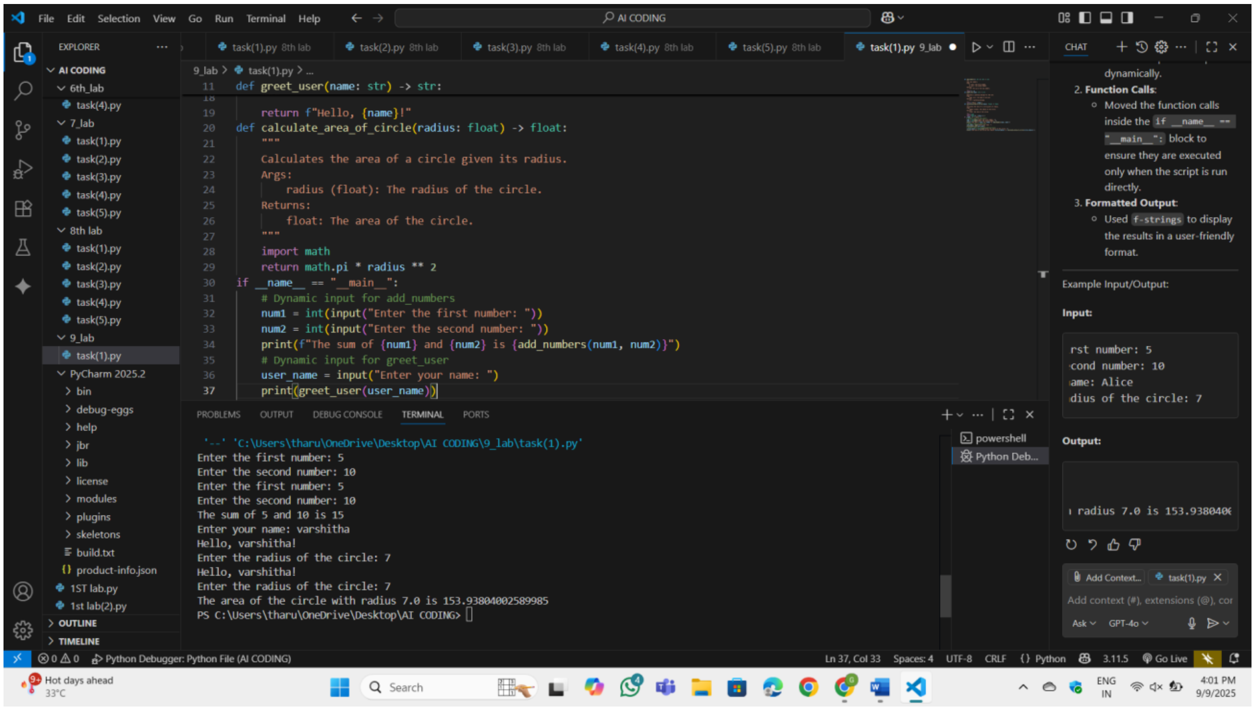
Input:

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

Output:

```
radius 7.0 is 153.938040
```

OUTPUT:



```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.

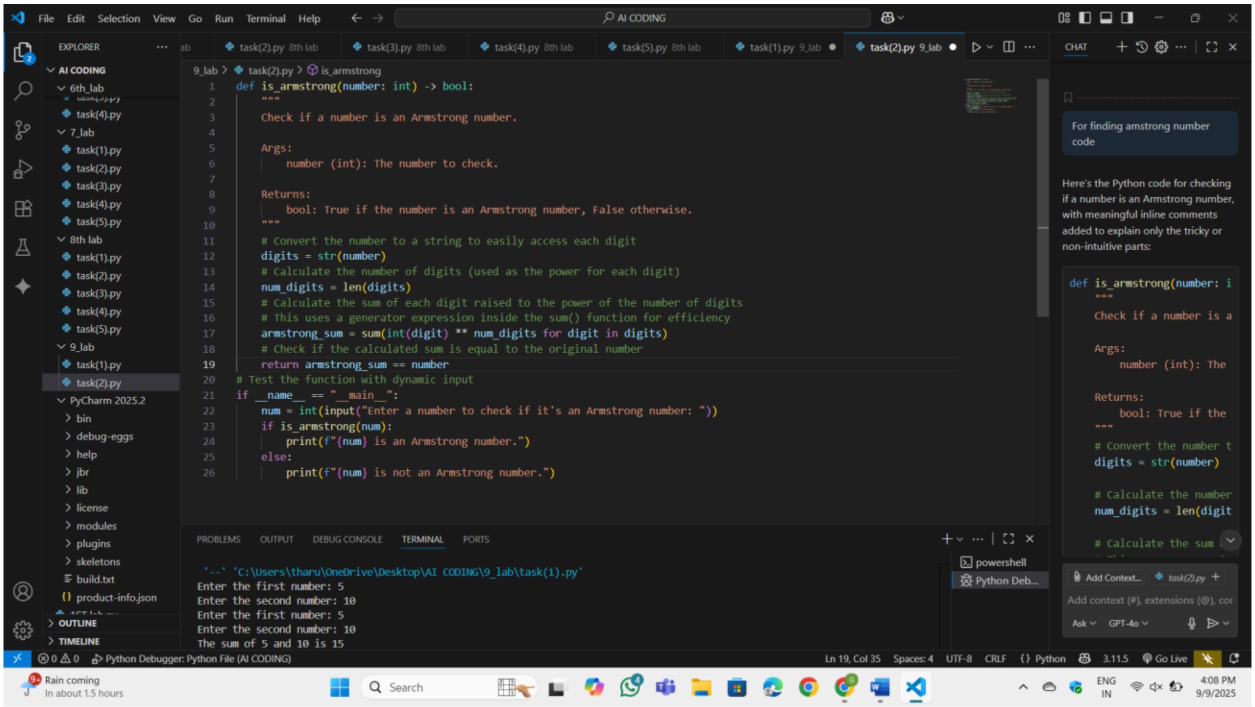
• Expected Output #2:

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.")
```

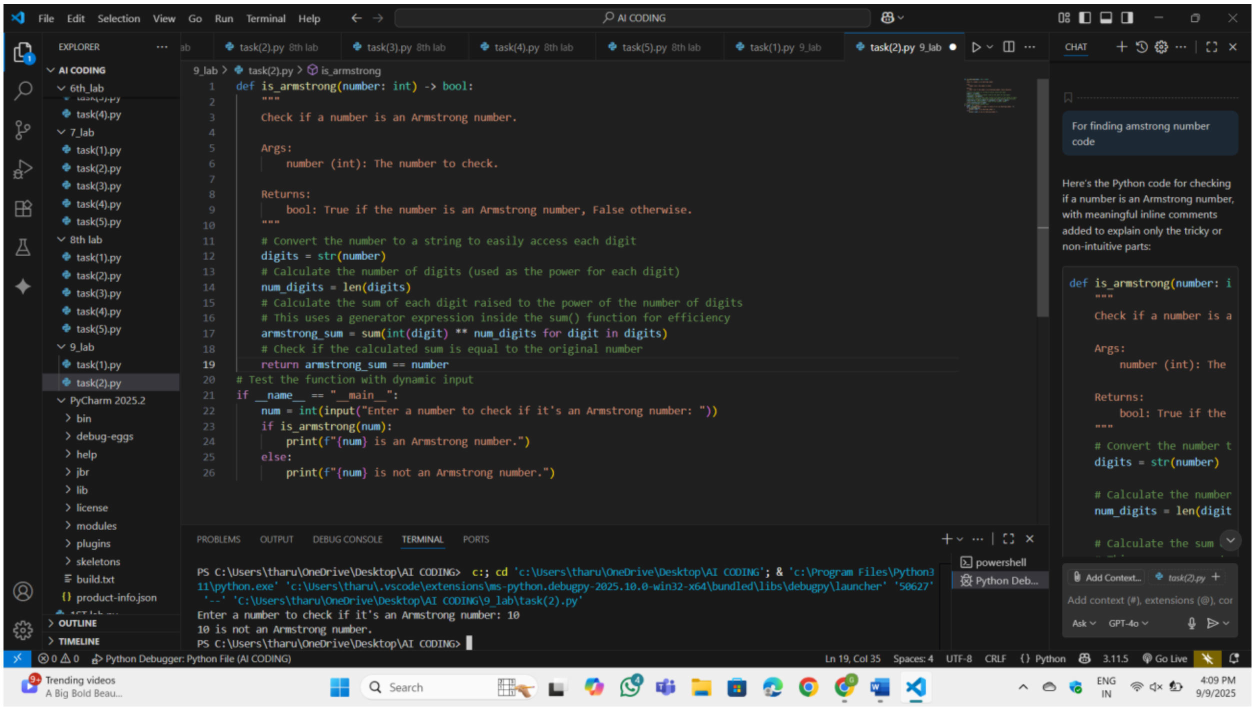
For finding amstrong number code

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
```

```
 '--' '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
```

OUTPUT:



File Edit Selection View Go Run Terminal Help
AI CODING
EXPLORER
AI CODING
task(2).py 9_lab
9_lab > task(2).py > is_armstrong
CHAT
PROBLEMS
OUTPUT
DEBUG CONSOLE
TERMINAL
PORTS
powershell
Python Deb...
Python Debugger: Python File (AI CODING)
Ln 19, Col 35 Spaces: 4 UTF-8 CRLF {} Python 3.11.5 Go Live
Trending videos
A Big Bold Beau...
Search
ENG IN
4:09 PM 9/9/2025

```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>
```

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:

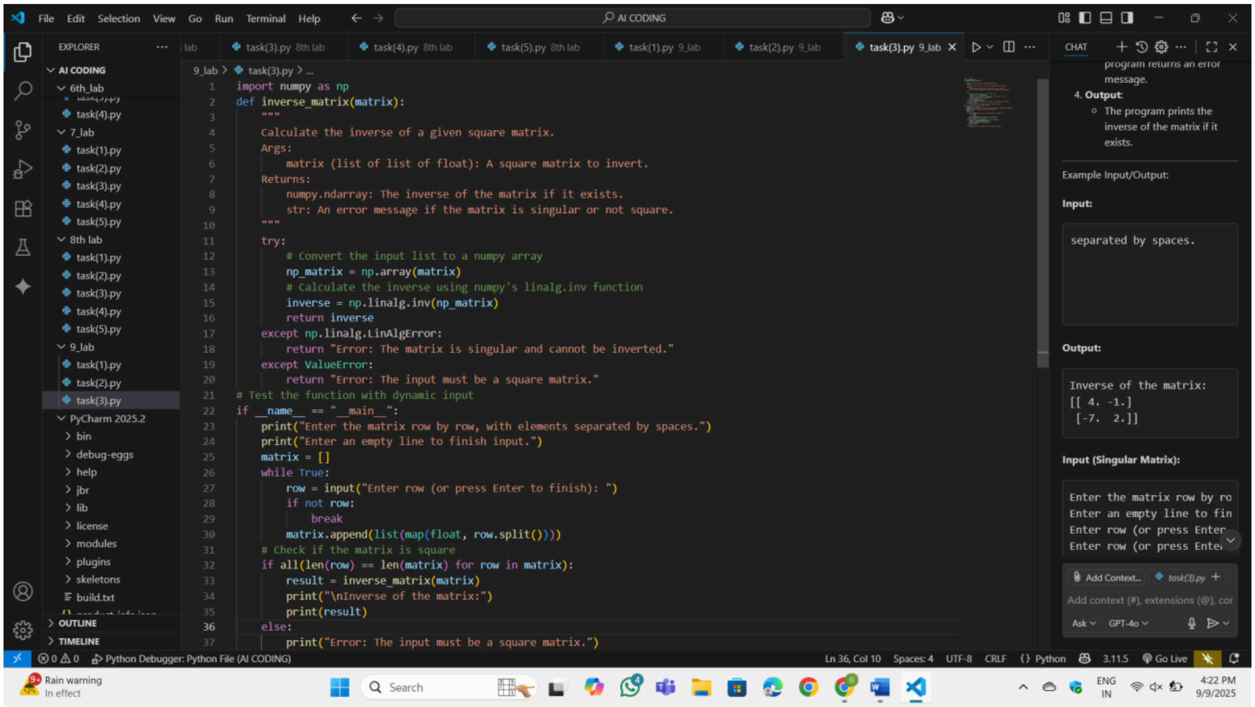
(Documentation – Module-Level Documentation)
• Task: Use AI to create a module-level docstring summarizing the purpose, dependencies, and main functions/classes of a Python file.

• 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.
```

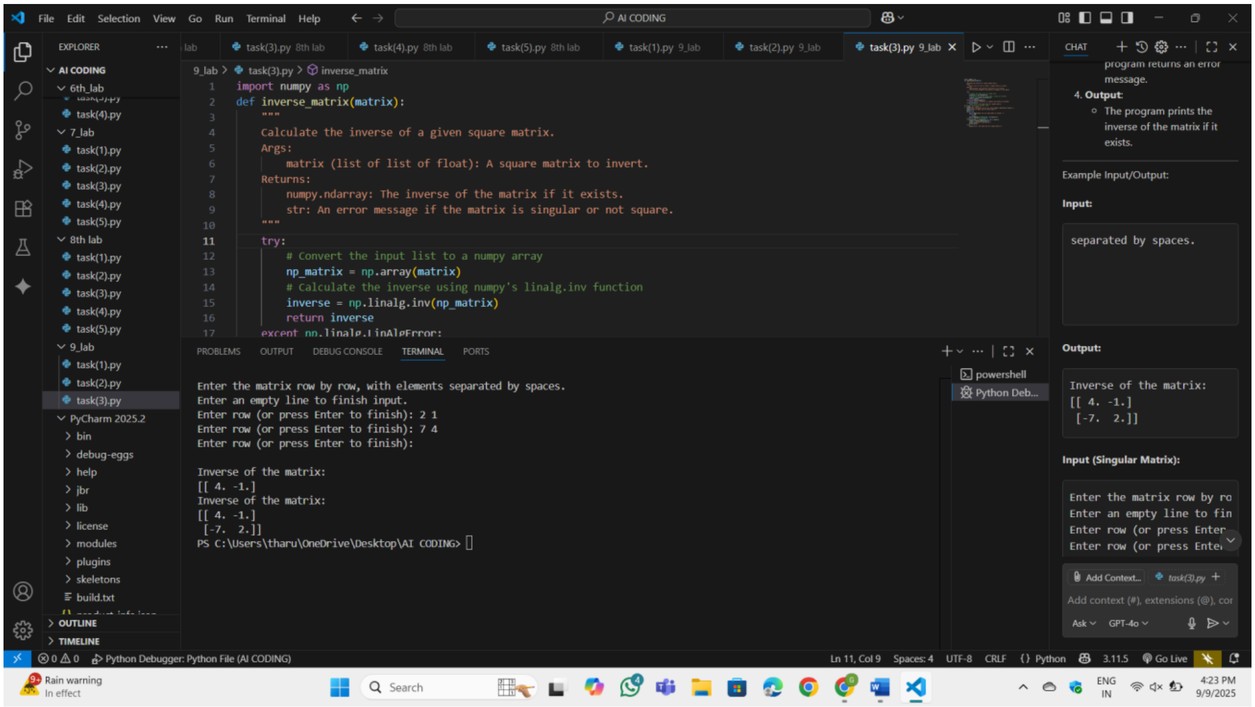
Output:

```
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
```

OUTPUT:



```
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> 
```

```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:
```

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.

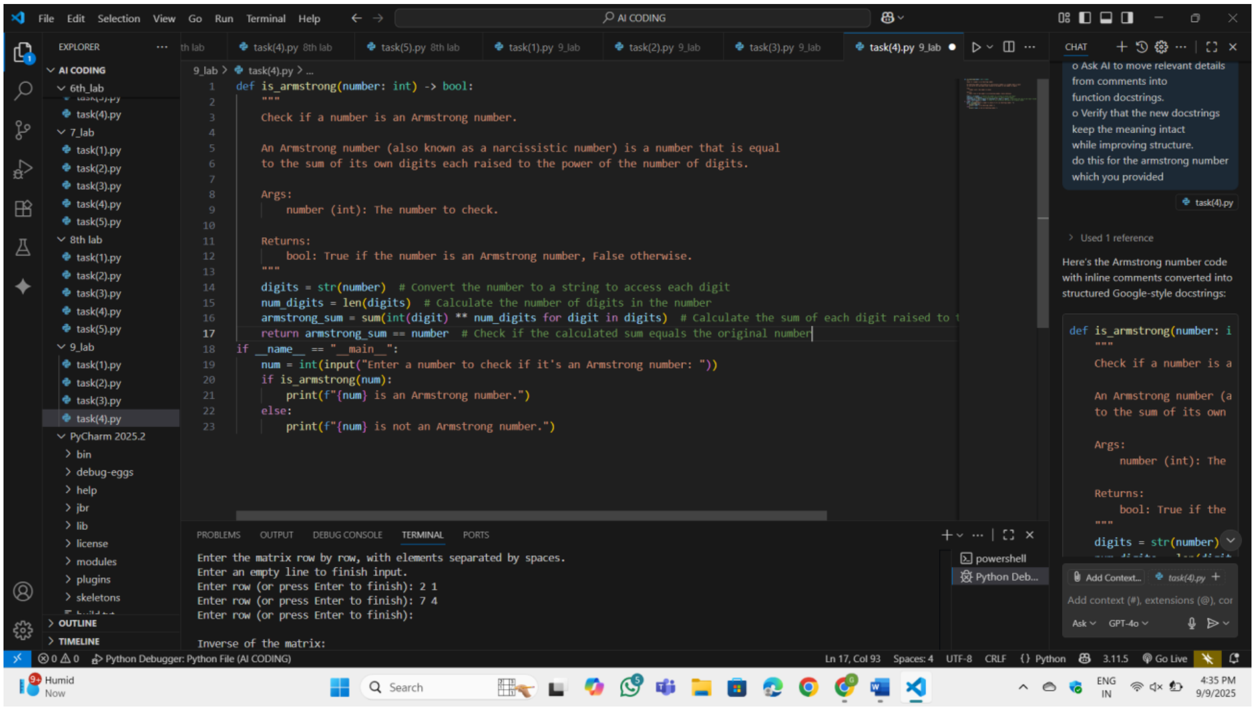
Task-4:

(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:
```

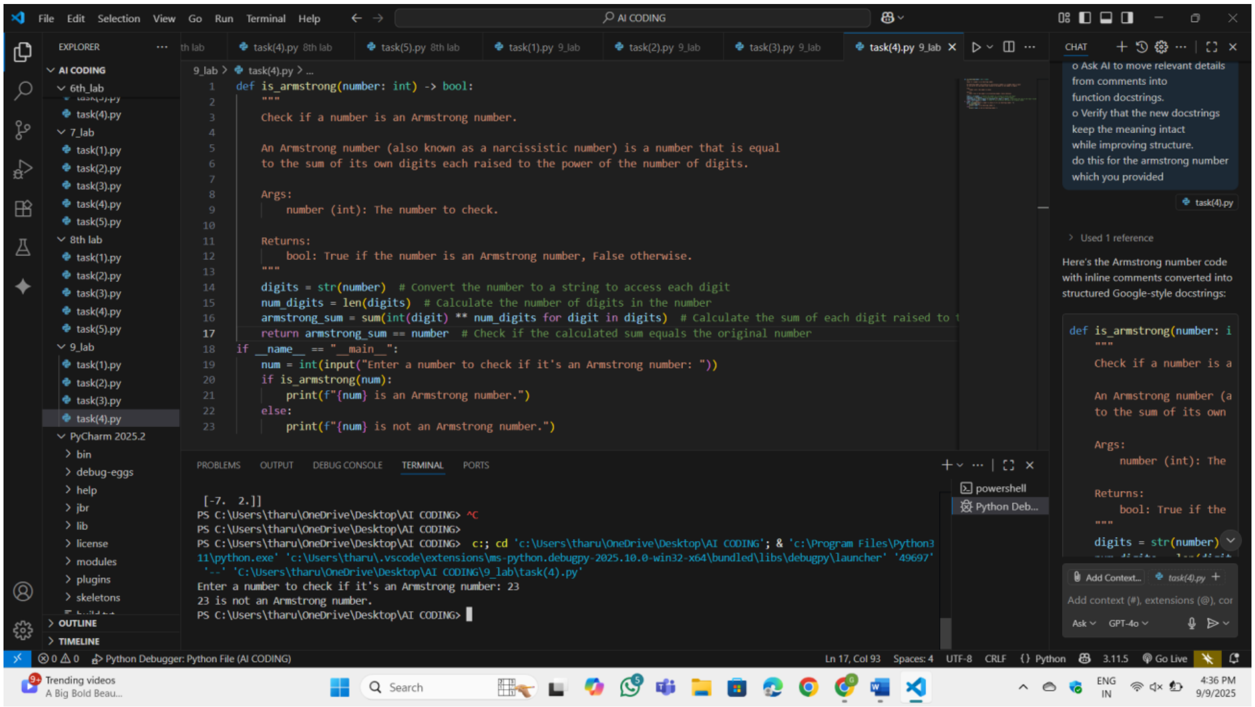
o Ask AI to move relevant details from comments into function docstrings.
o Verify that the new docstrings keep the meaning intact while improving structure.
do this for the armstrong number which you provided

Used 1 reference

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)
```

OUTPUT:



```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.")
```

```
 [-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

Used 1 reference

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)
```

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.

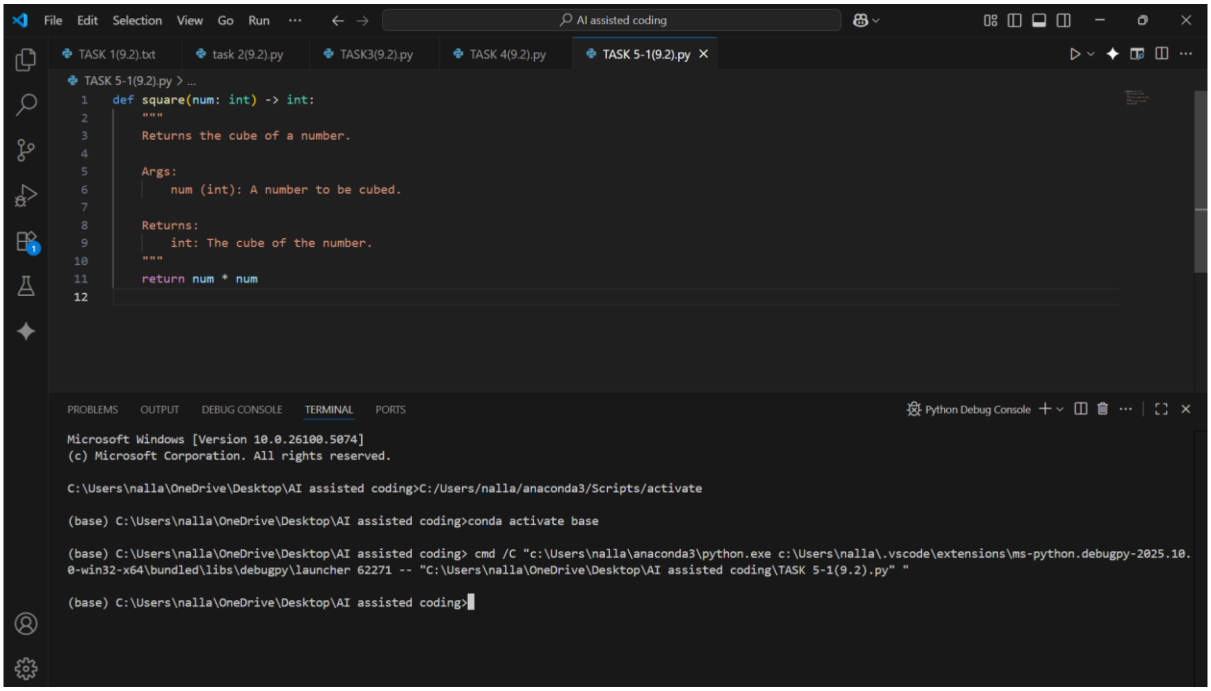
• Expected Output #5:

o Python file with updated, accurate, and standardized docstrings

Prompt:

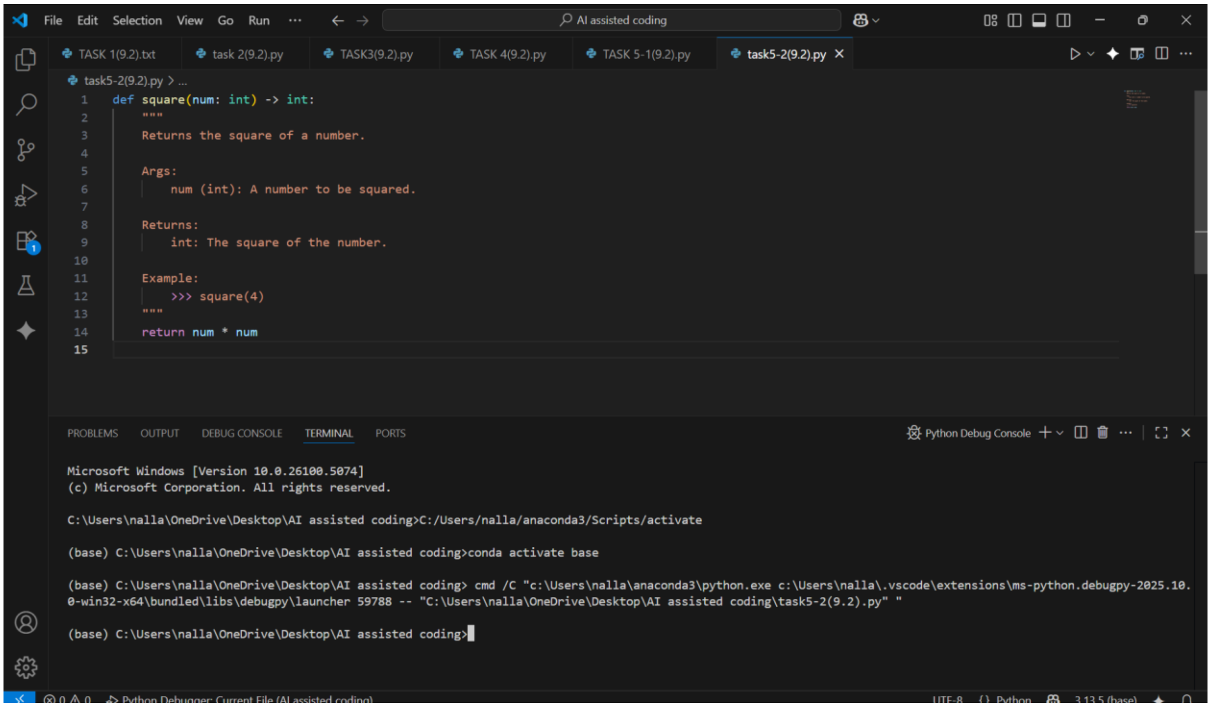
Identify and correct inaccuracies in existing docstrings.

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

```

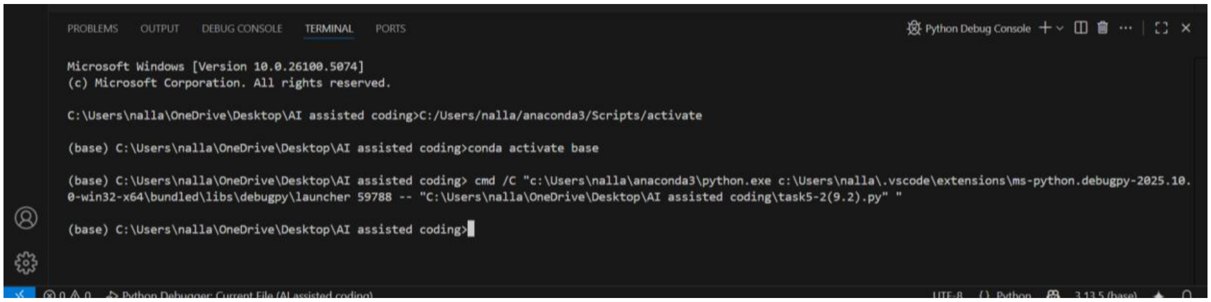
```
Microsoft Windows [Version 10.0.26100.5074]
(c) Microsoft Corporation. All rights reserved.

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>
```

OUTPUT:



```
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:

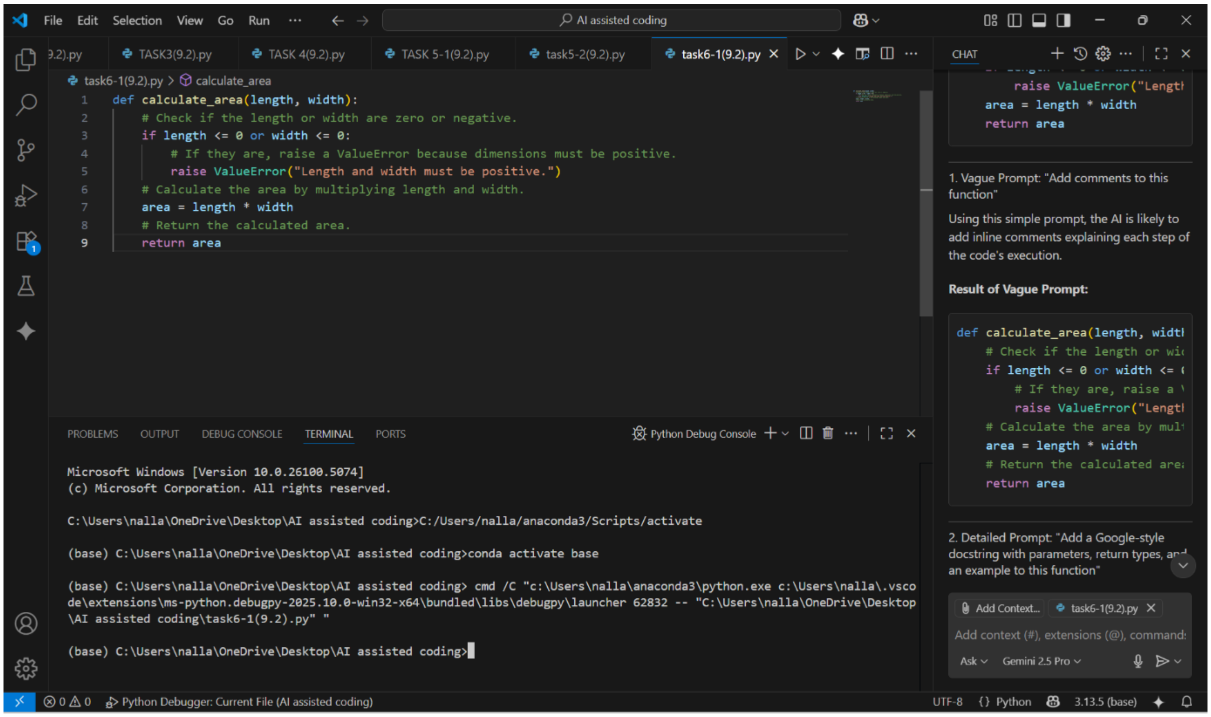
(Documentation – Prompt Comparison
Experiment)

• Task: Compare documentation output from a vague prompt and a detailed prompt for the same Python function.
• Instructions:
o Create two prompts: one simple ("Add comments to this function") and one detailed ("Add Google-style docstrings with parameters, return types, and examples").
o Use AI to process the same Python function with both prompts.
o Analyze and record differences in quality, accuracy, and completeness.
• Expected Output #6:
o 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("Length
    area = length * width
    return area
```

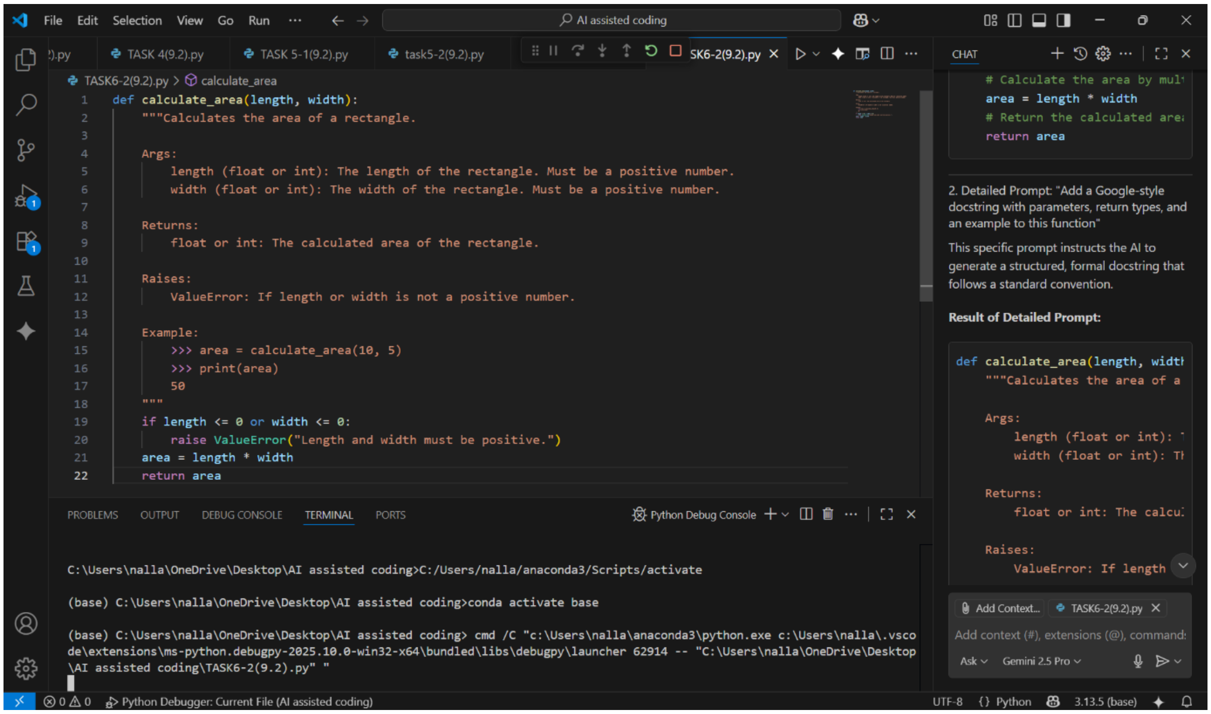
1. Vague Prompt: "Add comments to this function"

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, widtl
    # Check if the length or wi
    if length <= 0 or width <= (
        # If they are, raise a \
        raise ValueError("Lengtl
    # Calculate the area by mult
    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"


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" "
```

```python
    # 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:

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

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

    Returns:
        float or int: The calcu

    Raises:
        ValueError: If length
```

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.