**AI ASSISTED CODING LAB**

**ASSIGNMENT 2.4**

**ENROLLMENT NO** :2503A51L15

**BATCH NO**: 19

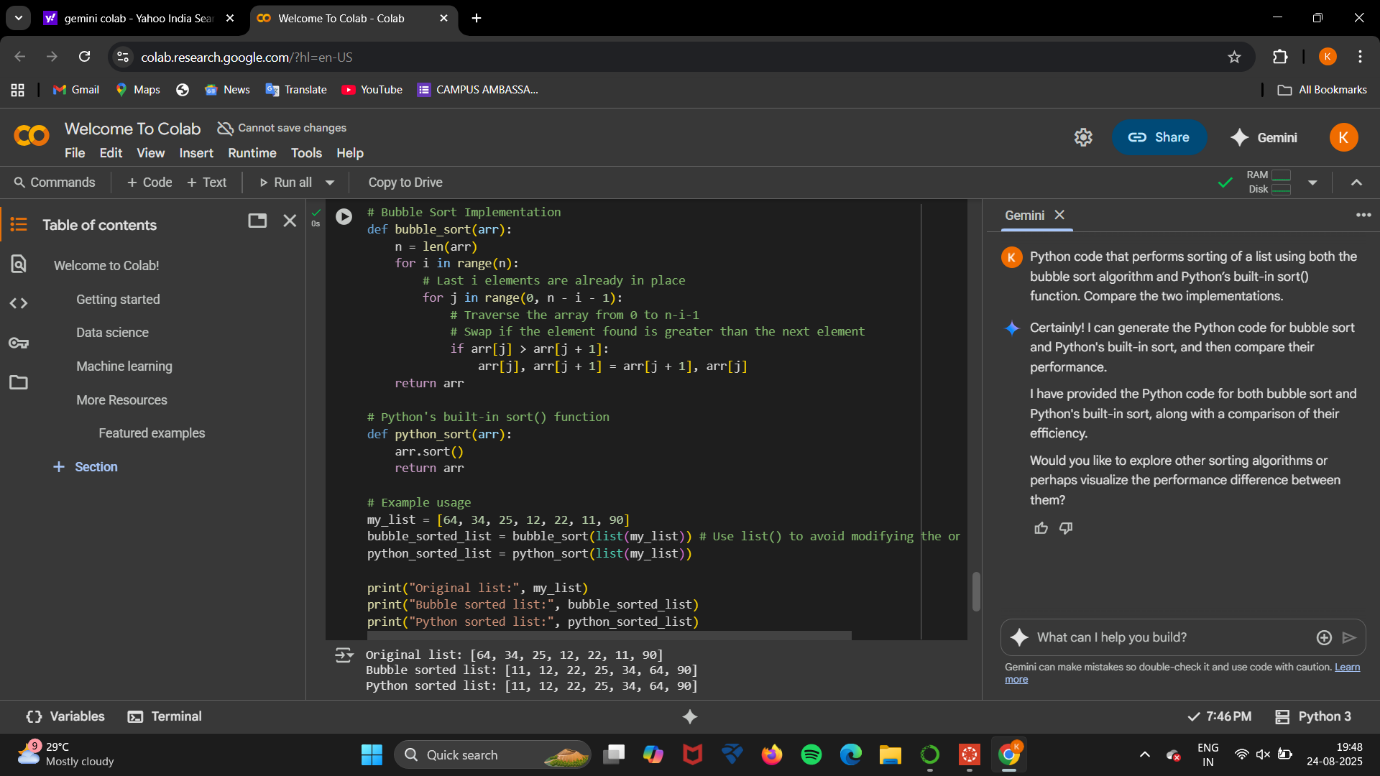
**NAME**: MOHAMMAD KHAJA AFZALUDDIN

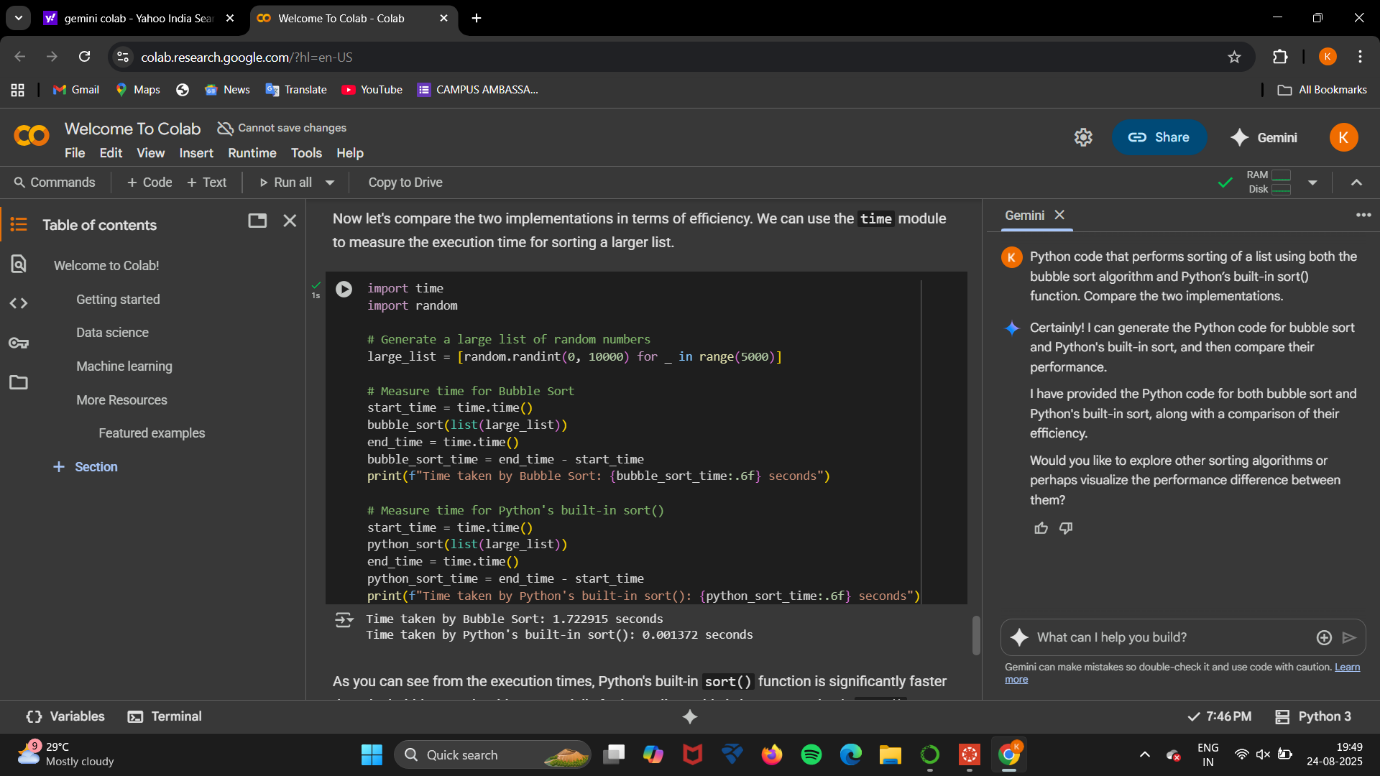
**TASK1**

TASK1 DESCRIPTION:- Open Google Colab and use Google Gemini to generate Python code that performs sorting of a list using both the bubble sort algorithm and Python’s built-in sort() function. Compare the two implementations.

PROMPT:-Python code that performs sorting of a list using both the bubble sort algorithm and Python’s built-in sort() function. Compare the two implementations.

CODE:-



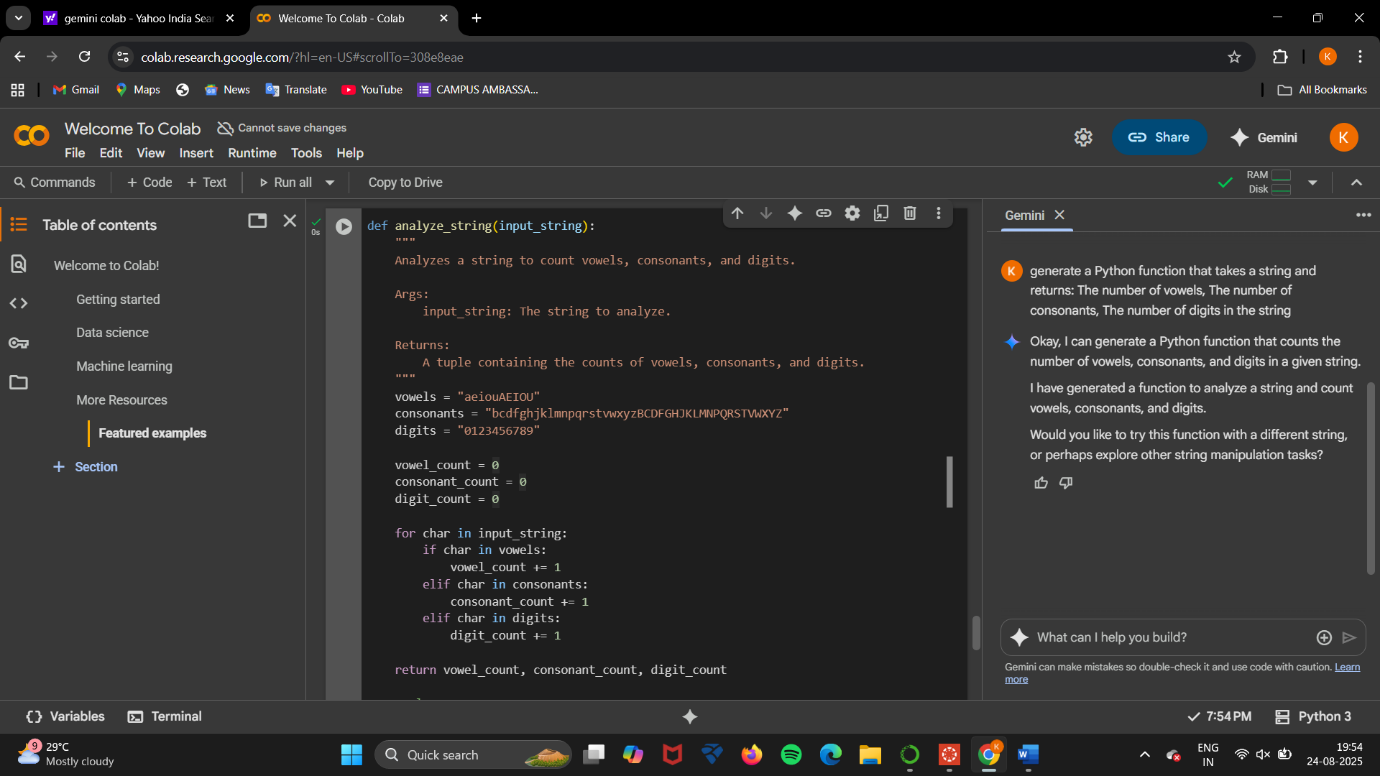


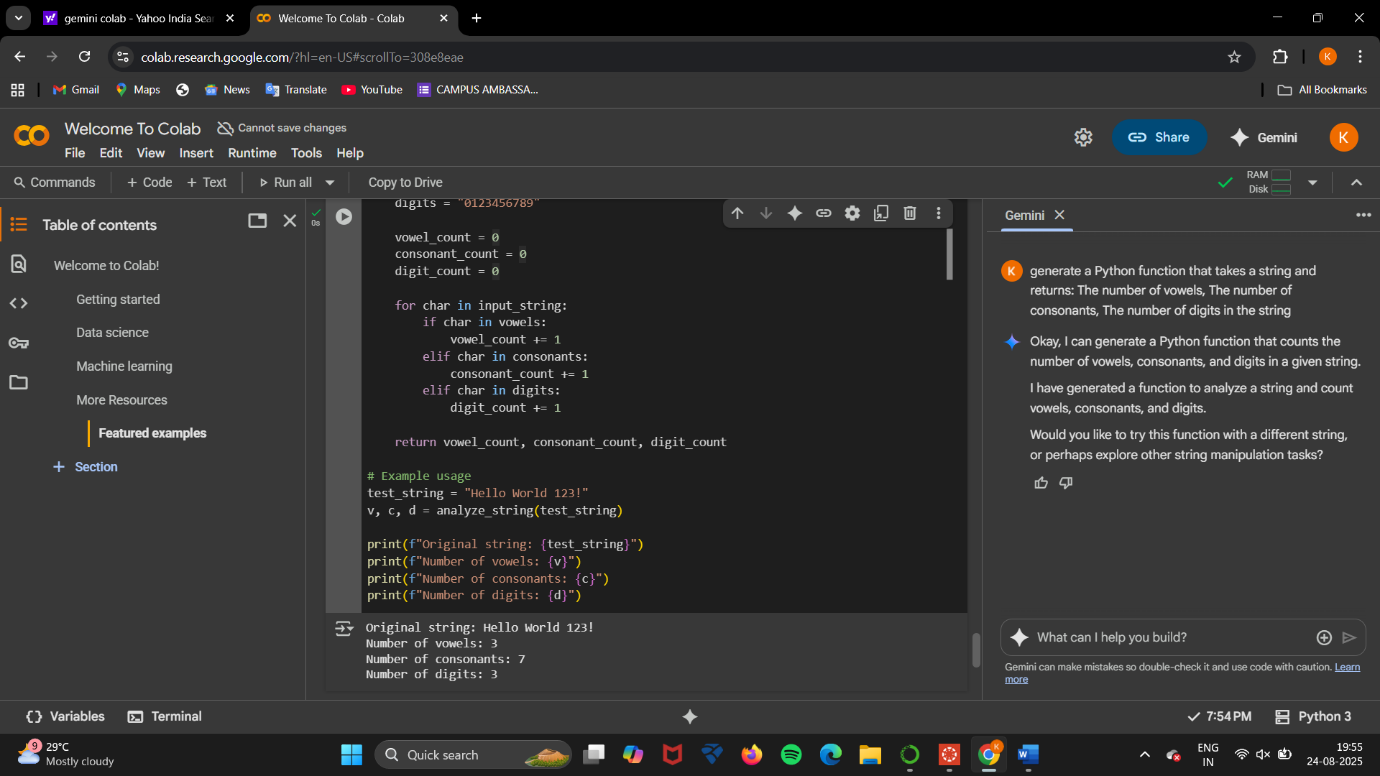
**TASK2**

TASK2 DESCRIPTION:- In Colab, use Google Gemini to generate a Python function that takes a string and returns The number of vowels, The number of consonants, The number of digits in the string

PROMPT:-Generate a Python function that takes a string and returns: The number of vowels, The number of consonants, The number of digits in the string

CODE:-

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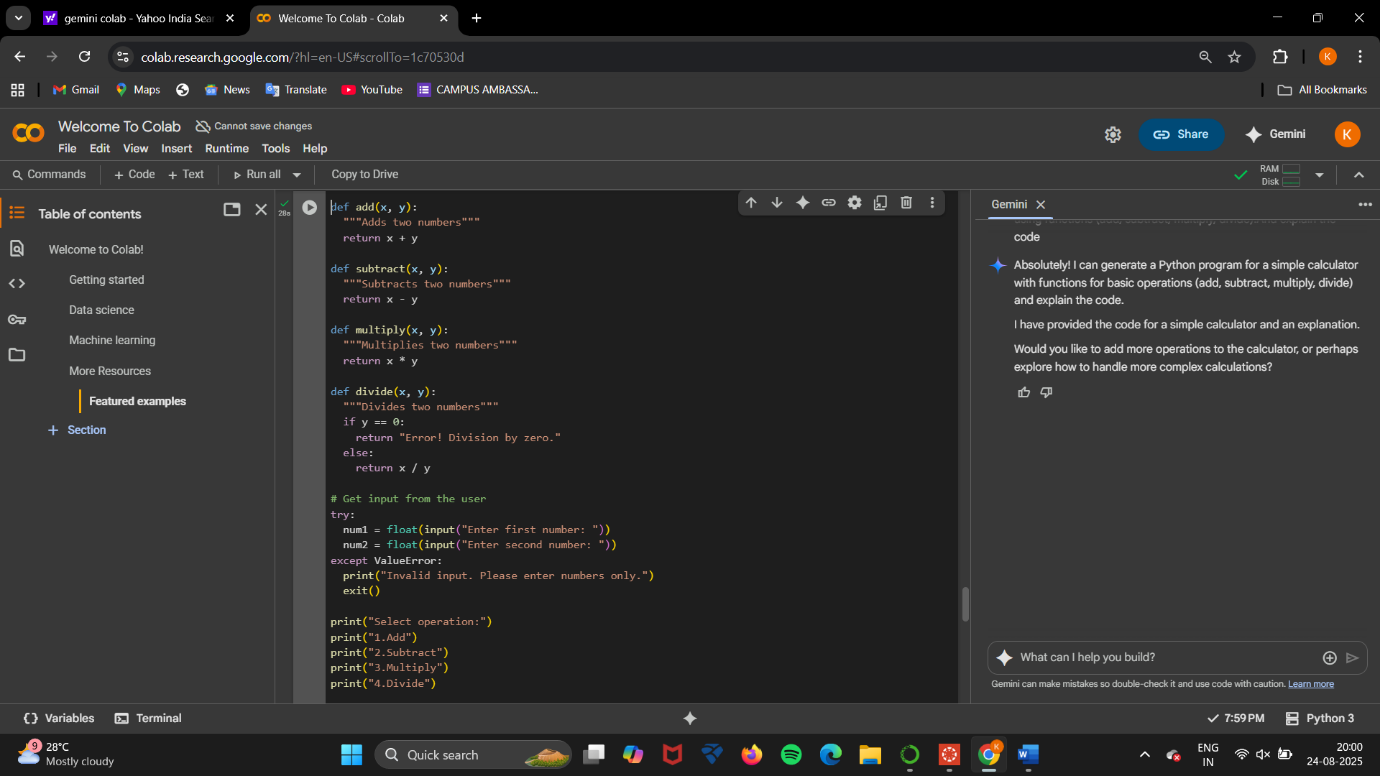
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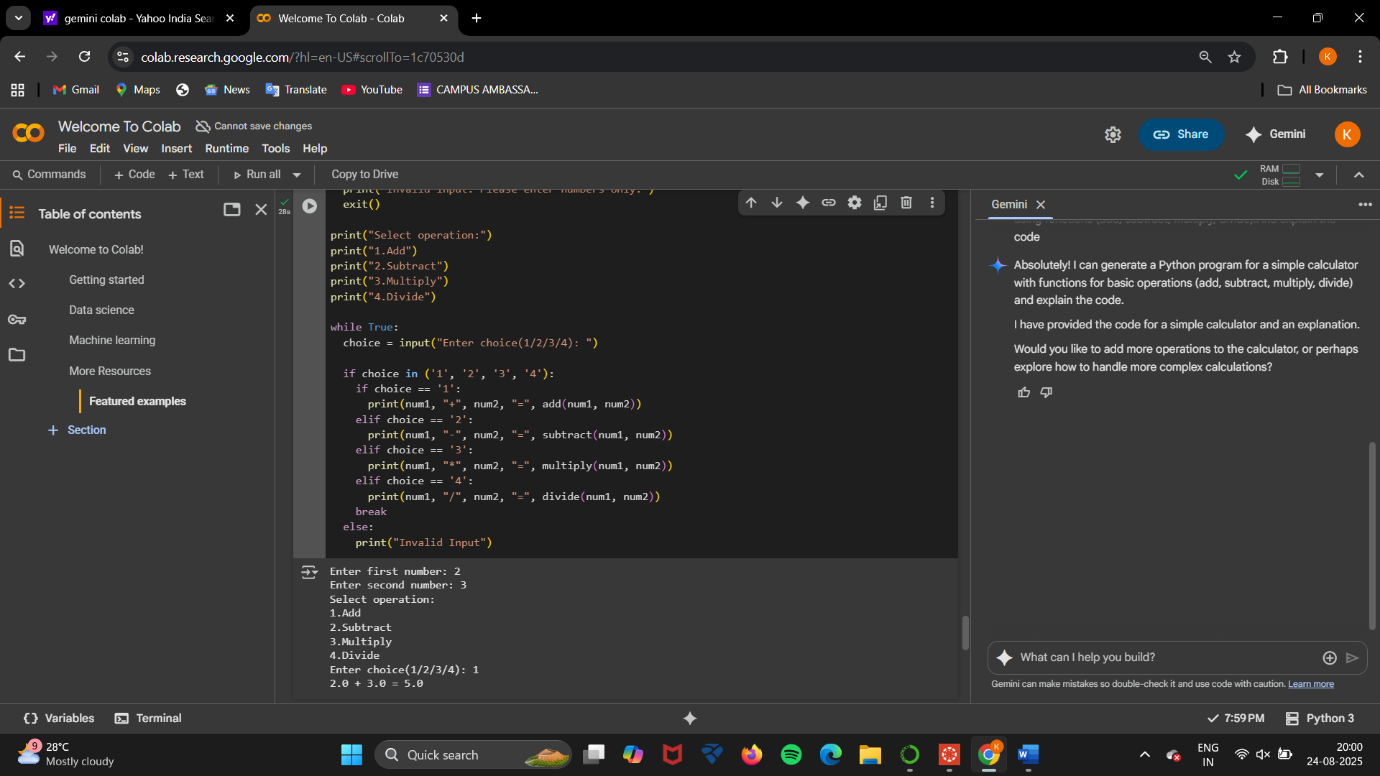
**TASK4**

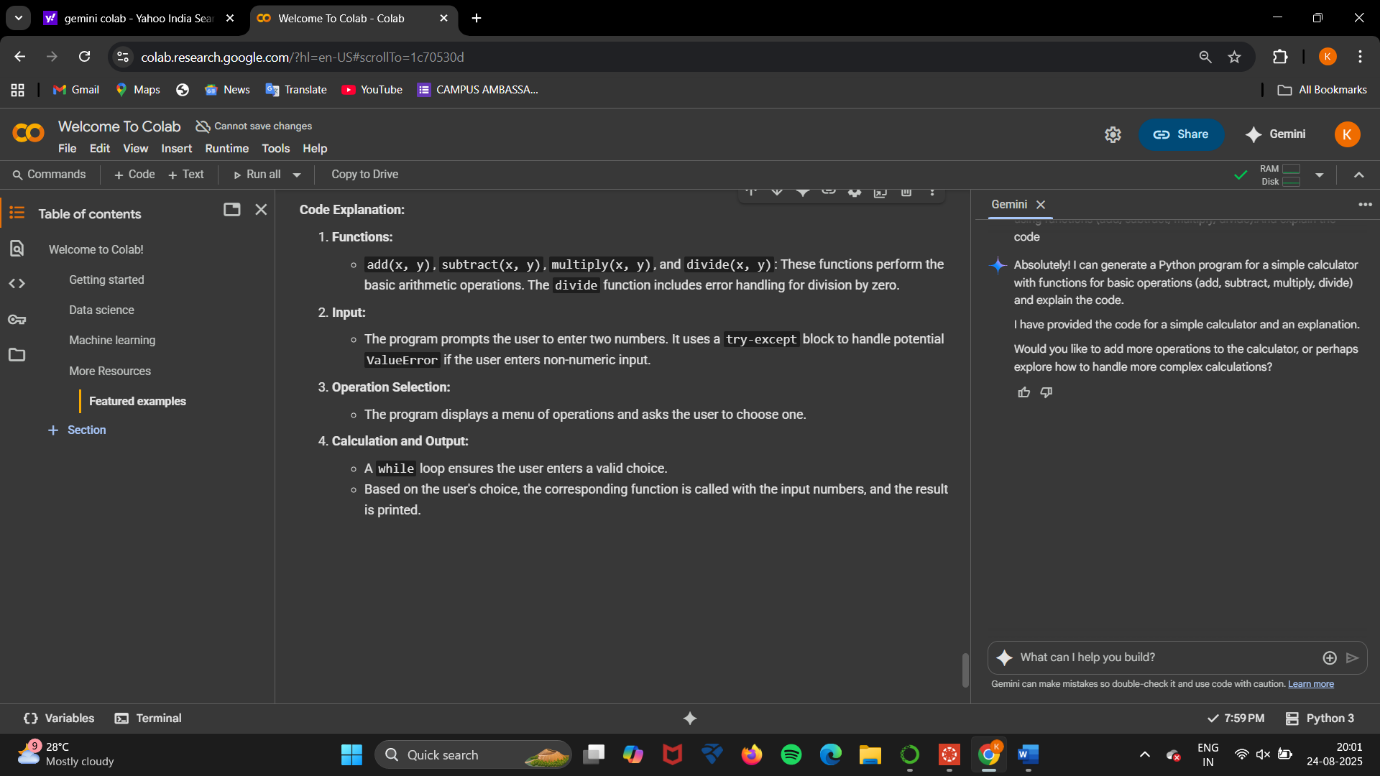
**TASK4 DESCRIPTION:-** **Ask Google Gemini to generate a Python program that implements a simple calculator using functions (add, subtract, multiply, divide). Then, ask Gemini to explain how the code works.**

**PROMPT:-Generate a Python program that implements a simple calculator using functions (add, subtract, multiply, divide).And explain the code.**

**CODE:-**

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**OBSERVATION:-**

**I observed how Google Gemini can generate Python programs when provided with clear prompts and how different problem-solving approaches can be compared and analyzed.**

* **In Task 1, Gemini generated two different sorting implementations: one using the manual Bubble Sort algorithm and the other using Python’s built-in sort() function. This highlighted the difference between a step-by-step algorithmic approach and an optimized built-in method, making it clear that while algorithms are useful for learning, built-in functions provide efficiency in practical use.**
* **In Task 2, I observed that Gemini was able to implement a function that processes a string and accurately counts vowels, consonants, and digits. This task demonstrated the AI’s ability to handle string manipulation and conditional logic effectively.**
* **In Task 4, Gemini successfully generated a program for a simple calculator using functions for addition, subtraction, multiplication, and division. More importantly, when asked to explain the code, it provided a step-by-step breakdown, showing how AI can assist not only in code generation but also in teaching and concept explanation.**