

## **AI ASSISTED CODING**

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**ENROLLMENT NUMBER : 2403A52007**

**Name of the Student : Merugu Rakshith**

**BATCH : B02**

**ASSIGNMENT : 9.3**

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## TASK DESCRIPTION:

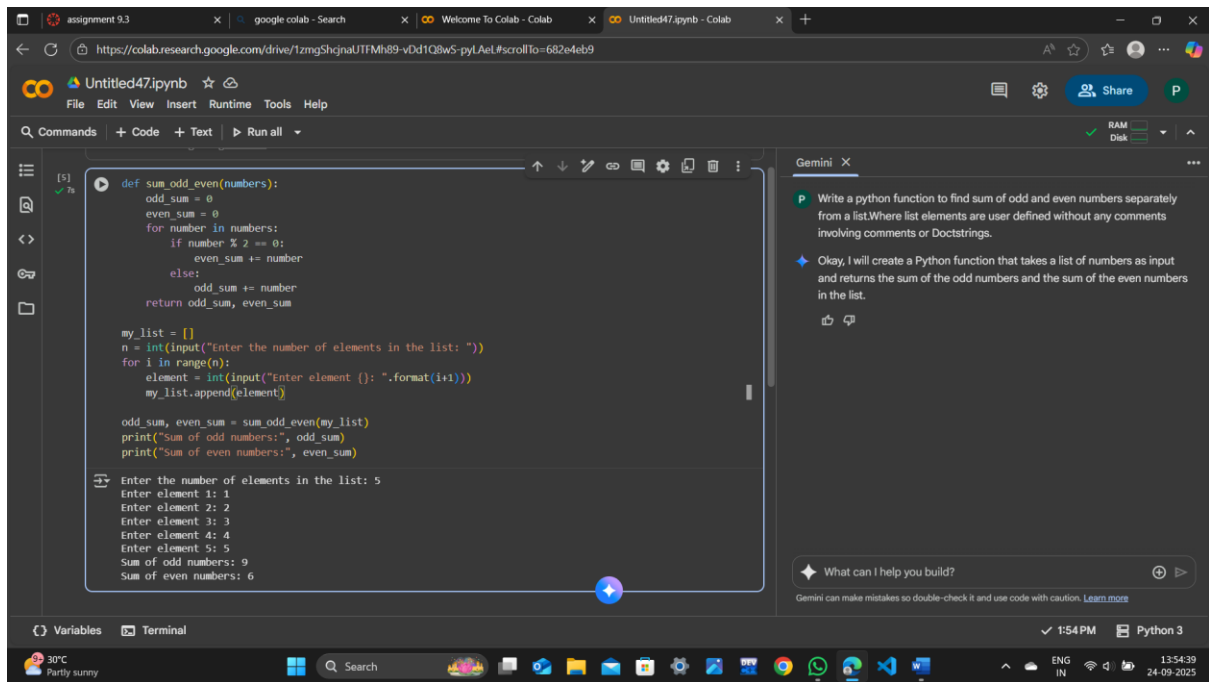
Write python function to return sum of even and odd numbers in the given list.

- Incorporate manual docstring in code with Google Style
- Use an AI-assisted tool (e.g., Copilot, Cursor AI) to generate a docstring describing the function.
- Compare the AI-generated docstring with your manually written one.

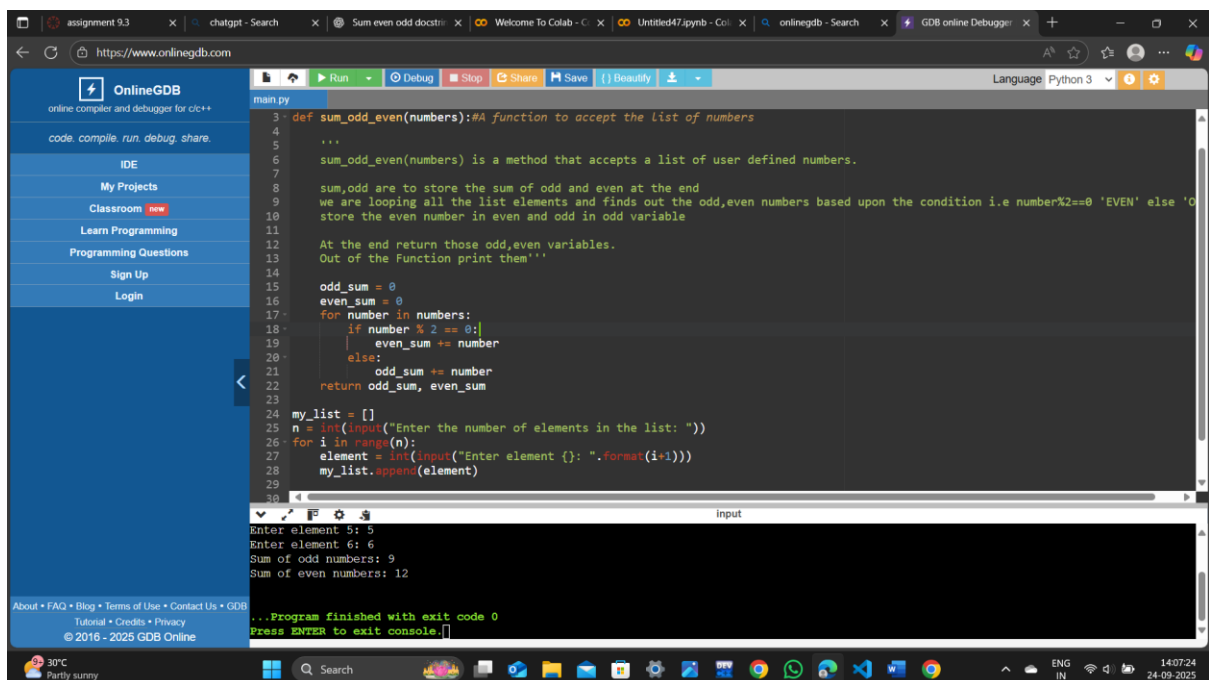
### Prompt:

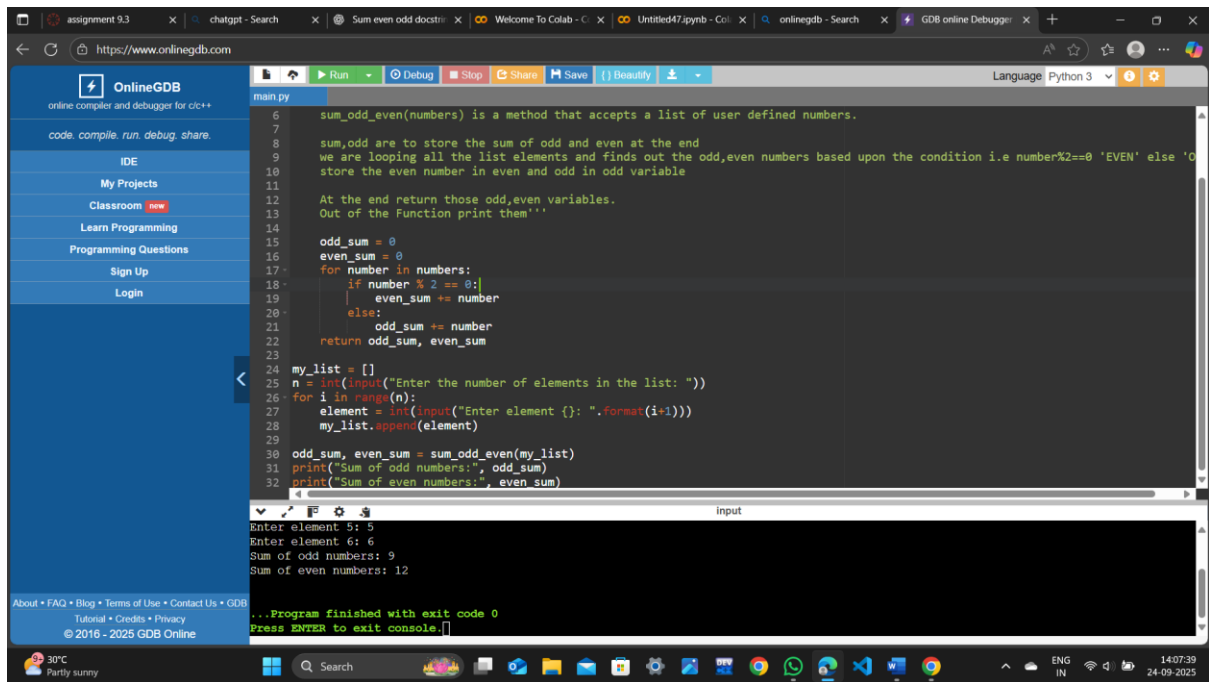
Write a python function to find sum of odd and even numbers separately from a list. Where list elements are user defined without any comments involving comments or Doctstrings.

CODE:



# Incorporate manual docstring in code with Google Style





The screenshot displays the OnlineGDB web application. The left sidebar contains navigation links such as 'OnlineGDB', 'code, compile, run, debug, share.', 'IDE', 'My Projects', 'Classroom', 'Learn Programming', 'Programming Questions', 'Sign Up', and 'Login'. The main editor area shows a Python file named 'main.py' with the following code:

```
6 sum_odd_even(numbers) is a method that accepts a list of user defined numbers.
7
8 sum,odd are to store the sum of odd and even at the end
9 we are looping all the list elements and finds out the odd,even numbers based upon the condition i.e number%2==0 'EVEN' else 'O
10 store the even number in even and odd in odd variable
11
12 At the end return those odd,even variables.
13 Out of the Function print them'''
14
15 odd_sum = 0
16 even_sum = 0
17 for number in numbers:
18     if number % 2 == 0:
19         even_sum += number
20     else:
21         odd_sum += number
22 return odd_sum, even_sum
23
24 my_list = []
25 n = int(input("Enter the number of elements in the list: "))
26 for i in range(n):
27     element = int(input("Enter element {}: ".format(i+1)))
28     my_list.append(element)
29
30 odd_sum, even_sum = sum_odd_even(my_list)
31 print("Sum of odd numbers:", odd_sum)
32 print("Sum of even numbers:", even_sum)
```

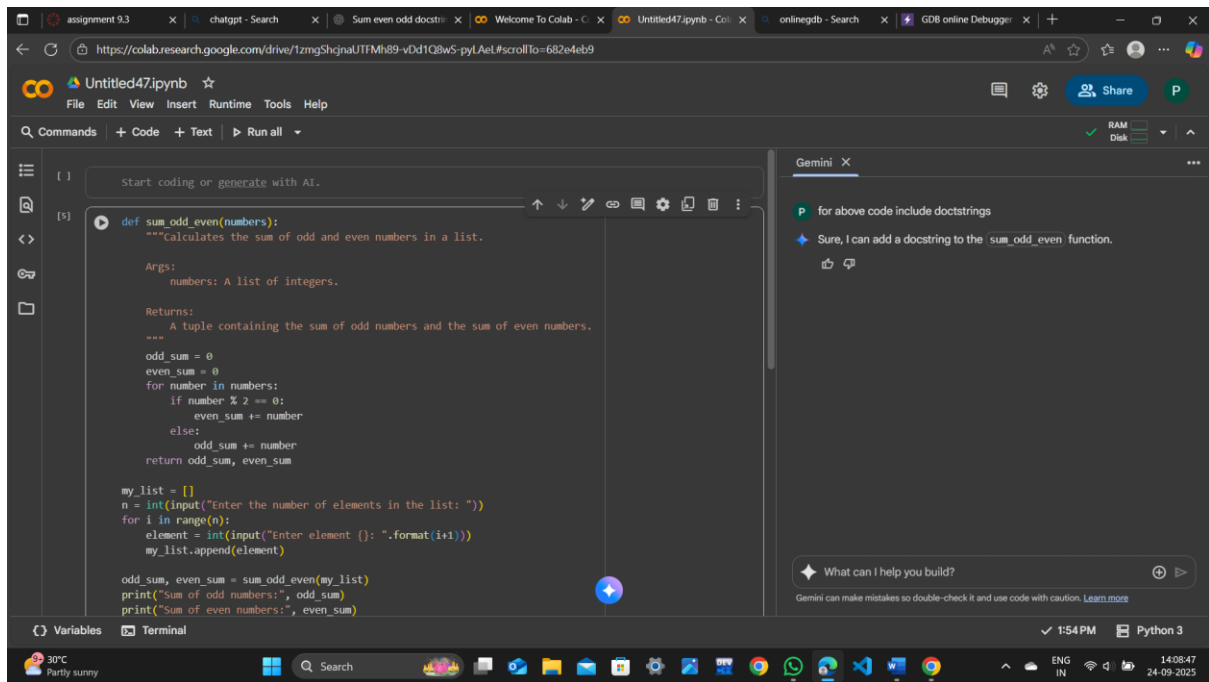
The output window at the bottom shows the execution results:

```
input
Enter element 5: 5
Enter element 6: 6
Sum of odd numbers: 9
Sum of even numbers: 12
...Program finished with exit code 0
Press ENTER to exit console.
```

Use an AI-assisted tool (e.g., Copilot, Cursor AI) to generate a docstring describing the function.

## PROMPT:

For the code that is been generated by You, Include docstrings in it



**OBSERVATION:**  
**Compare the AI-generated docstring with your manually written one.**

On Comparison of the Docstrings of mine and AI tool i.e Gemini. Mine is better and understandable by beginners, where as gemini it is a little bit terminology is involved.

## **TASK DESCRIPTION-2**

**Write python program for sru\_student class with attributes like name, roll no., hostel\_status and fee\_update method and display\_details method.**

- Write comments manually for each line/code block
- Ask an AI tool to add inline comments explaining each line/step.
- Compare the AI-generated comments with your manually written one.

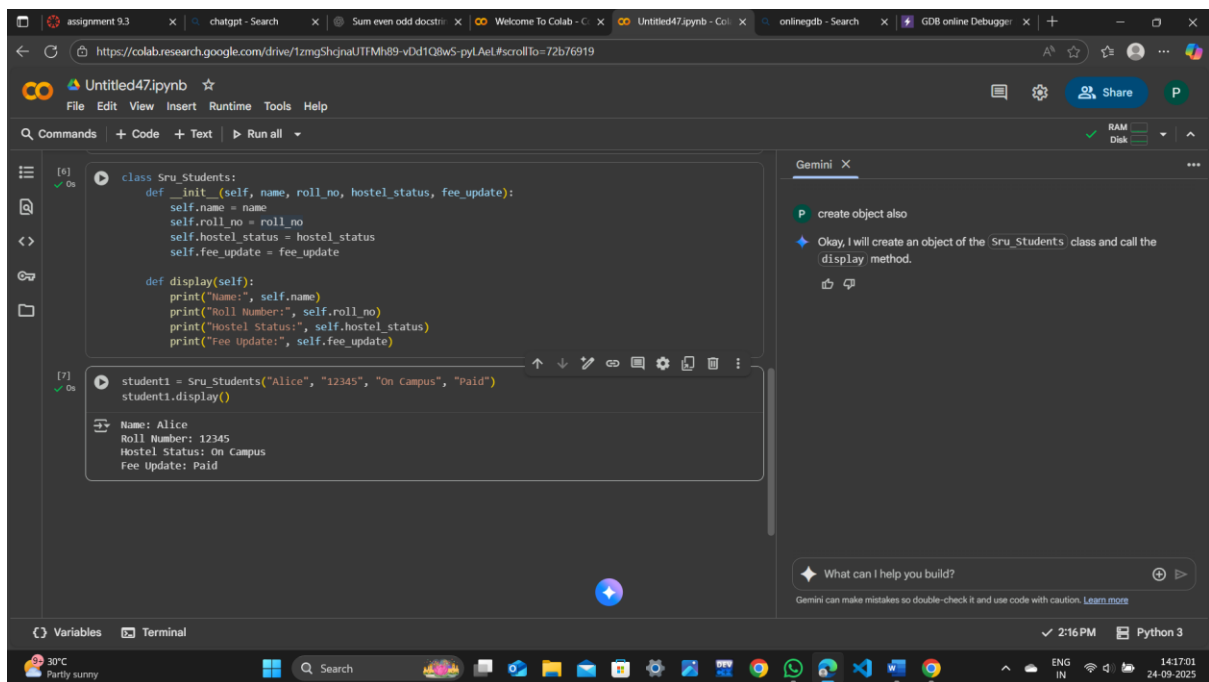
Expected Output#2: Students critically analyze AI-generated code comments.

### **Prompt:**

Write a python class Sru\_Students with attributes like name,roll\_no,hostel\_status,fee\_update

and a method 'display' that displays information without any docstrings.

## CODE:



```
[6] class Sru_Students:
    def __init__(self, name, roll_no, hostel_status, fee_update):
        self.name = name
        self.roll_no = roll_no
        self.hostel_status = hostel_status
        self.fee_update = fee_update

    def display(self):
        print("Name:", self.name)
        print("Roll Number:", self.roll_no)
        print("Hostel Status:", self.hostel_status)
        print("Fee Update:", self.fee_update)

[7] student1 = Sru_Students("Alice", "12345", "On Campus", "Paid")
student1.display()
```

Name: Alice  
Roll Number: 12345  
Hostel Status: On Campus  
Fee Update: Paid

Gemini X

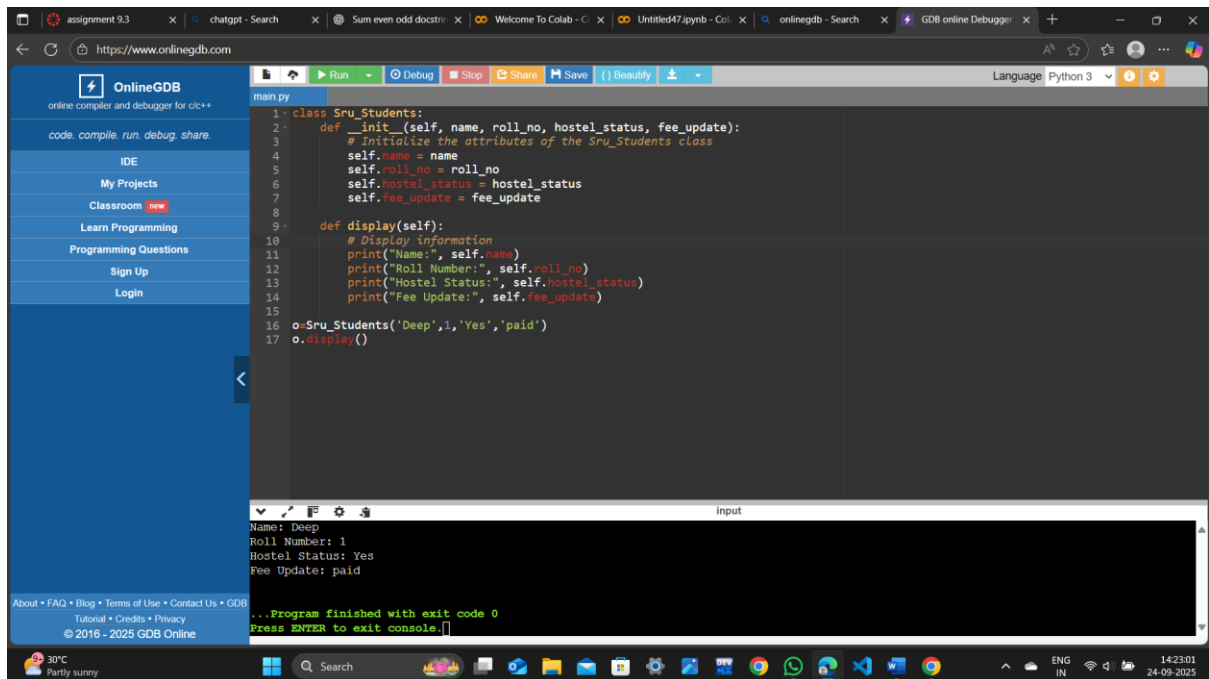
P create object also

Okay, I will create an object of the 'Sru\_Students' class and call the 'display' method.

What can I help you build?

Gemini can make mistakes so double-check it and use code with caution. [Learn more](#)

# Write comments manually for each line/code block



The screenshot shows the OnlineGDB website interface. The left sidebar contains navigation links: OnlineGDB, code, compile, run, debug, share, IDE, My Projects, Classroom (highlighted), Learn Programming, Programming Questions, Sign Up, and Login. The main editor area displays a Python program with the following code:

```
1: class Sru_Students:
2:     def __init__(self, name, roll_no, hostel_status, fee_update):
3:         # Initialize the attributes of the Sru_Students class
4:         self.name = name
5:         self.roll_no = roll_no
6:         self.hostel_status = hostel_status
7:         self.fee_update = fee_update
8:
9:     def display(self):
10:        # Display information
11:        print("Name:", self.name)
12:        print("Roll Number:", self.roll_no)
13:        print("Hostel Status:", self.hostel_status)
14:        print("Fee Update:", self.fee_update)
15:
16: o=Sru_Students('Deep',1,'Yes','paid')
17: o.display()
```

The output window at the bottom shows the following text:

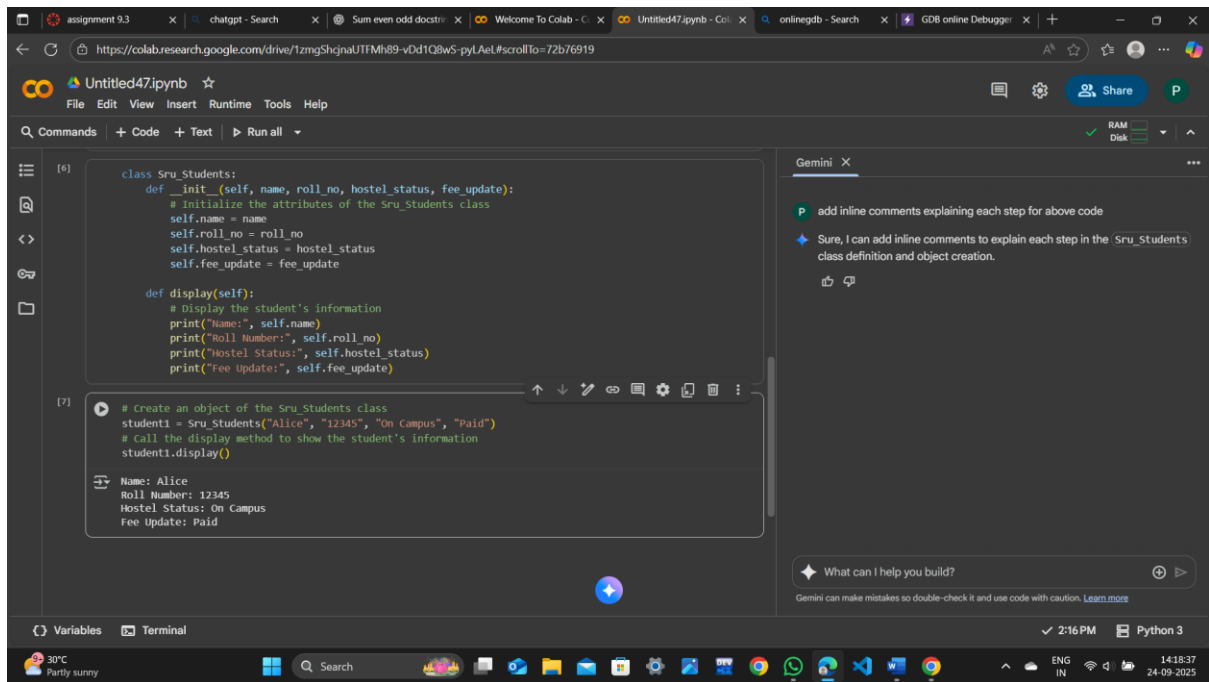
```
Name: Deep
Roll Number: 1
Hostel Status: Yes
Fee Update: paid
...Program finished with exit code 0
Press ENTER to exit console.[]
```

Ask an AI tool to add inline comments explaining each line/step

**PROMPT:**

Add inline comments explaining each step for above code





## OBSERVATION:

Compare the AI-generated comments with your manually written one

I have Analysed the inline comments that are given by me and Gemini. What I observed is Gemini inline comments are far better than my comments. Since it has involved class, Attributes in the code. So, it has better approach than me

## TASK DESCRIPTION -3:

**Write a Python script with 3–4 functions (e.g., calculator: add, subtract, multiply, divide).**

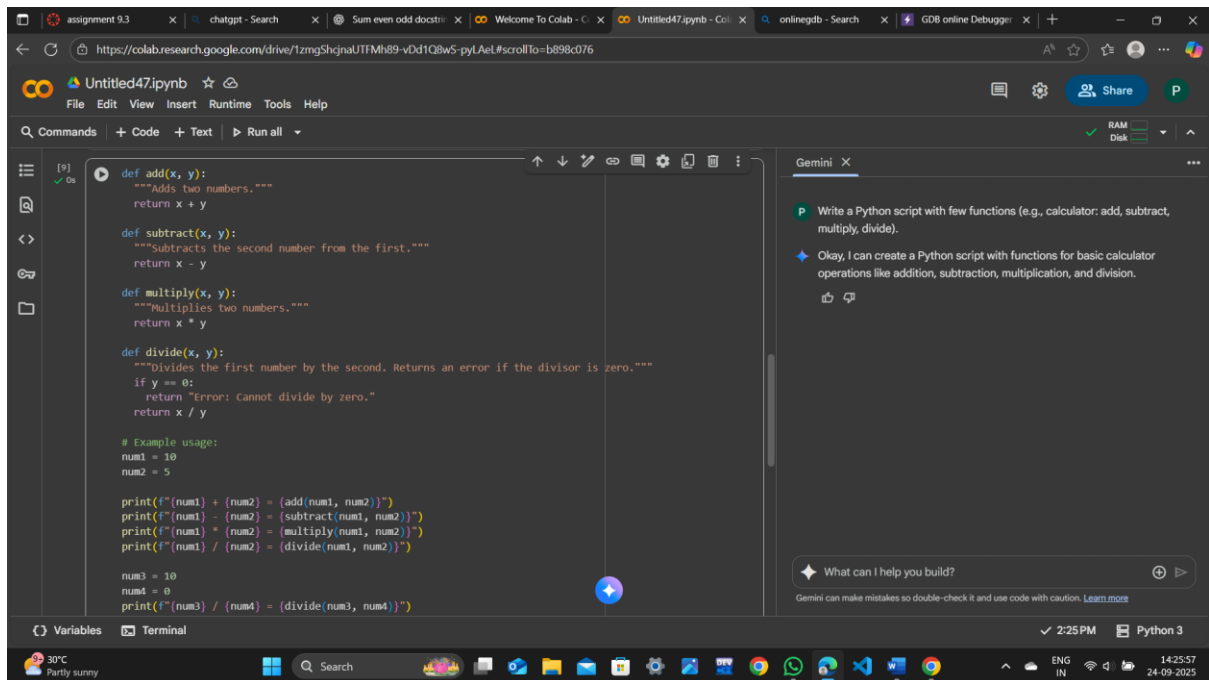
- Incorporate manual docstring in code with NumPy Style
- Use AI assistance to generate a module-level docstring + individual function docstrings.
- Compare the AI-generated docstring with your manually written one.

Expected Output#3: Students learn structured documentation for multi-function scripts

### **PROMPT:**

Write a Python script with few functions (e.g., calculator: add, subtract, multiply,

divide).



```
[9] ✓ Os
def add(x, y):
    """Adds two numbers."""
    return x + y

def subtract(x, y):
    """Subtracts the second number from the first."""
    return x - y

def multiply(x, y):
    """Multiplies two numbers."""
    return x * y

def divide(x, y):
    """Divides the first number by the second. Returns an error if the divisor is zero."""
    if y == 0:
        return "Error: cannot divide by zero."
    return x / y

# Example usage:
num1 = 10
num2 = 5

print(f"{num1} + {num2} = {add(num1, num2)}")
print(f"{num1} - {num2} = {subtract(num1, num2)}")
print(f"{num1} * {num2} = {multiply(num1, num2)}")
print(f"{num1} / {num2} = {divide(num1, num2)}")

num3 = 10
num4 = 0
print(f"{num3} / {num4} = {divide(num3, num4)}")
```

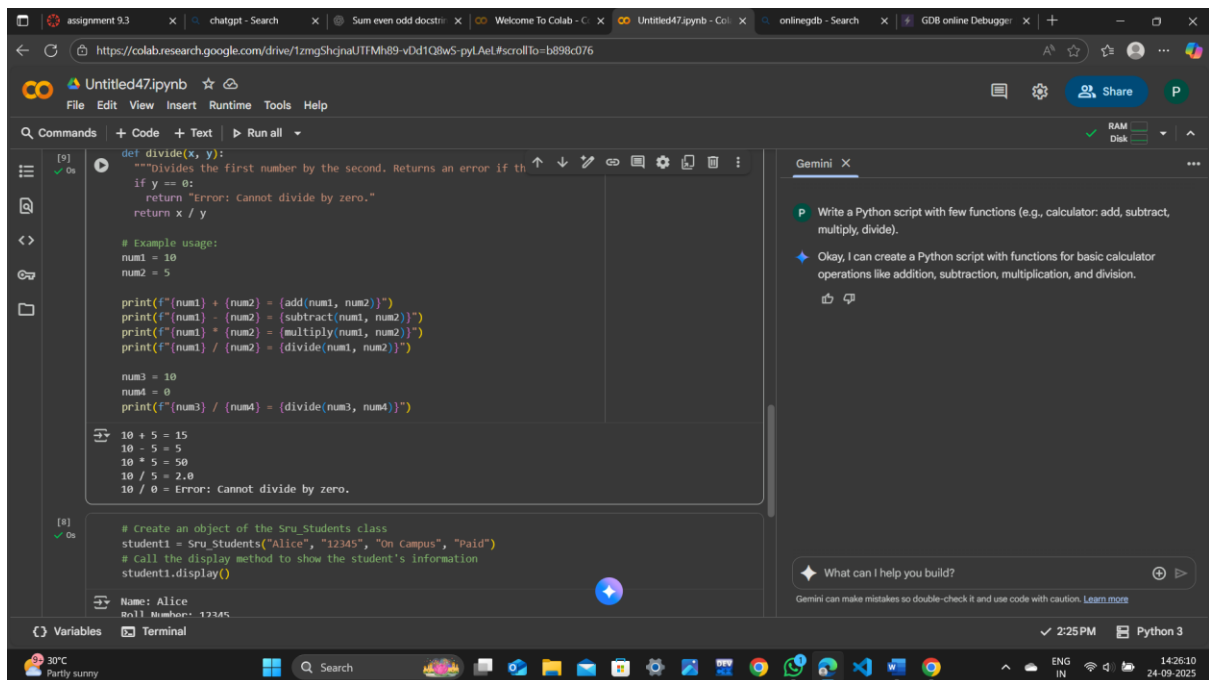
Gemini

Write a Python script with few functions (e.g., calculator: add, subtract, multiply, divide).

Okay, I can create a Python script with functions for basic calculator operations like addition, subtraction, multiplication, and division.

What can I help you build?

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```
[9] ✓ Os
def divide(x, y):
    """Divides the first number by the second. Returns an error if the divisor is zero."""
    if y == 0:
        return "Error: cannot divide by zero."
    return x / y

# Example usage:
num1 = 10
num2 = 5

print(f"{num1} + {num2} = {add(num1, num2)}")
print(f"{num1} - {num2} = {subtract(num1, num2)}")
print(f"{num1} * {num2} = {multiply(num1, num2)}")
print(f"{num1} / {num2} = {divide(num1, num2)}")

num3 = 10
num4 = 0
print(f"{num3} / {num4} = {divide(num3, num4)}")

10 + 5 = 15
10 - 5 = 5
10 * 5 = 50
10 / 5 = 2.0
10 / 0 = Error: Cannot divide by zero.
```

Gemini

Write a Python script with few functions (e.g., calculator: add, subtract, multiply, divide).

Okay, I can create a Python script with functions for basic calculator operations like addition, subtraction, multiplication, and division.

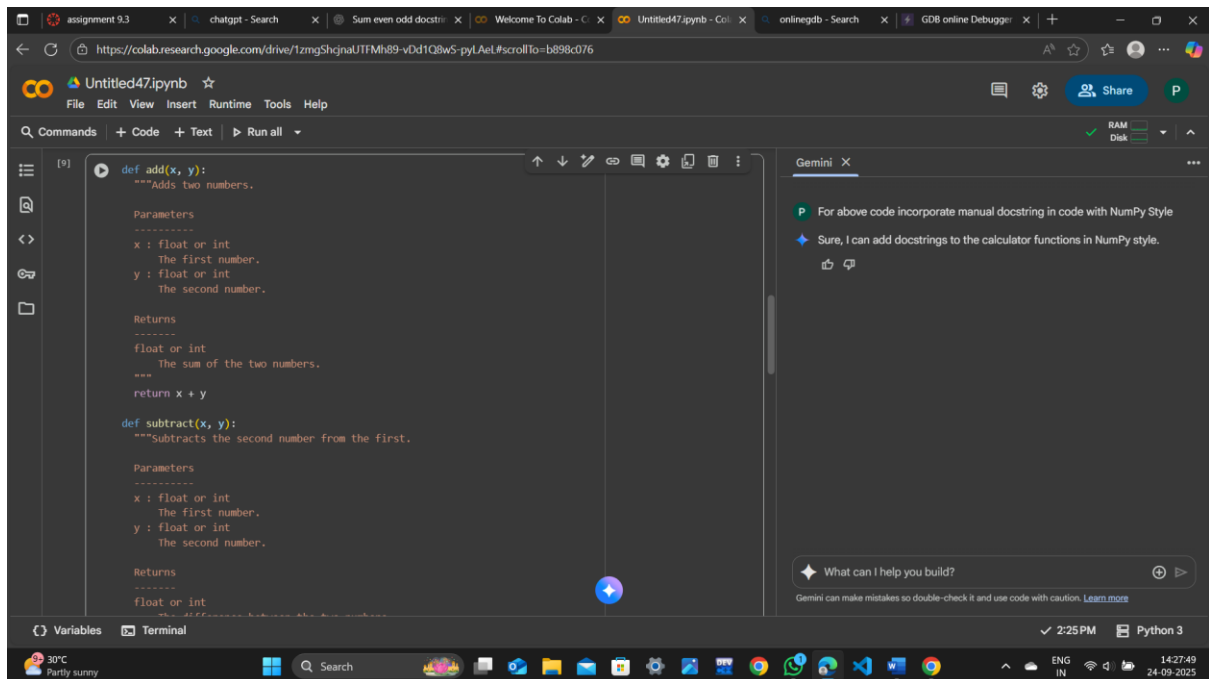
What can I help you build?

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Incorporate manual docstring in code with NumPy Style

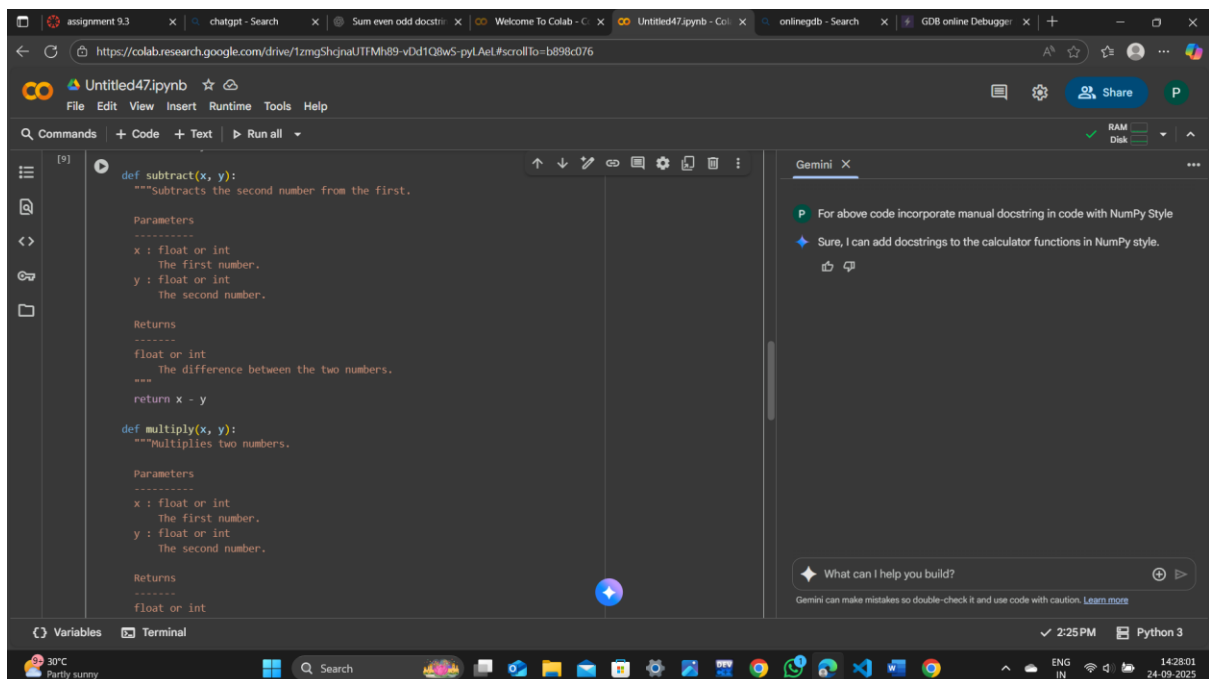
## PROMPT:

For Above code incorporate manual docstring in code with NumPy Style



The screenshot shows a Jupyter Notebook interface with a code editor on the left and a Gemini chat window on the right. The code editor contains two functions: `add(x, y)` and `subtract(x, y)`. Both functions have manual docstrings in NumPy style, including parameters, returns, and a description of the function. The Gemini chat window shows a prompt: "For above code incorporate manual docstring in code with NumPy Style" and a response: "Sure, I can add docstrings to the calculator functions in NumPy style."

```
def add(x, y):  
    """Adds two numbers.  
  
    Parameters  
    -----  
    x : float or int  
        The first number.  
    y : float or int  
        The second number.  
  
    Returns  
    -----  
    float or int  
        The sum of the two numbers.  
    """  
    return x + y  
  
def subtract(x, y):  
    """Subtracts the second number from the first.  
  
    Parameters  
    -----  
    x : float or int  
        The first number.  
    y : float or int  
        The second number.  
  
    Returns  
    -----  
    float or int  
        The difference between the two numbers.  
    """  
    return x - y  
  
def multiply(x, y):  
    """Multiplies two numbers.  
  
    Parameters  
    -----  
    x : float or int  
        The first number.  
    y : float or int  
        The second number.  
  
    Returns  
    -----  
    float or int  
        The product of the two numbers.  
    """  
    return x * y
```



The screenshot shows a Jupyter Notebook interface with a code editor on the left and a Gemini chat window on the right. The code editor contains two functions: `subtract(x, y)` and `multiply(x, y)`. Both functions have manual docstrings in NumPy style, including parameters, returns, and a description of the function. The Gemini chat window shows a prompt: "For above code incorporate manual docstring in code with NumPy Style" and a response: "Sure, I can add docstrings to the calculator functions in NumPy style."

```
def subtract(x, y):  
    """Subtracts the second number from the first.  
  
    Parameters  
    -----  
    x : float or int  
        The first number.  
    y : float or int  
        The second number.  
  
    Returns  
    -----  
    float or int  
        The difference between the two numbers.  
    """  
    return x - y  
  
def multiply(x, y):  
    """Multiplies two numbers.  
  
    Parameters  
    -----  
    x : float or int  
        The first number.  
    y : float or int  
        The second number.  
  
    Returns  
    -----  
    float or int  
        The product of the two numbers.  
    """  
    return x * y
```

assignment 9.3 | chatgpt - Search | Sum even odd docstr... | Welcome To Colab - C... | Untitled47.ipynb - Col... | onlneqdb - Search | GDB online Debugger

https://colab.research.google.com/drive/1zmgShjnaUTFMh89-vDd1QbW5-pyLAeL#scrollTo=b898c076

Untitled47.ipynb

File Edit View Insert Runtime Tools Help

Commands | Code | Text | Run all

```
[9] def divide(x, y):  
    """Divides the first number by the second.  
  
    Parameters  
    -----  
    x : float or int  
        The numerator.  
    y : float or int  
        The denominator.  
  
    Returns  
    -----  
    float or int or str  
        The quotient of the two numbers, or an error message if the denominator is zero.  
    """  
    if y == 0:  
        return "Error: Cannot divide by zero."  
    return x / y  
  
# Example usage:  
num1 = 10  
num2 = 5  
  
print(f"{num1} + {num2} = {add(num1, num2)}")  
print(f"{num1} - {num2} = {subtract(num1, num2)}")  
print(f"{num1} * {num2} = {multiply(num1, num2)}")  
print(f"{num1} / {num2} = {divide(num1, num2)}")  
  
num3 = 10  
num4 = 0  
print(f"{num3} / {num4} = {divide(num3, num4)}")
```

Variables | Terminal

2:25 PM Python 3

30°C Partly sunny

Gemini

P For above code incorporate manual docstring in code with NumPy Style

Sure, I can add docstrings to the calculator functions in NumPy style.

What can I help you build?

Gemini can make mistakes so double-check it and use code with caution. [Learn more](#)

assignment 9.3 | chatgpt - Search | Sum even odd docstr... | Welcome To Colab - C... | Untitled47.ipynb - Col... | onlneqdb - Search | GDB online Debugger

https://colab.research.google.com/drive/1zmgShjnaUTFMh89-vDd1QbW5-pyLAeL#scrollTo=b898c076

Untitled47.ipynb

File Edit View Insert Runtime Tools Help

Commands | Code | Text | Run all

```
[9] """ The quotient of the two numbers, or an error message if the d  
    if y == 0:  
        return "Error: Cannot divide by zero."  
    return x / y  
  
# Example usage:  
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num2 = 5  
  
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print(f"{num1} - {num2} = {subtract(num1, num2)}")  
print(f"{num1} * {num2} = {multiply(num1, num2)}")  
print(f"{num1} / {num2} = {divide(num1, num2)}")  
  
num3 = 10  
num4 = 0  
print(f"{num3} / {num4} = {divide(num3, num4)}")  
  
10 + 5 = 15  
10 - 5 = 5  
10 * 5 = 50  
10 / 5 = 2.0  
10 / 0 = Error: Cannot divide by zero.
```

[8] On

```
# Create an object of the Sru_Students class  
student1 = Sru_Students("Alice", "12345", "On Campus", "Paid")  
# Call the display method to show the student's information  
student1.display()  
  
Name: Alice
```

Variables | Terminal

2:25 PM Python 3

30°C Partly sunny

Gemini

P For above code incorporate manual docstring in code with NumPy Style

Sure, I can add docstrings to the calculator functions in NumPy style.

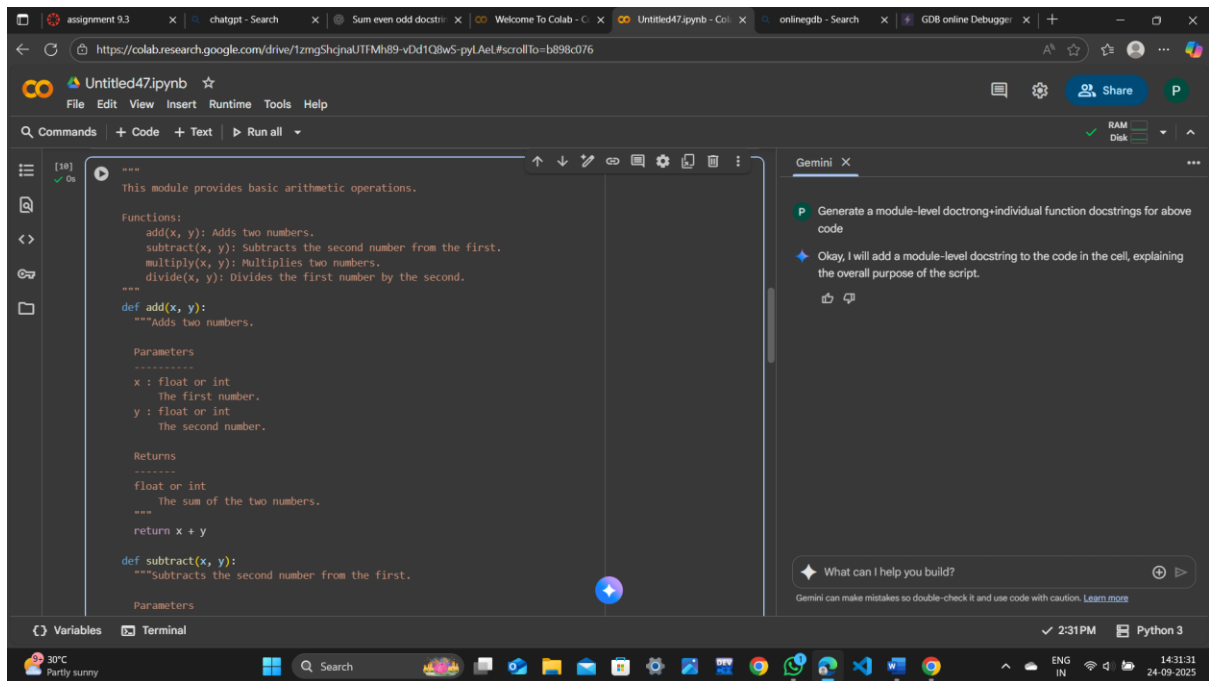
What can I help you build?

Gemini can make mistakes so double-check it and use code with caution. [Learn more](#)

Use AI assistance to generate a module-level  
docstring + individual function  
docstrings.

# PROMPT:

**Generate a module-level doctring+individual function docstrings for above code**



The screenshot shows a Google Colab notebook titled "Untitled47.ipynb". The code cell contains a Python module with the following structure:

```
"""
This module provides basic arithmetic operations.

Functions:
    add(x, y): Adds two numbers.
    subtract(x, y): Subtracts the second number from the first.
    multiply(x, y): Multiplies two numbers.
    divide(x, y): Divides the first number by the second.
"""

def add(x, y):
    """Adds two numbers.

    Parameters
    -----
    x : float or int
        The first number.
    y : float or int
        The second number.

    Returns
    -----
    float or int
        The sum of the two numbers.
    """
    return x + y

def subtract(x, y):
    """Subtracts the second number from the first.

    Parameters
    -----
    x : float or int
        The first number.
    y : float or int
        The second number.

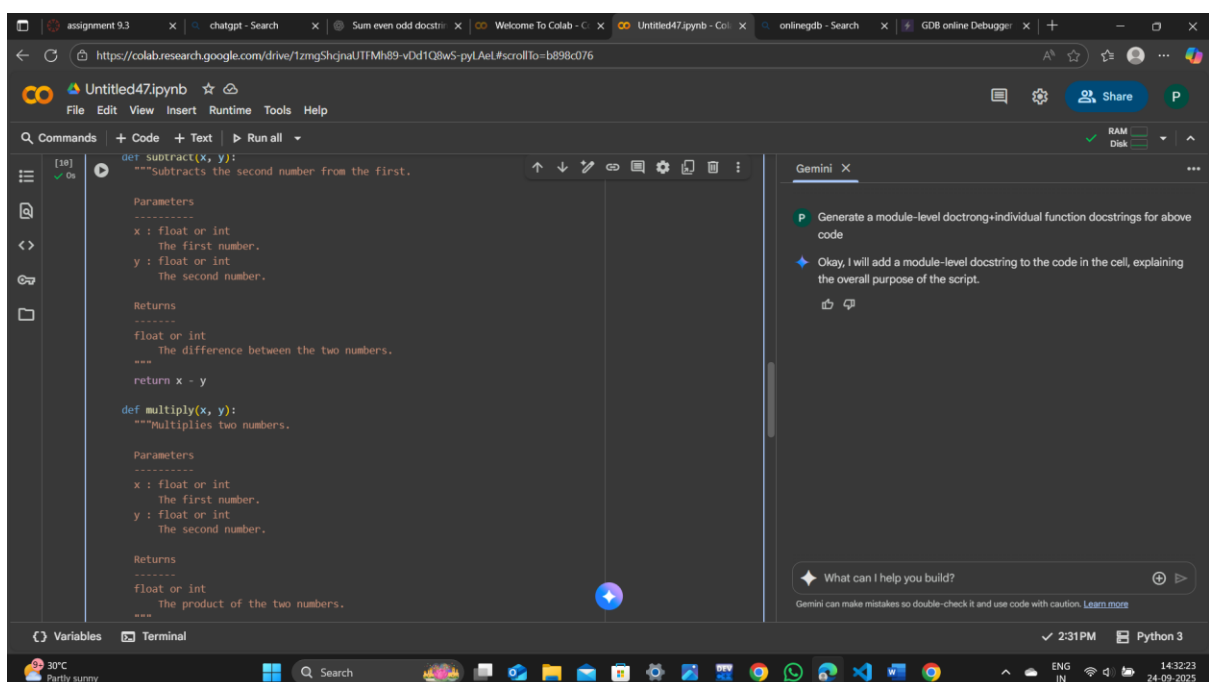
    Returns
    -----
    float or int
        The difference between the two numbers.
    """
    return x - y

def multiply(x, y):
    """Multiplies two numbers.

    Parameters
    -----
    x : float or int
        The first number.
    y : float or int
        The second number.

    Returns
    -----
    float or int
        The product of the two numbers.
    """
    return x * y
```

The Gemini chat interface on the right shows the prompt: "Generate a module-level doctring+individual function docstrings for above code". The response is: "Okay, I will add a module-level doctring to the code in the cell, explaining the overall purpose of the script."



The screenshot shows a Google Colab notebook titled "Untitled47.ipynb". The code cell contains a Python module with the following structure:

```
def subtract(x, y):
    """Subtracts the second number from the first.

    Parameters
    -----
    x : float or int
        The first number.
    y : float or int
        The second number.

    Returns
    -----
    float or int
        The difference between the two numbers.
    """
    return x - y

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    x : float or int
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    float or int
        The product of the two numbers.
    """
    return x * y
```

The Gemini chat interface on the right shows the prompt: "Generate a module-level doctring+individual function docstrings for above code". The response is: "Okay, I will add a module-level doctring to the code in the cell, explaining the overall purpose of the script."

```
def divide(x, y):  
    """Divides the first number by the second.  
  
    Parameters  
    -----  
    x : float or int  
        The numerator.  
    y : float or int  
        The denominator.  
  
    Returns  
    -----  
    float or int or str  
        The quotient of the two numbers, or an error message if the denominator is zero.  
    """  
    if y == 0:  
        return "Error: Cannot divide by zero."  
    return x / y  
  
# Example usage:  
num1 = 10  
num2 = 5  
  
print(f"{num1} + {num2} = {add(num1, num2)}")  
print(f"{num1} - {num2} = {subtract(num1, num2)}")  
print(f"{num1} * {num2} = {multiply(num1, num2)}")  
print(f"{num1} / {num2} = {divide(num1, num2)}")  
  
num3 = 10  
num4 = 0  
print(f"{num3} / {num4} = {divide(num3, num4)}")
```

```
# Example usage:  
num1 = 10  
num2 = 5  
  
print(f"{num1} + {num2} = {add(num1, num2)}")  
print(f"{num1} - {num2} = {subtract(num1, num2)}")  
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print(f"{num1} / {num2} = {divide(num1, num2)}")  
  
num3 = 10  
num4 = 0  
print(f"{num3} / {num4} = {divide(num3, num4)}")  
  
10 + 5 = 15  
10 - 5 = 5  
10 * 5 = 50  
10 / 5 = 2.0  
10 / 0 = Error: Cannot divide by zero.  
  
# create an object of the Sru_Students class  
student1 = Sru_Students("Alice", "12345", "On Campus", "Paid")  
# Call the display method to show the student's information  
student1.display()  
  
Name: Alice  
Roll Number: 12345  
Hostel Status: On Campus  
Fee Update: Paid
```

Compare the AI-generated docstring with your manually written one

## **OBSERVATION:**

As per my Observation.Both docstrings looking good and has meaning as per the code that is been given,In my docstring it has simple English letters and words where as in Gemini code ,it has used some Terminology.

Apart from that Everything is good when we compare the docstrings .Externally We took help to get module level docstring from GEMINI.