Assingment-4.3

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.

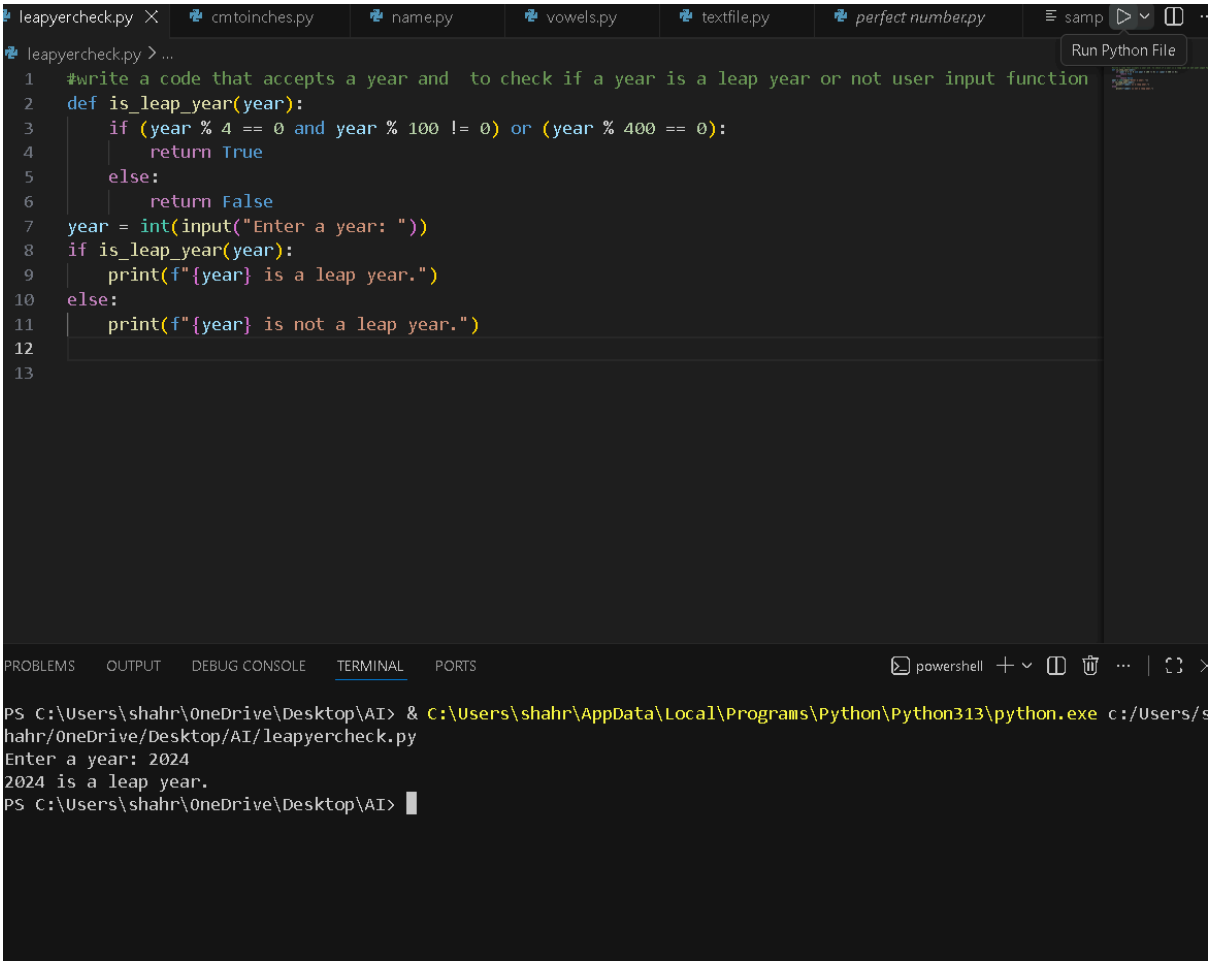
Expected Output

• AI-generated leap year checking function

• Correct logical conditions

• Sample input and output

• Screenshot of AI-generated response (if required)



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*

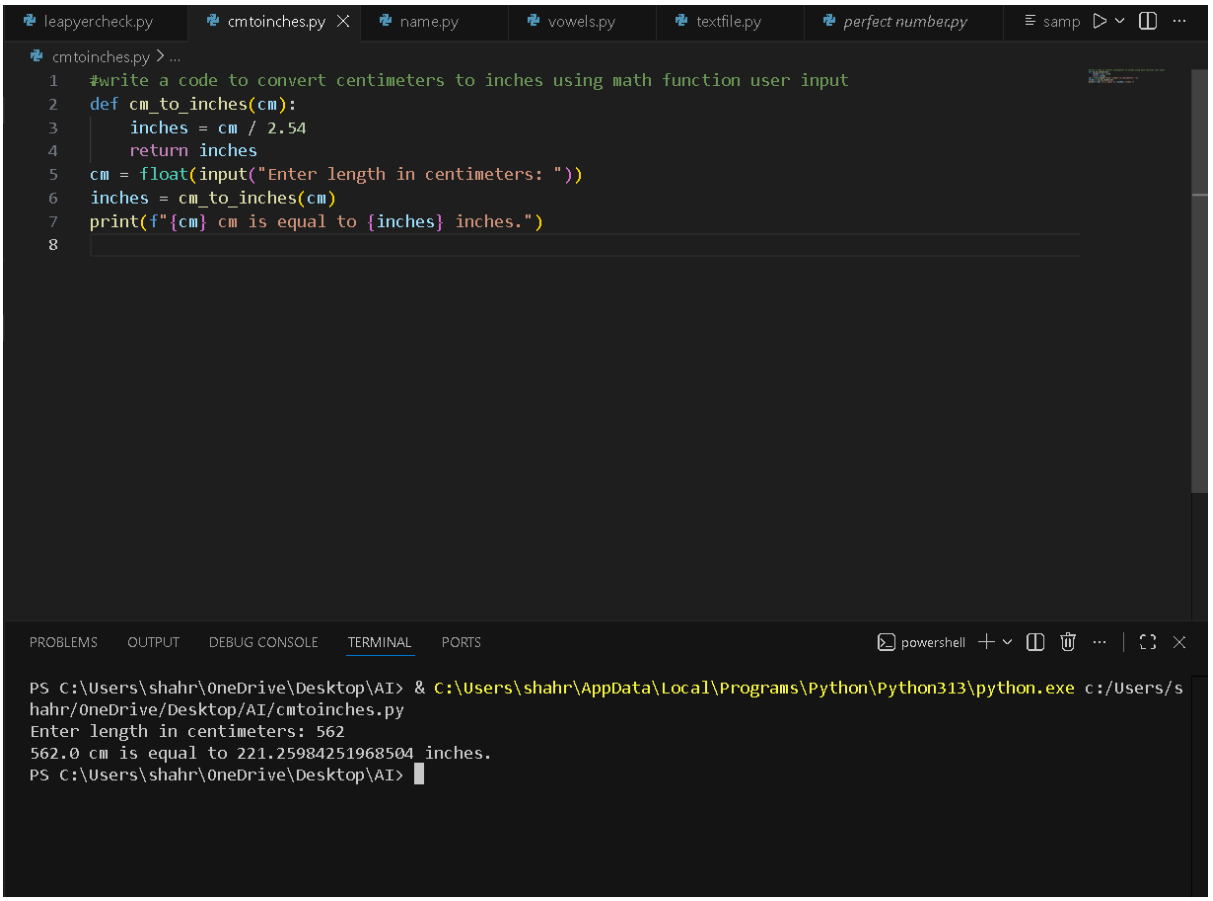
Example provided in prompt:

Input: 10 cm → Output: 3.94 inches

Expected Output

- *Python function with correct conversion logic*
- *Accurate calculation*

• *Sample test cases and outputs*



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*

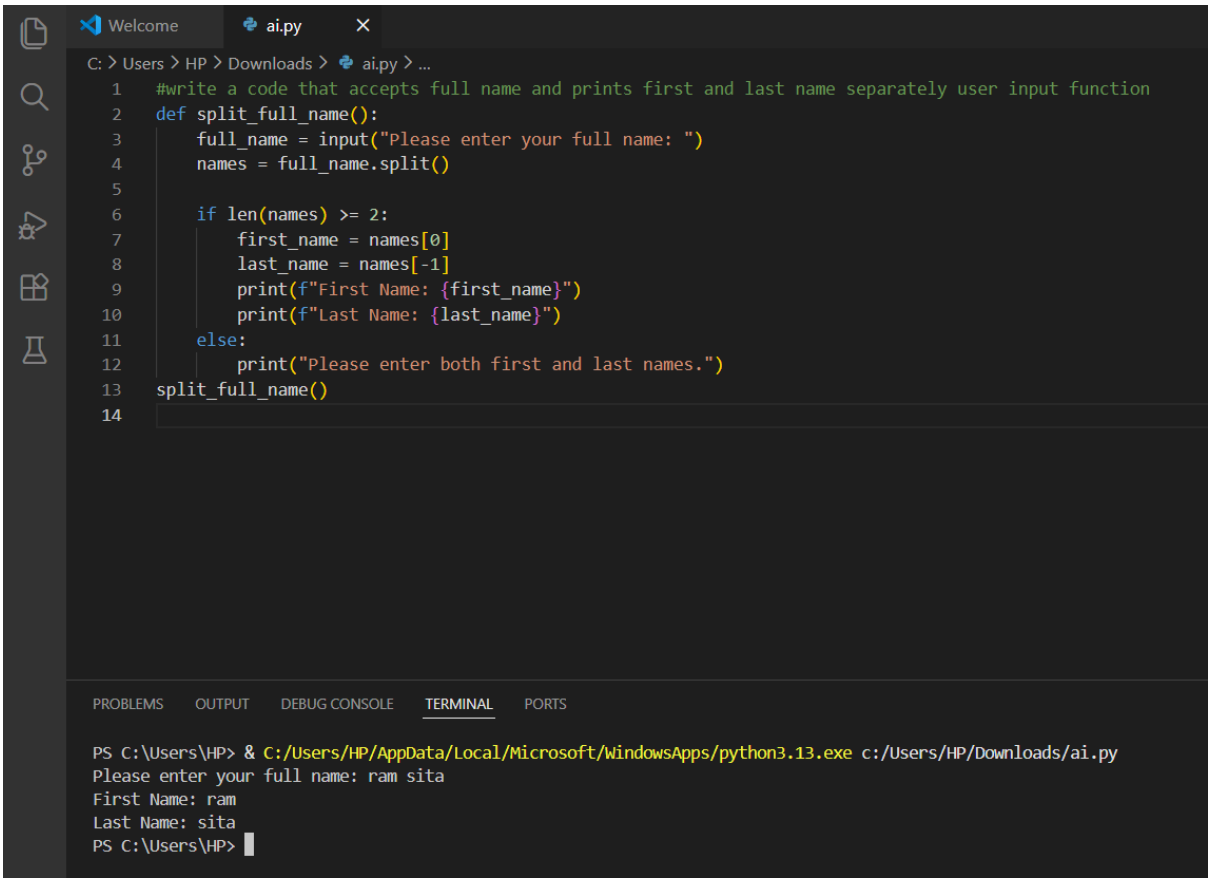
• *Formats it as “Last, First”*

Example formats:

• *"John Smith" → "Smith, John"*

• *"Anita Rao" → "Rao, Anita"*

Expected Output



- *Well-structured Python function*
- *Output strictly following example patterns*
- *Correct handling of names*
- *Sample inputs and outputs*

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

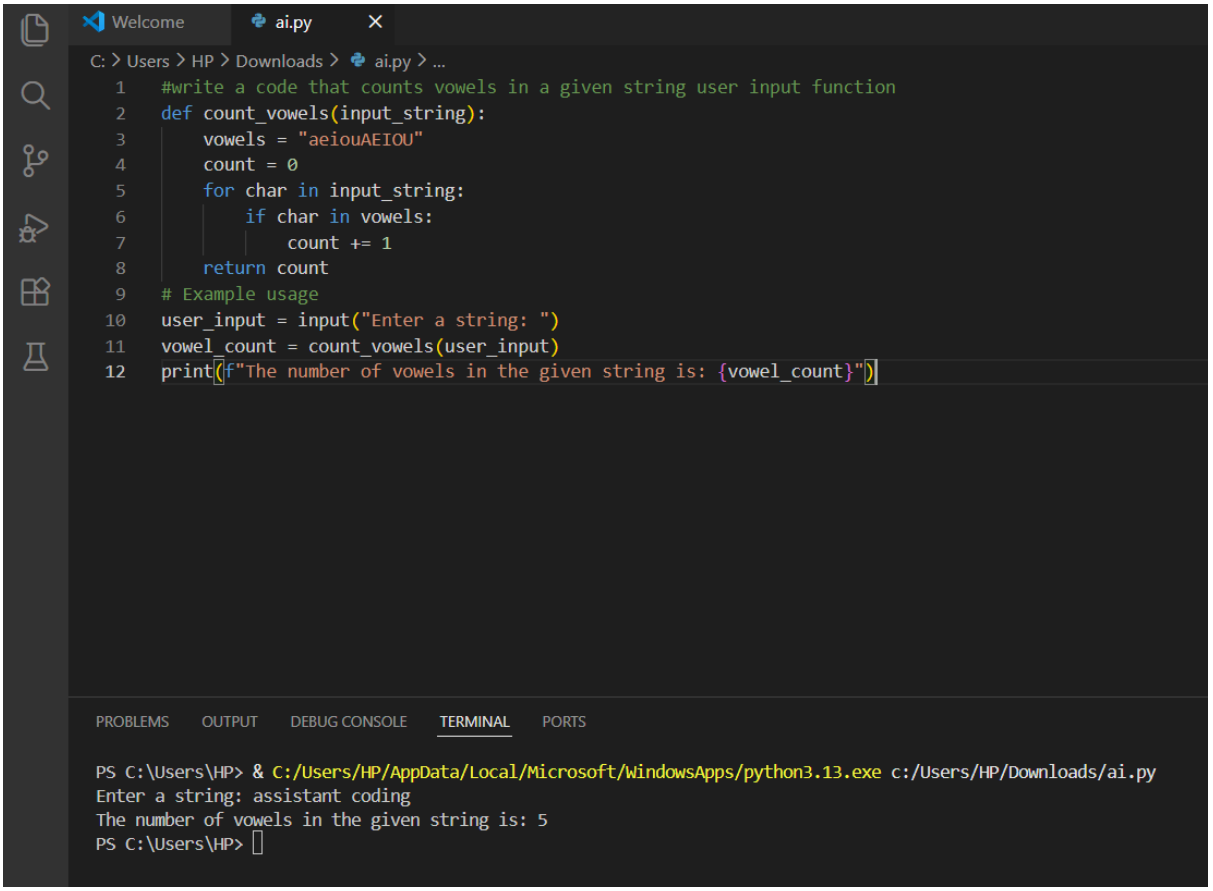
o Logical clarity

Expected Output

• Two vowel-counting functions

• Comparison table or short reflection paragraph

• Conclusion on prompt effectiveness



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*