Assignment 4.3

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Batch – 18

Task 1: Zero-Shot Prompting – Leap Year Check

Scenario

Zero-shot prompting involves giving instructions without providing examples.

Task Description

Use zero-shot prompting to instruct an AI tool to generate a Python function that:

• Accepts a year as input

• Checks whether the given year is a leap year

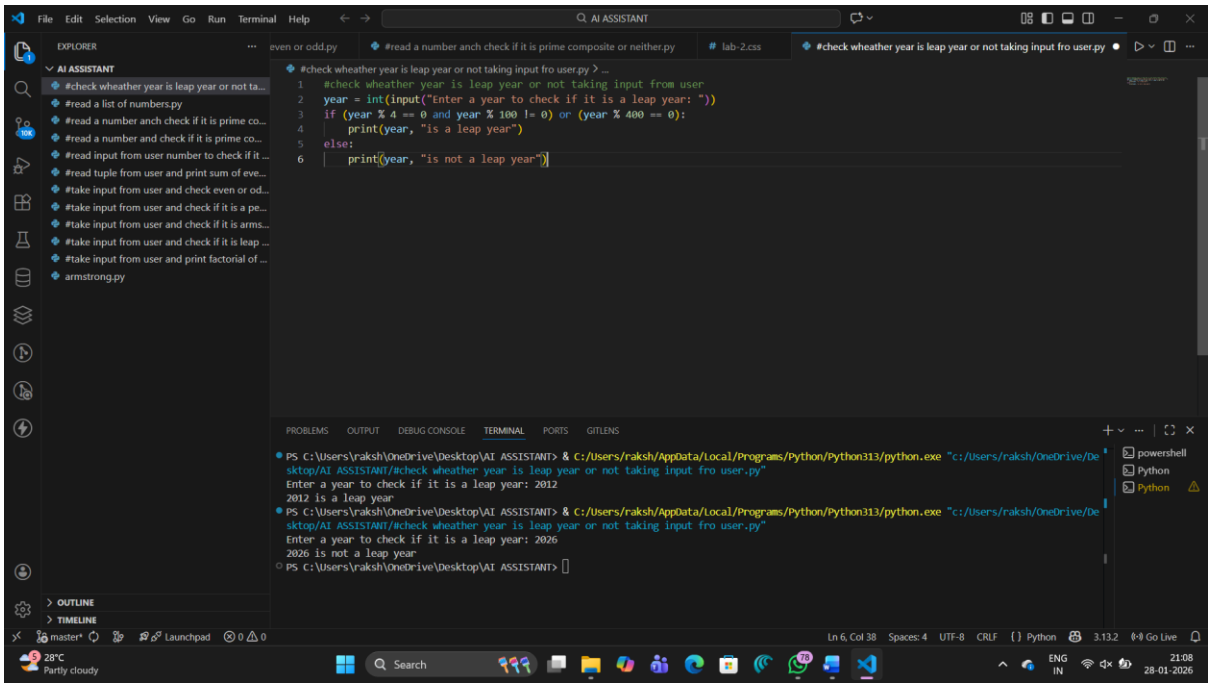
• Returns an appropriate result

Note: No input-output examples should be provided in the prompt.

Prompt :

#check wheather year is leap year or not taking input from user

Code :



Analysis :

AI correctly understood the problem without examples.

Logical conditions were accurate (divisible by 4, 100, 400 rules).

Function structure was simple and efficient**.**

Task 2: One-Shot Prompting – Centimeters to Inches Conversion

Scenario

One-shot prompting guides AI using a single example.

Task Description

Use one-shot prompting by providing one input-output example to generate a Python

function that:

• Converts centimeters to inches

• Uses the correct mathematical formula

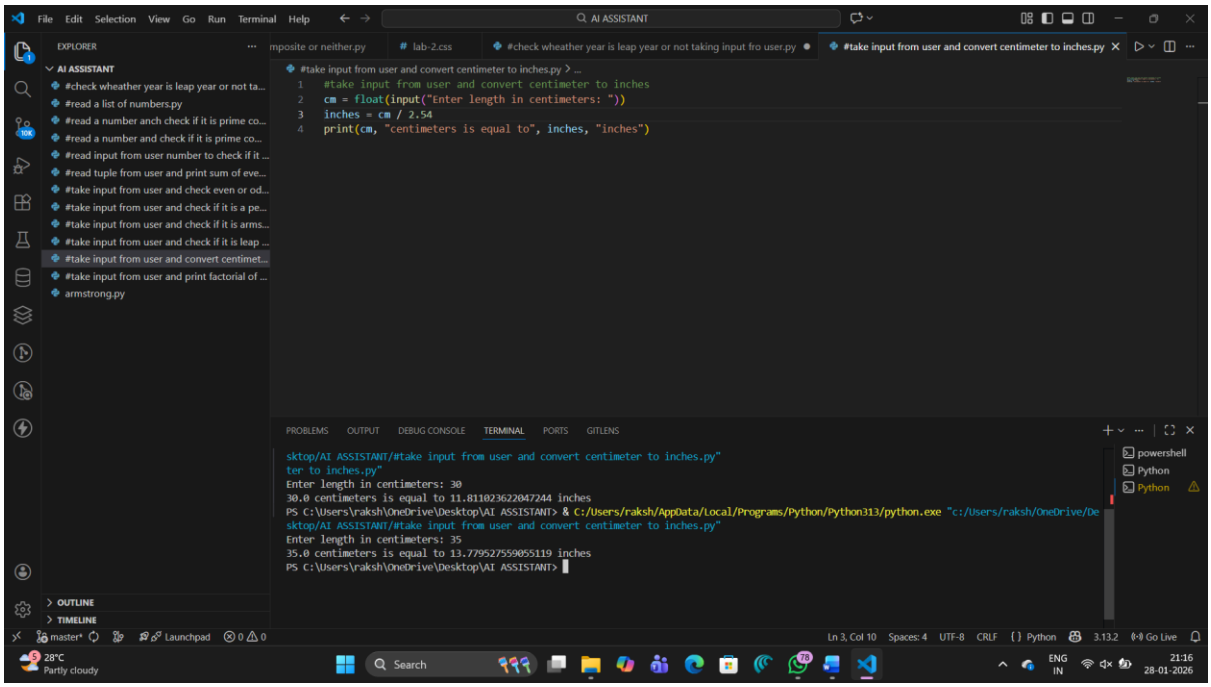
Example provided in prompt:

Input: 10 cm → Output: 3.94 inches

Prompt :

#take input from user and convert centimeter to inches

Code:



Analysis

Single example helped AI understand the formula requirement.

Conversion logic (cm ÷ 2.54) was correctly applied.

Output matched expected precision.

Task 3: Few-Shot Prompting – Name Formatting

Scenario

Few-shot prompting improves accuracy by providing multiple examples.

Task Description

Use few-shot prompting with 2–3 examples to generate a Python function that:

• Accepts a full name as input

• Formats it as “Last, First”

Example formats:

• "John Smith" → "Smith, John"

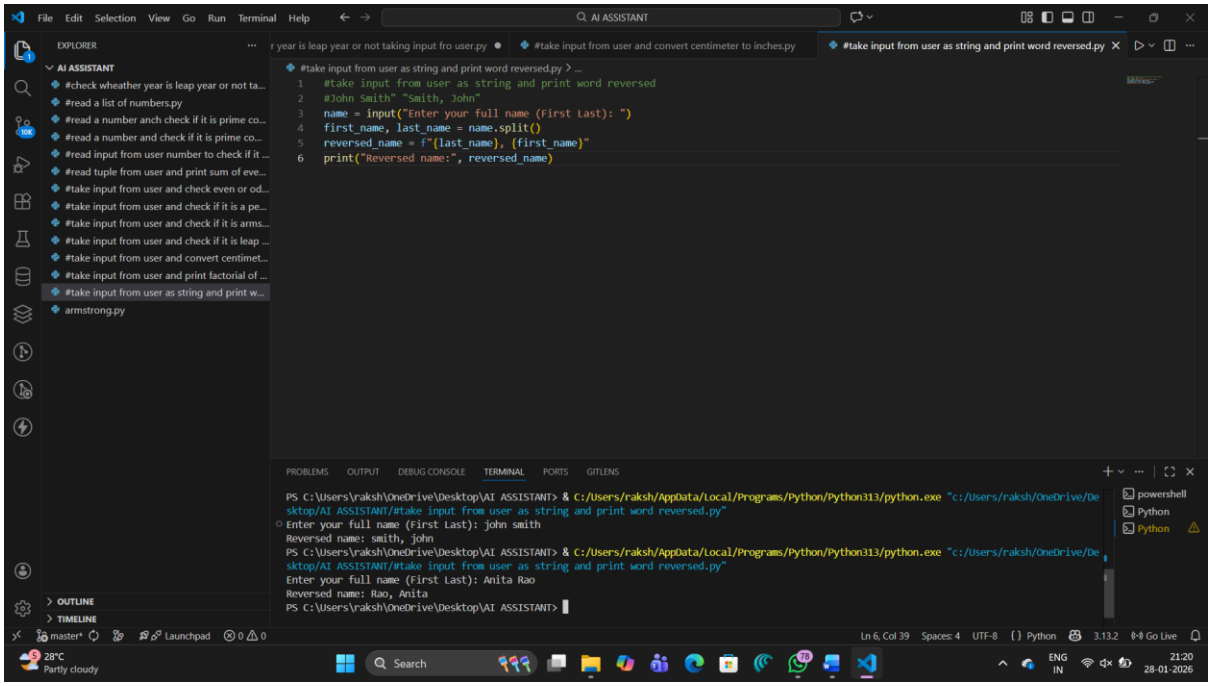
• "Anita Rao" → "Rao, Anita"

Prompt

#take input from user as string and print word reversed

#John Smith" → "Smith, John"

Code:



Analysis

Multiple examples improved format understanding.

Output strictly followed “Last, First” pattern.

Function handled input consistently.

Task 4: Comparative Analysis – Zero-Shot vs Few-Shot

Scenario

Different prompt strategies may produce different code quality.

Task Description

• Use zero-shot prompting to generate a function that counts vowels in a string

• Use few-shot prompting for the same problem

• Compare both outputs based on:

o Accuracy

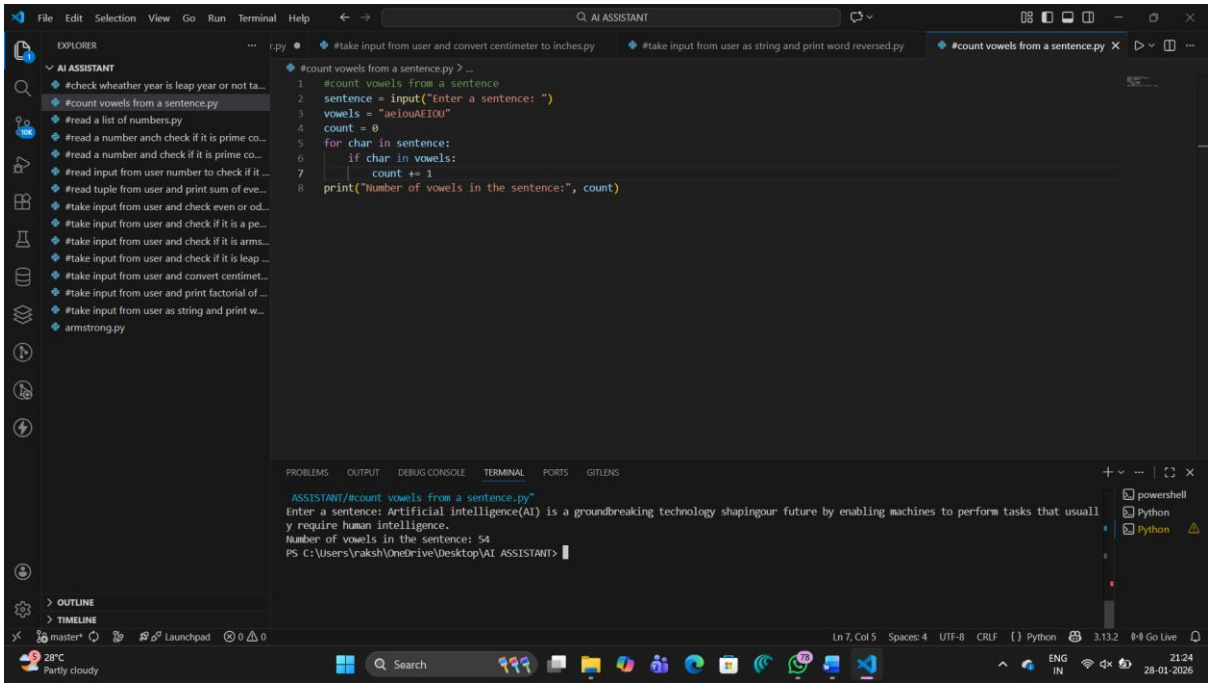
o Readability

o Logical clarity

prompt

#count vowels from a sentence

Code:



Analysis

Zero-shot version was logically correct but longer.

Few-shot version was more concise and readable.

Few-shot prompting improved code quality.

Task 5: Few-Shot Prompting – File Handling

Scenario

File processing requires clear logical understanding.

Task Description

Use few-shot prompting to generate a Python function that:

• Reads a .txt file

• Counts the number of lines in the file

• Returns the line count

Expected Output

• Working Python file-processing function

• Correct line count

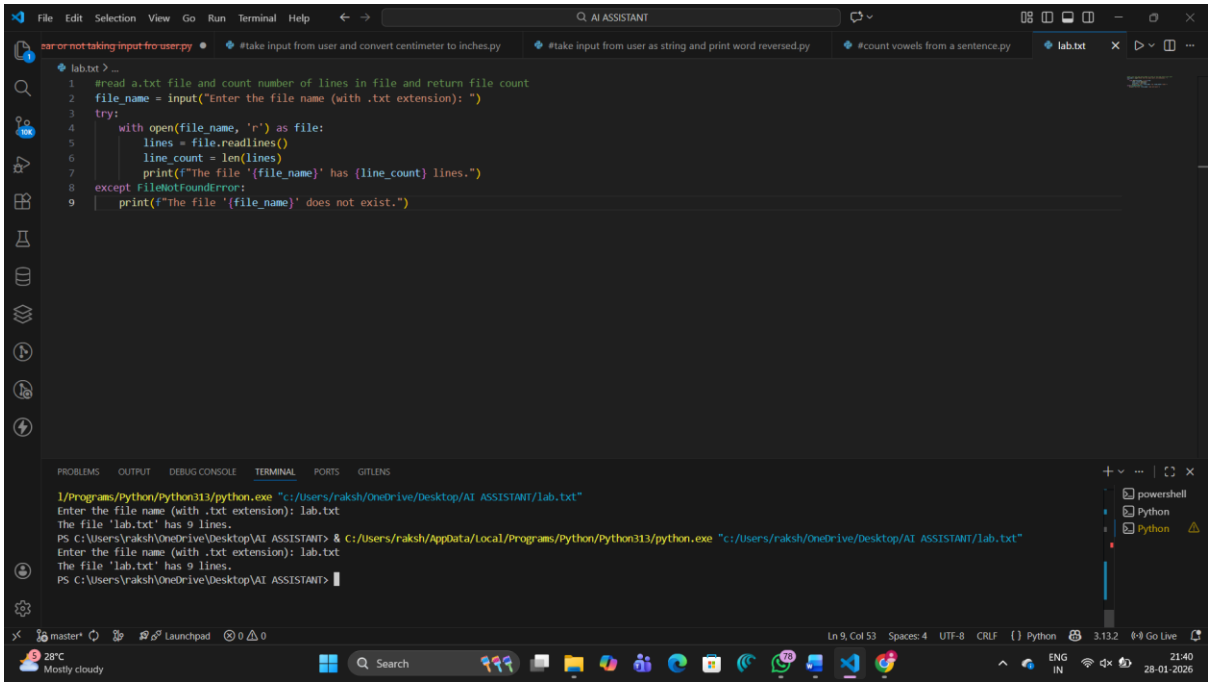
• Sample .txt input and output

• AI-assisted logic explanation

Prompt

#read a .txt file and count number of lines in file and return file count

Code:



Analysis

Few-shot prompting improved understanding of file operations.

Function correctly read file and counted lines.

Proper use of file handling methods.

Logic was clear and structured.