AI ASSISTED CODING LAB

ASSIGNMENT 2.4

ENROLLMENT NO :2503A51L15

BATCH NO: 19

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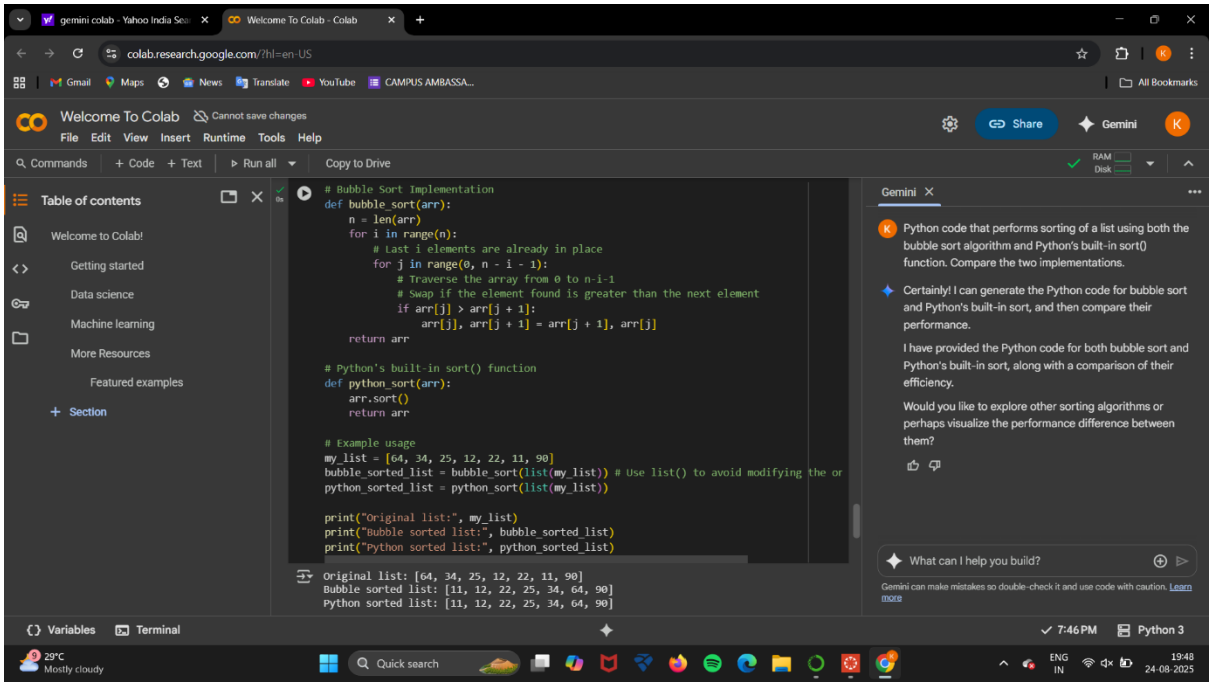
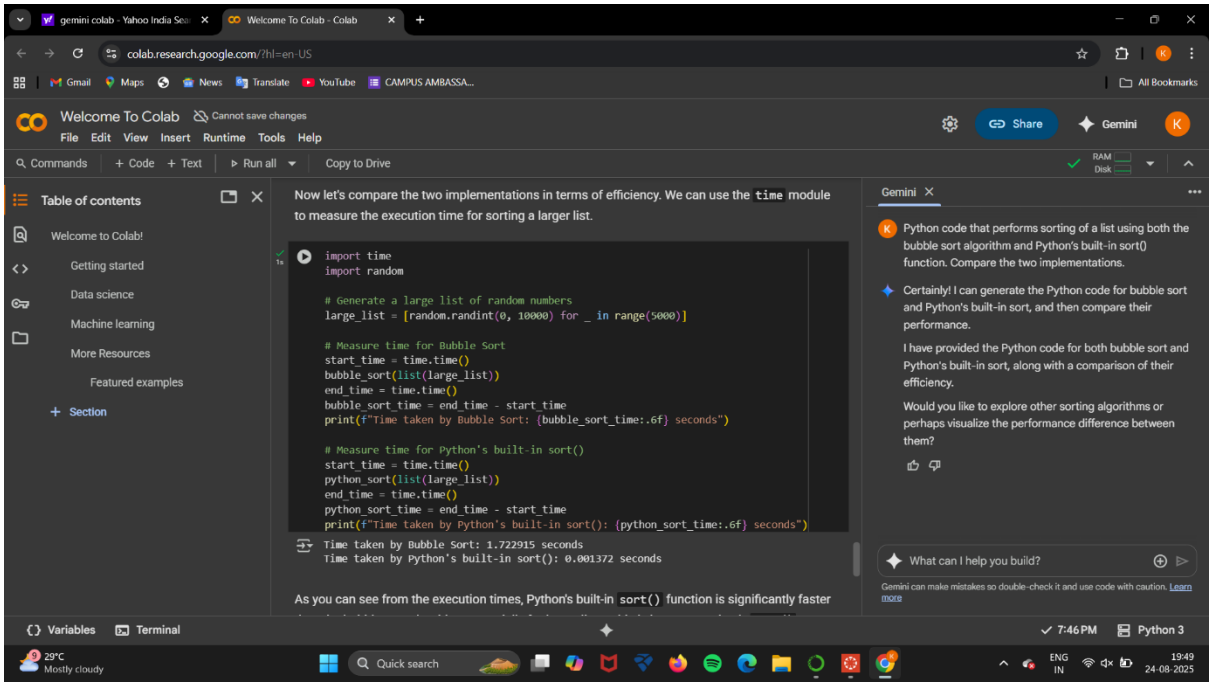
TASK1

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:-



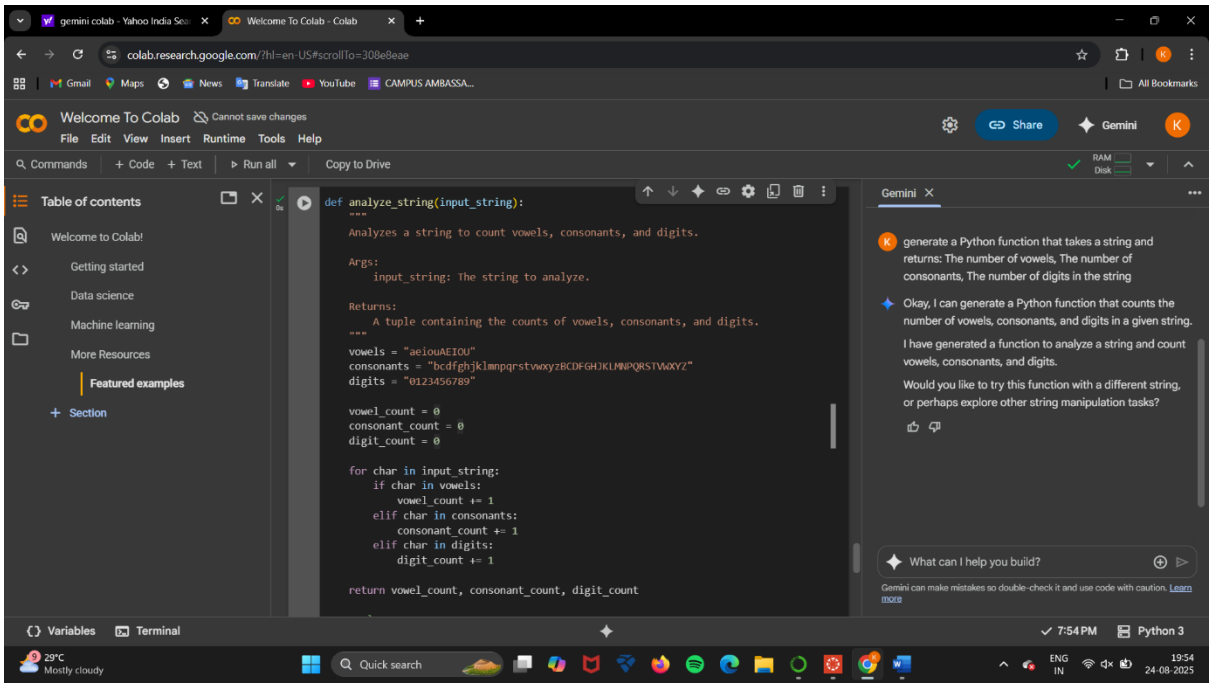


TASK2

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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def analyze_string(input_string):
"""
Analyzes a string to count vowels, consonants, and digits.
Args:
input_string: The string to analyze.
Returns:
A tuple containing the counts of vowels, consonants, and digits.
"""
vowels = "aeiouAEIOU"
consonants = "bcdfghjklmnpqrstvwxyzBCDFGHJKLMNPQRSTVWXYZ"
digits = "0123456789"
vowel_count = 0
consonant_count = 0
digit_count = 0
for char in input_string:
if char in vowels:
vowel_count += 1
elif char in consonants:
consonant_count += 1
elif char in digits:
digit_count += 1
return vowel_count, consonant_count, digit_count
Gemini
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
Okay, I can generate a Python function that counts the number of vowels, consonants, and digits in a given string.
I have generated a function to analyze a string and count vowels, consonants, and digits.
Would you like to try this function with a different string, or perhaps explore other string manipulation tasks?
What can I help you build?
Gemini can make mistakes so double-check it and use code with caution. Learn more
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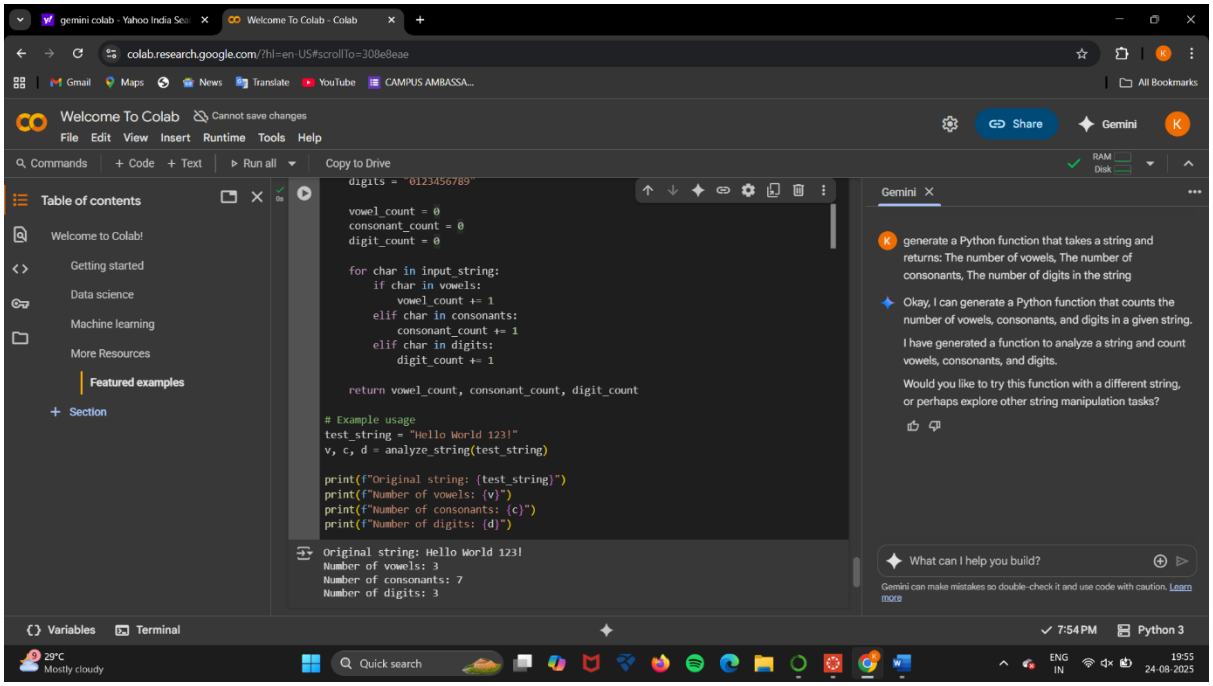
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vowel_count = 0
consonant_count = 0
digit_count = 0
for char in input_string:
if char in vowels:
vowel_count += 1
elif char in consonants:
consonant_count += 1
elif char in digits:
digit_count += 1
return vowel_count, consonant_count, digit_count
# Example usage
test_string = "Hello World 123!"
v, c, d = analyze_string(test_string)
print(f"Original string: {test_string}")
print(f"Number of vowels: {v}")
print(f"Number of consonants: {c}")
print(f"Number of digits: {d}")
Original string: Hello World 123!
Number of vowels: 3
Number of consonants: 7
Number of digits: 3
Gemini
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
Okay, I can generate a Python function that counts the number of vowels, consonants, and digits in a given string.
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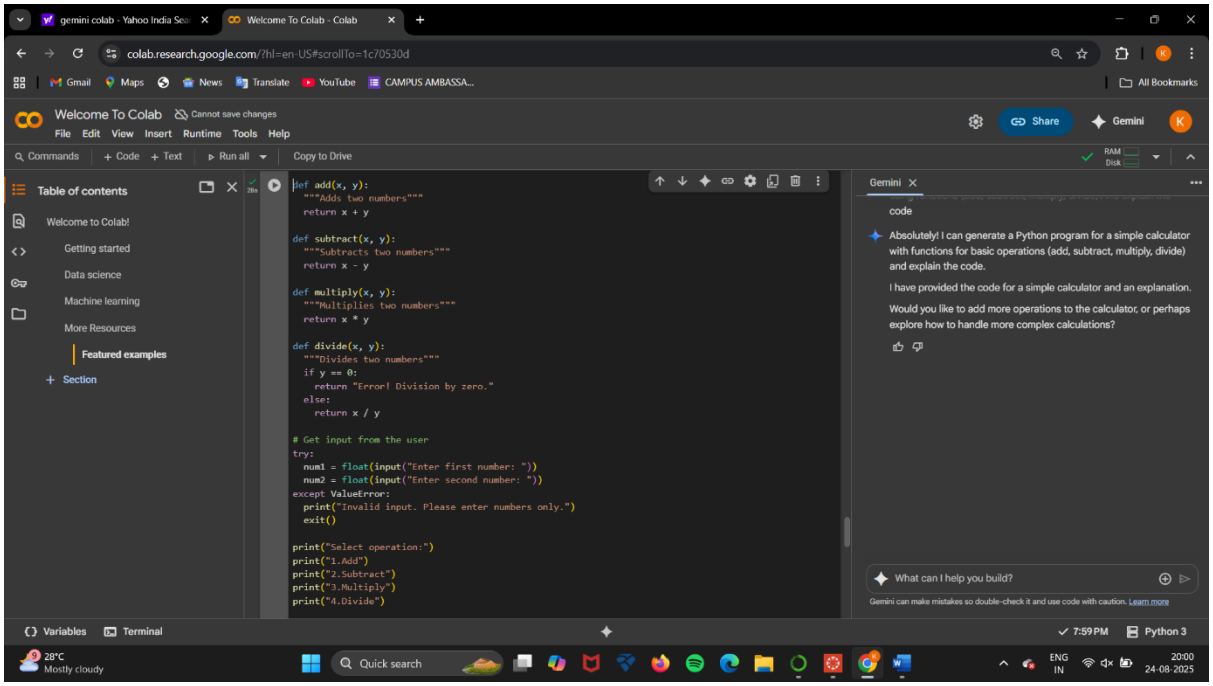
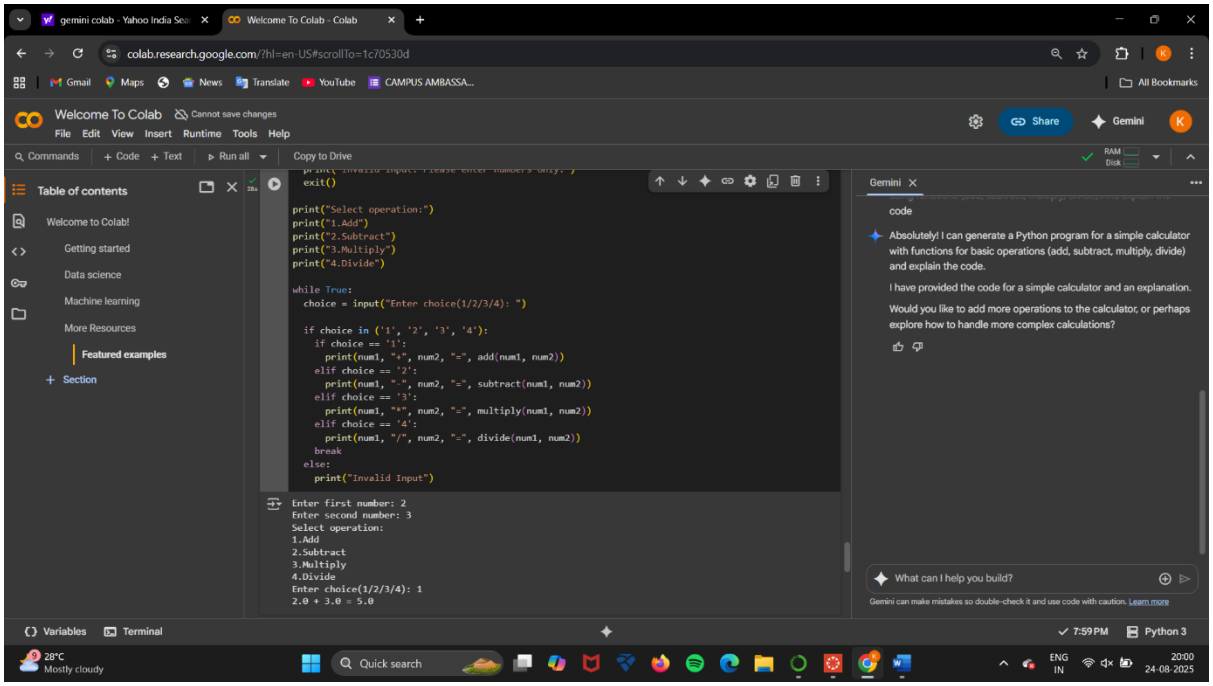
TASK4

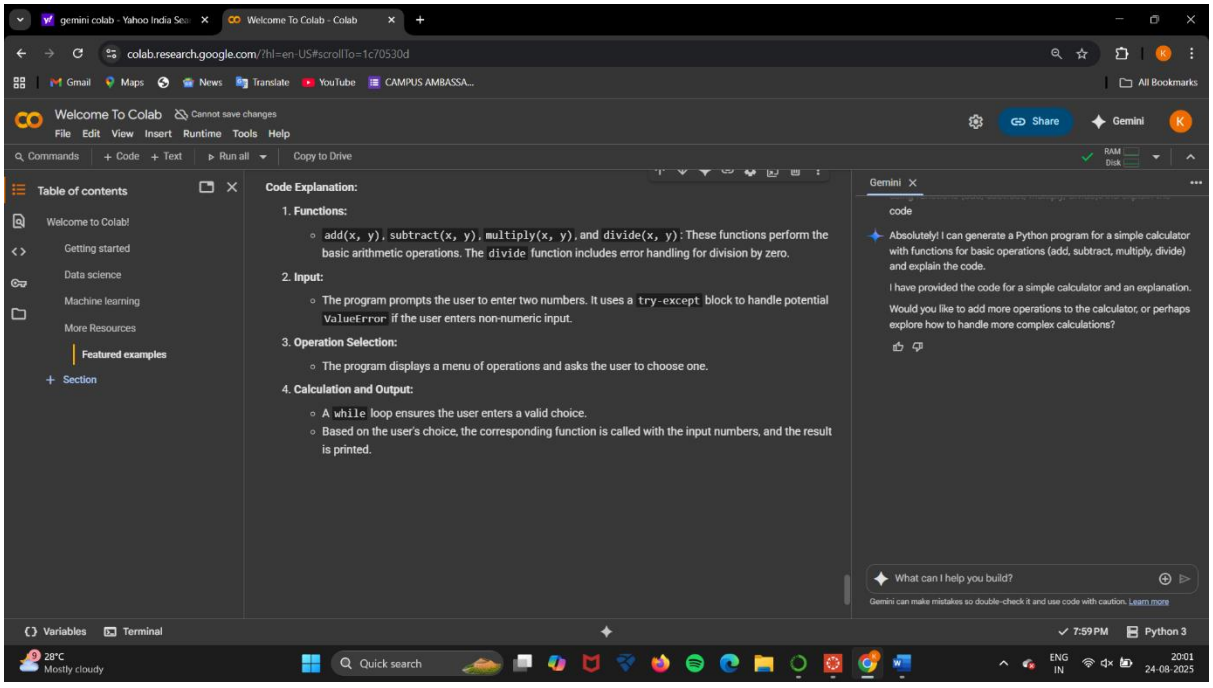
TASK4 DESCRIPTION:- Ask Google Gemini to generate a Python program that implements a simple calculator using functions (add, subtract, multiply, divide). Then, ask Gemini to explain how the code works.

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

CODE:-







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.**