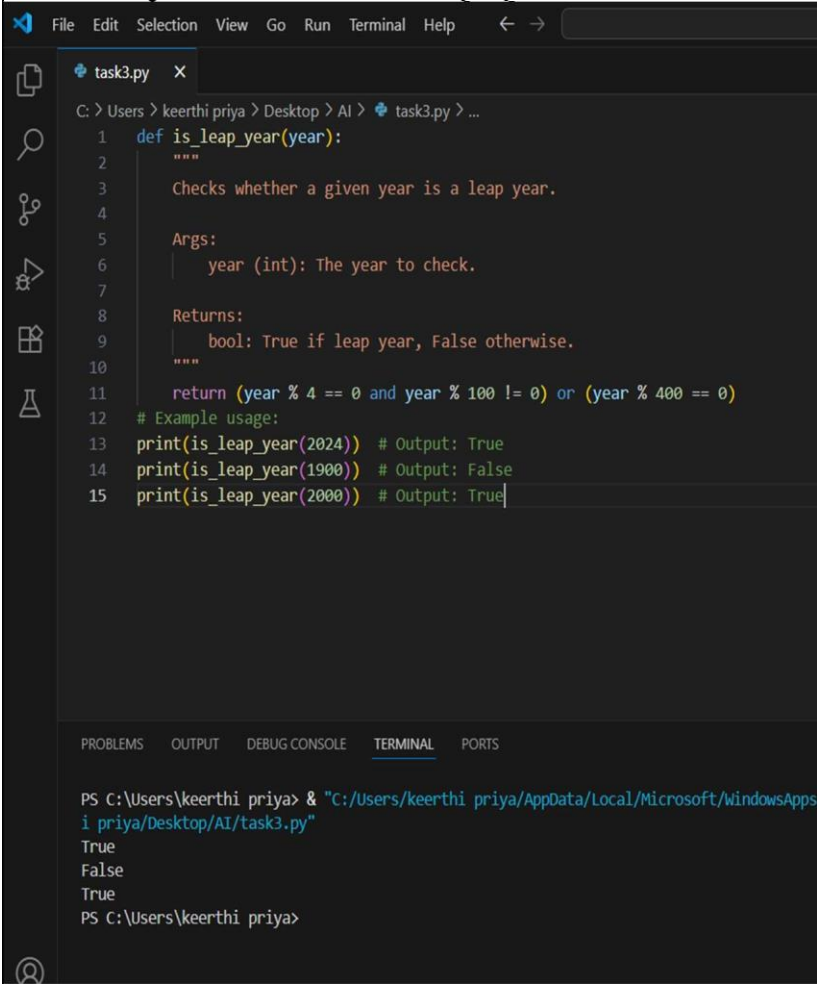# AI ASSISTED CODING

NAME : B.SRISHANTH
ROLL NO:2403A510G3
ASSIGNMENT:4.3

Task Description#1
- Zero-shot: Prompt AI to write a function that checks whether a given year is a leap year.

Expected Output#1
- AI-generated function with no examples provided


```python
def is_leap_year(year):
    """
    Checks whether a given year is a leap year.

    Args:
        year (int): The year to check.

    Returns:
        bool: True if leap year, False otherwise.
    """
    return (year % 4 == 0 and year % 100 != 0) or (year % 400 == 0)
# Example usage:
print(is_leap_year(2024))  # Output: True
print(is_leap_year(1900))  # Output: False
print(is_leap_year(2000))  # Output: True
```

```
PS C:\Users\keerthi priya> & "C:/Users/keerthi priya/AppData/Local/Microsoft/WindowsApps
i priya/Desktop/AI/task3.py"
True
False
True
PS C:\Users\keerthi priya>
```

Task Description#2
- One-shot: Give one input-output example to guide AI in writing a function that converts centimeters to inches.

Expected Output#2
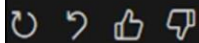- Function with correct conversion logic

writing a function that converts centimeters to inches. ONLY THIS CODE

task3.py

> Used 1 reference

```python
def cm_to_inches(cm):
    """
    Converts centimeters to inches.

    Args:
        cm (float): Length in centimeters.

    Returns:
        float: Length in inches.
    """
    return cm / 2.54
```

Task Description#3
- Few-shot: Provide 2–3 examples to generate a function that formats full names as "Last, First".

Expected Output#3
- Well-structured function respecting the examples

```python
def format_full_name(first_name, last_name):
    """
    Formats full names as 'Last, First'.

    Args:
        first_name (str): First name.
        last_name (str): Last name.

    Returns:
        str: Formatted name.
    """
    return f"{last_name}, {first_name}"
```

Task Description#4
- Compare zero-shot and few-shot prompts for writing a function that counts the number of vowels in a string.

Expected Output#4
- Functional output and comparative reflection

```python
def count_vowels(s):
    """
    Counts the number of vowels in a string.

    Args:
        s (str): Input string.

    Returns:
        int: Number of vowels in the string.
    """
    vowels = 'aeiouAEIOU'
    return sum(1 for char in s if char in vowels)
```

The prompt shown above: "writE a function that counts the number of vowels in a string." (task3.py), "Restore Checkpoint", "Used 1 reference"

Task Description#5
- Use few-shot prompting to generate a function that reads a .txt file and returns the number of lines.

Expected Output#5
- Working file-processing function with AI-guided logic

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 #5)	1.0
Comparison (Task#4)	0.5
Total	**2.5 Marks**