AI ASSISTED CODING

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ASSIGNMENT:4.1

Task #1 – Zero-Shot Prompting with Conditional Validation

Objective

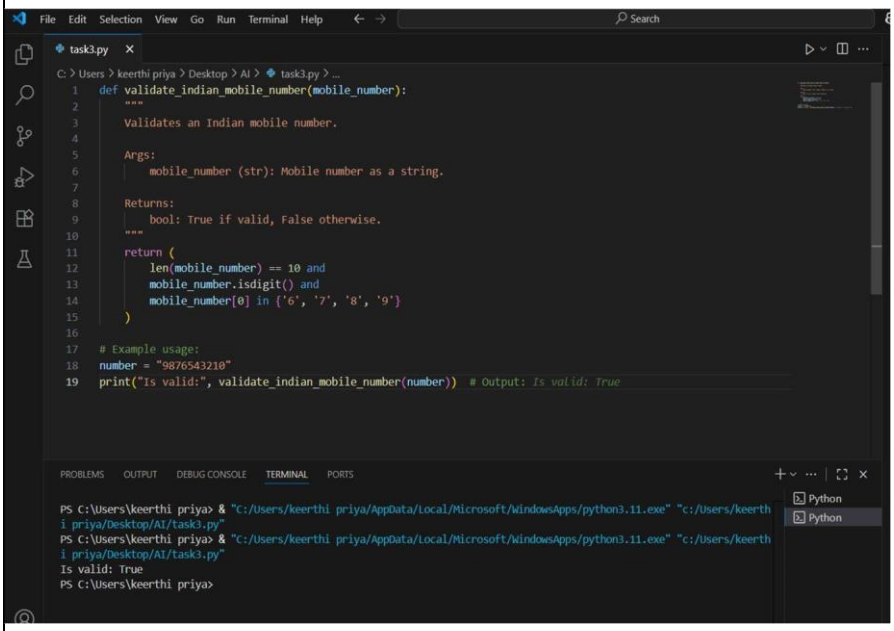
Use zero-shot prompting to instruct an AI tool to generate a function that validates an Indian mobile number.

Requirements

- The function must ensure the mobile number:
  - Starts with 6, 7, 8, or 9
  - Contains exactly 10 digits

Expected Output

- A valid Python function that performs all required validations without using any input-output examples in the prompt.
- CODE WITH OUTPUT:



Task #2 – One-Shot Prompting with Edge Case Handling

Objective

Use one-shot prompting to generate a Python function that calculates the factorial of a number.

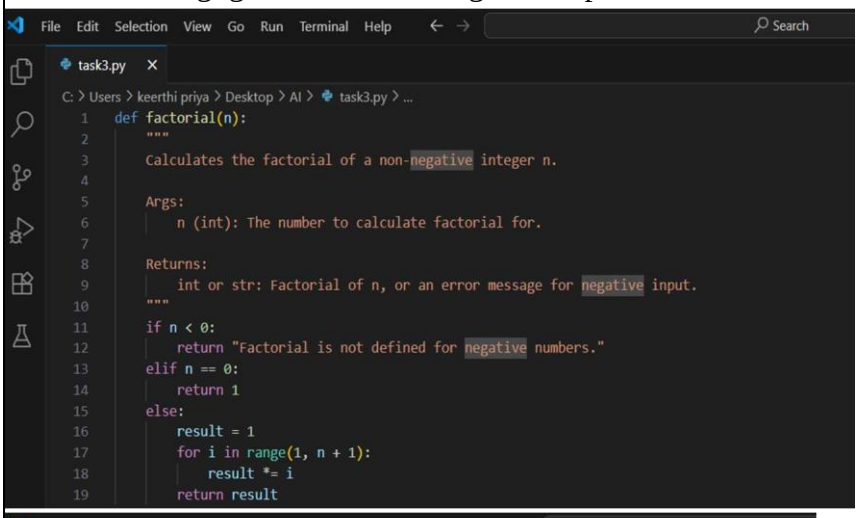
Requirements

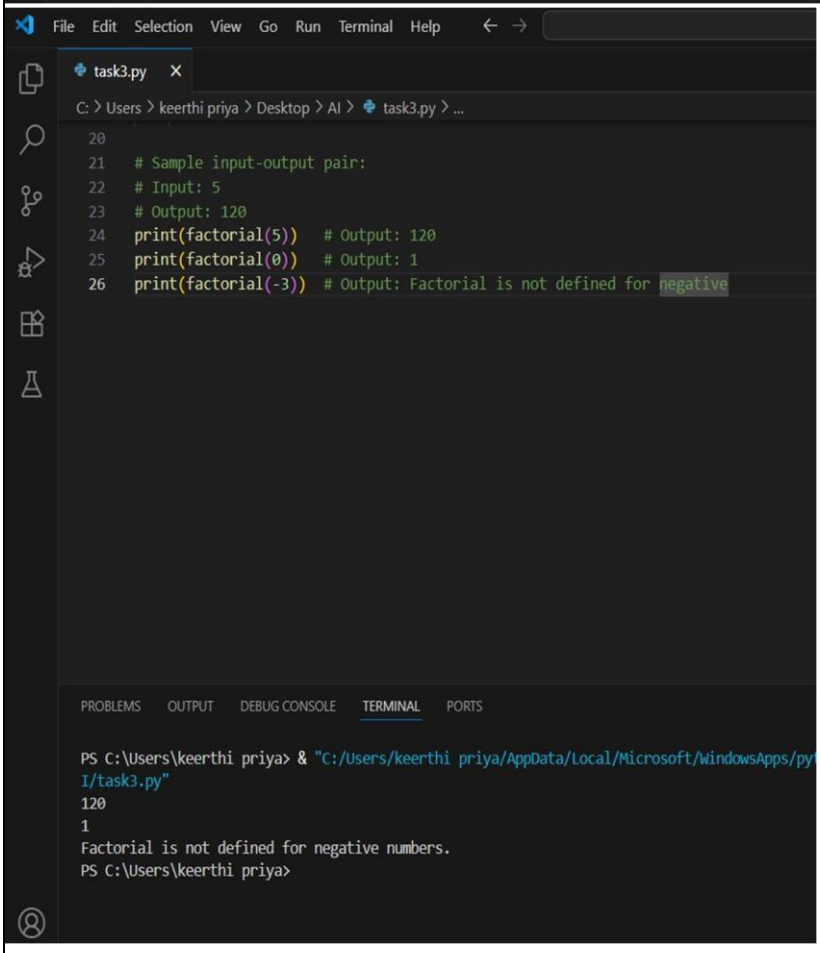
- Provide one sample input-output pair in the prompt to guide the AI.
- The function should handle:
  - 0! correctly

- Negative input by returning an appropriate message

Expected Output

- A Python function with correct factorial logic and edge case handling, generated from single example.





Task #3 – Few-Shot Prompting for Nested Dictionary Extraction

Objective

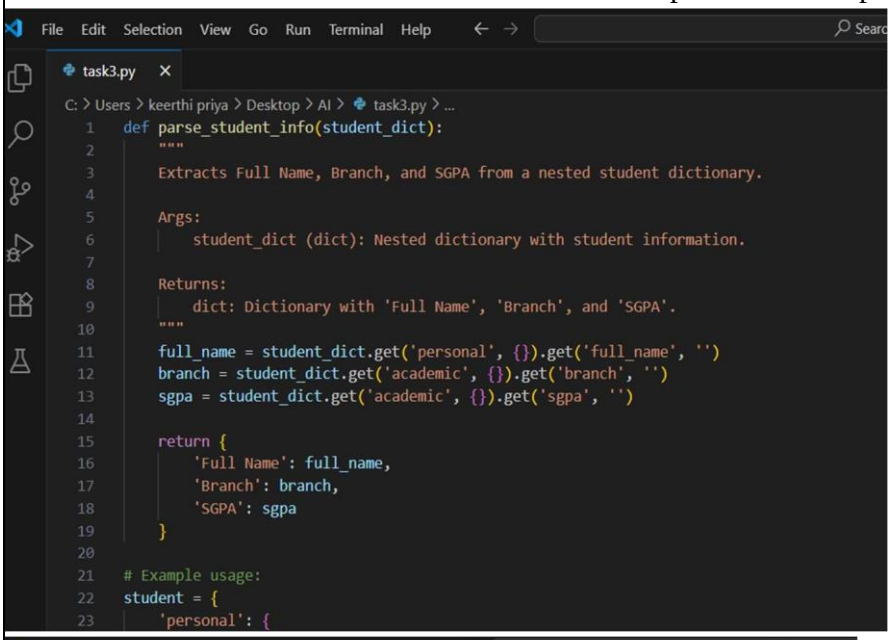
Use few-shot prompting (2–3 examples) to instruct the AI to create a function that parses a nested dictionary representing student information.

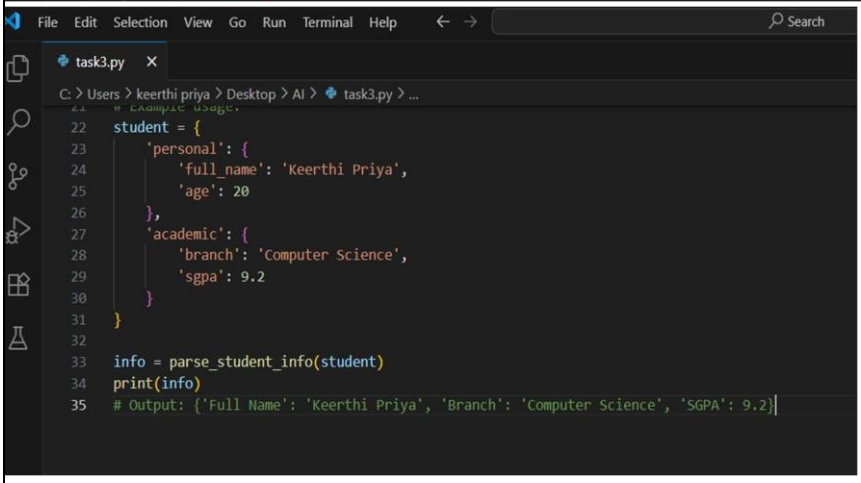
Requirements

- The function should extract and return:
  - Full Name
  - Branch
  - SGPA

Expected Output

- A reusable Python function that correctly navigates and extracts values from nested dictionaries based on the provided examples.





Task #4 – Comparing Prompting Styles for File Analysis

Objective

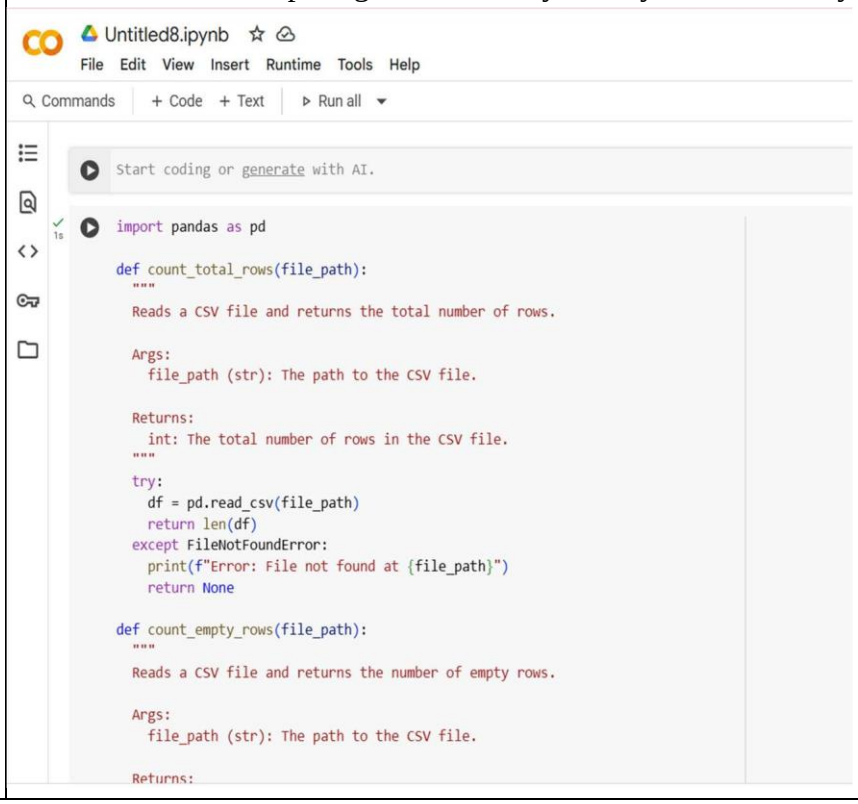
Experiment with zero-shot, one-shot, and few-shot prompting to generate functions for CSV file analysis.

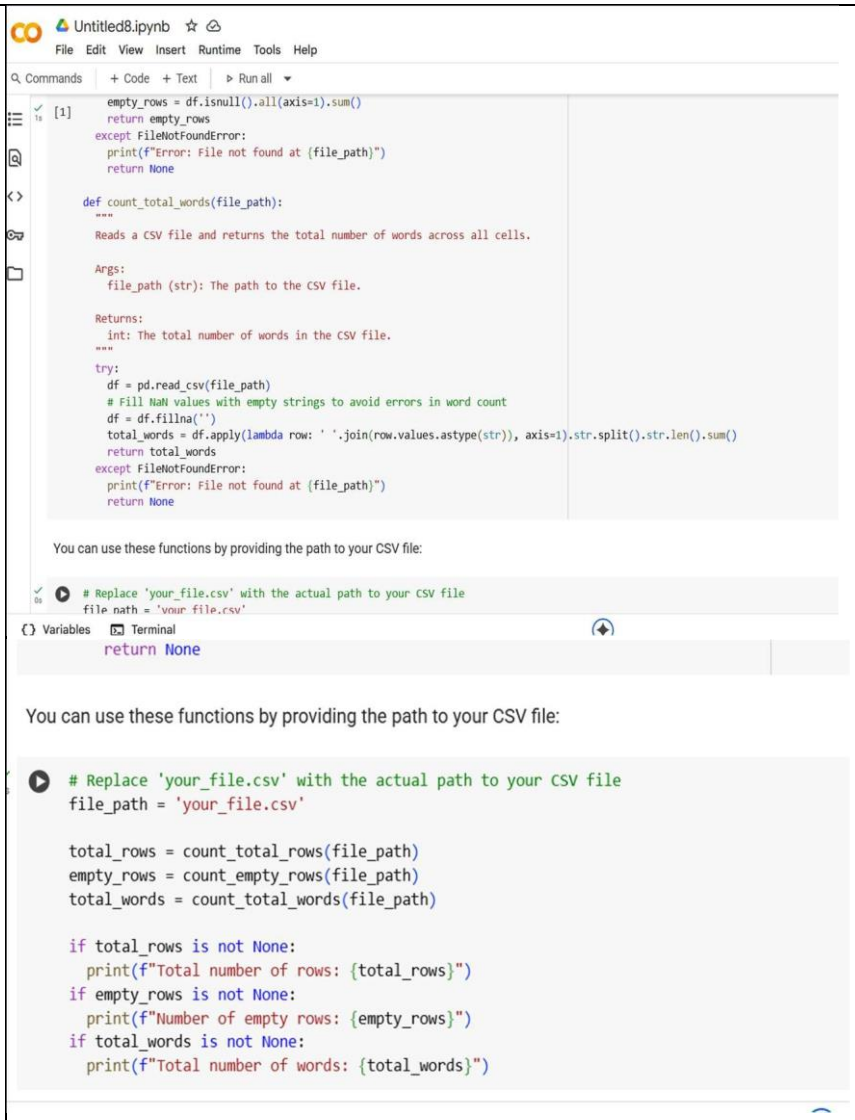
Requirements

- Each generated function should:
  - Read a .csv file
  - Return the total number of rows
  - Count the number of empty rows
  - Count the number of words across the file

Expected Output

- Working Python functions for each prompting style, with a brief reflection comparing their accuracy, clarity, and efficiency.





Task #5 – Few-Shot Prompting for Text Processing and Word Frequency

Objective

Use few-shot prompting (with at least 3 examples) to generate a Python function that processes text and analyzes word frequency.

Requirements

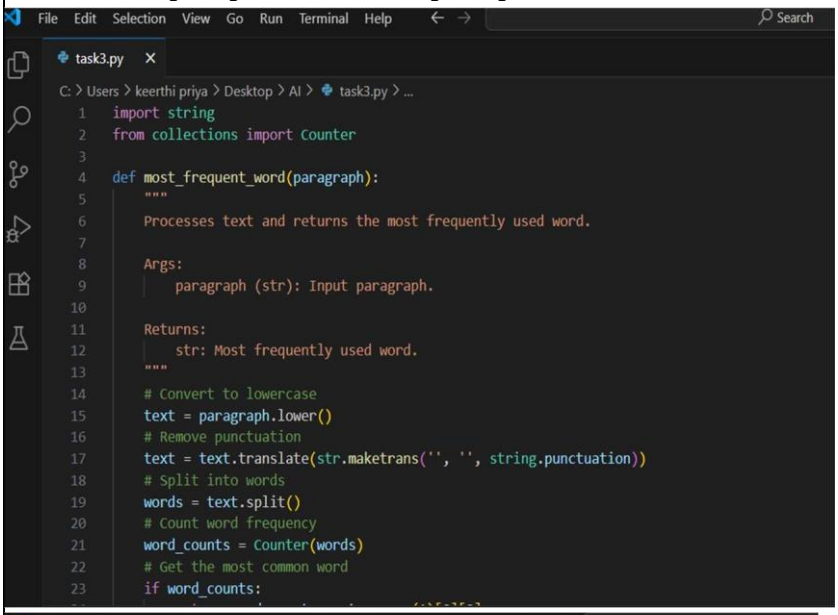
The function must:

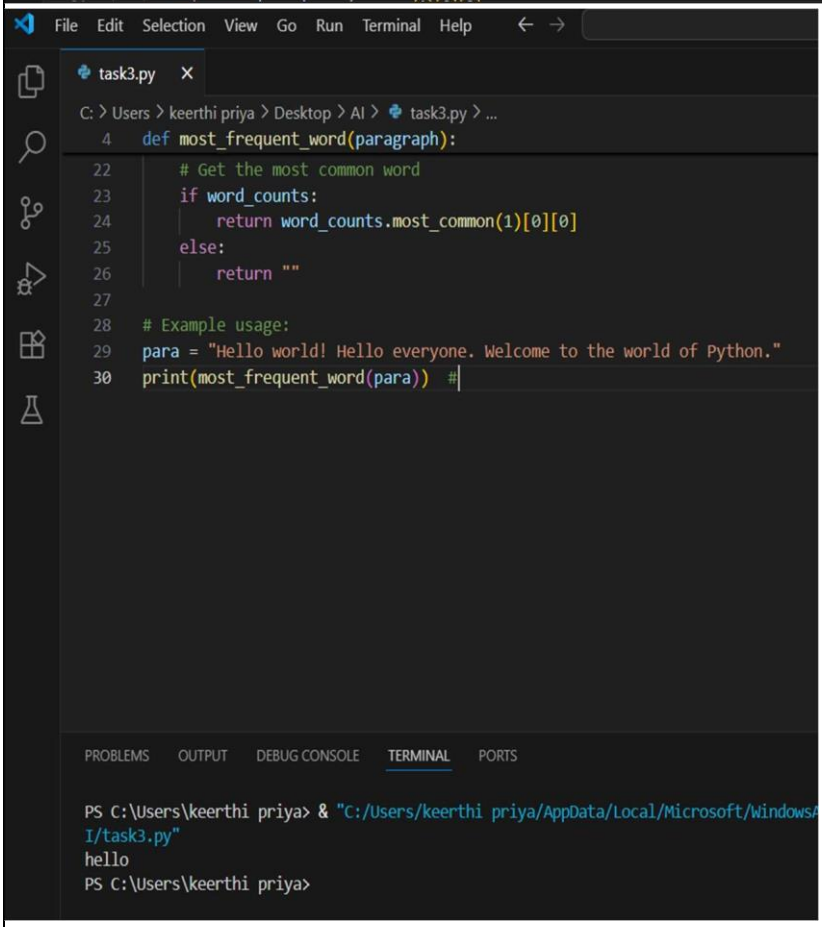
- Accept a paragraph as input
- Convert all text to lowercase
- Remove punctuation
- Return the most frequently used word

Expected Output

- A functional Python script that performs text cleaning,

tokenization, and returns the most common word using only the examples provided in the prompt





Note: Report should be submitted a word document for all tasks in a single document with prompts, comments & code explanation, and

output and if required, screenshots

Evaluation Criteria:

Criteria	Max Marks
Zero Shot (Task #1)	0.5
One Shot (Task#2)	0.5
Few Shot (Task#3, Task#4 & Task #5)	1.5
Total	**2.5 Marks**