AI ASSISTED CODING

ASSIGNMENT 4.3

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Task 1 — Zero-shot: Leap Year

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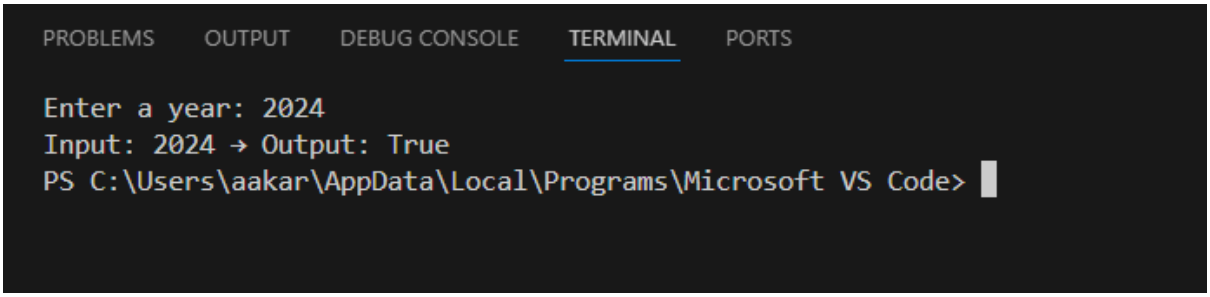
```python
def is_leap_year(year: int) -> bool:
    return (year % 4 == 0) and (year % 100 != 0 or year % 400 == 0)

# User input
year = int(input("Enter a year: "))
print(f"Input: {year} → Output: {is_leap_year(year)}")

```

Output :



Task 2 — One-shot: cm → inches

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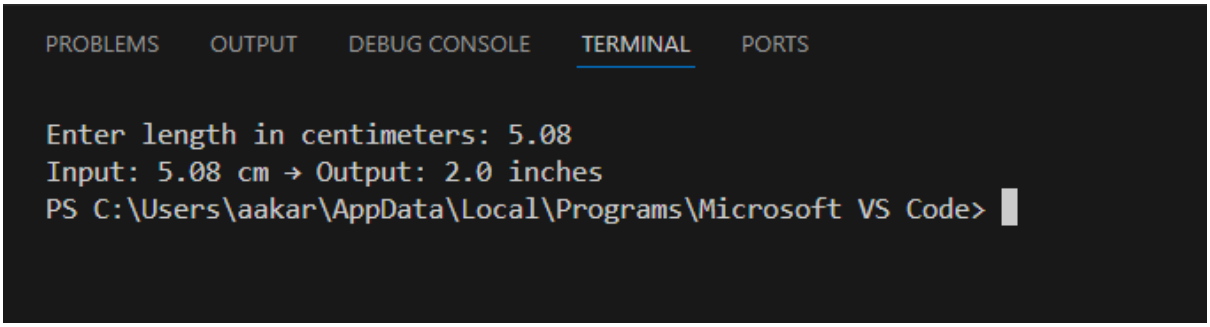
```python
def cm_to_inches(cm: float) -> float:
    return cm / 2.54

# User input
cm = float(input("Enter length in centimeters: "))
print(f"Input: {cm} cm → Output: {cm_to_inches(cm)} inches")

```

Output :



Task 3 — Few-shot: Format name

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```python
def format_name_last_first(full_name: str) -> str:
    parts = [p for p in full_name.strip().split() if p]
    if not parts:
        return ""
    if len(parts) == 1:
        return parts[0]
    last = parts[-1]
    first_block = " ".join(parts[:-1])
    return f"{last}, {first_block}"

# User input
name = input("Enter full name: ")
print(f"Input: {name} → Output: {format_name_last_first(name)}")

```

Output :

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS

```
Enter full name: John Doe
Input: John Doe → Output: Doe, John
PS C:\Users\aakar\AppData\Local\Programs\Microsoft VS Code>
```

Task 4 — Vowel Counter

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```python
def count_vowels(s: str, *, include_y: bool = False) -> int:
    vowels = set("aeiou" + ("y" if include_y else ""))
    return sum(ch.lower() in vowels for ch in s)

# User input
text = input("Enter a string: ")
print(f"Input: {text} → Output: {count_vowels(text)} vowels")

```

Output :

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS

```
Enter a string: qwertyuiop
Input: qwertyuiop → Output: 4 vowels
PS C:\Users\aakar\AppData\Local\Programs\Microsoft VS Code>
```

Task 5 — Few-shot: Count lines in file

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```python
from pathlib import Path

def count_lines_in_file(path: str | Path) -> int:
    p = Path(path)
    if not p.exists():
        raise FileNotFoundError(f"No such file: {p}")
    with p.open("r", encoding="utf-8", errors="replace") as f:
        return sum(1 for _ in f)

# User input
file_name = input("Enter file name: ")
print(f"Input: {file_name} → Output: {count_lines_in_file(file_name)} lines")

```

Output :

```
Enter file name: qwerty1
Traceback (most recent call last):
  File "c:\Users\aakar\OneDrive\Documents\Online gdb\task_1.py", line 12, in <module>
    print(f"Input: {file_name} → Output: {count_lines_in_file(file_name)} lines")
                                          ~~~~~~~~~~~~~~~~~~~~^^^^^^^^^^^^
  File "c:\Users\aakar\OneDrive\Documents\Online gdb\task_1.py", line 6, in count_lines_in_file
    raise FileNotFoundError(f"No such file: {p}")
FileNotFoundError: No such file: qwerty1
PS C:\Users\aakar\AppData\Local\Programs\Microsoft VS Code>
```