AI ASSISTED CODING

ASSIGNMENT 4.3

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Task 1 — Zero-shot: Leap Year

```
C: > Users > aakar > OneDrive > Documents > Online gdb >  task_1.py > ...
  1    def is_leap_year(year: int) -> bool:
  2        return (year % 4 == 0) and (year % 100 != 0 or year % 400 == 0)
  3
  4    # User input
  5    year = int(input("Enter a year: "))
  6    print(f"Input: {year} → Output: {is_leap_year(year)}")
  7
```

Output :

```
PROBLEMS    OUTPUT    DEBUG CONSOLE    TERMINAL    PORTS

Enter a year: 2024
Input: 2024 → Output: True
PS C:\Users\aakar\AppData\Local\Programs\Microsoft VS Code>
```

Task 2 — One-shot: cm → inches

```python
C: > Users > aakar > OneDrive > Documents > Online gdb > task_1.py > ...
1  def cm_to_inches(cm: float) -> float:
2      return cm / 2.54
3
4  # User input
5  cm = float(input("Enter length in centimeters: "))
6  print(f"Input: {cm} cm → Output: {cm_to_inches(cm)} inches")
7
```

Output :

```
PROBLEMS    OUTPUT    DEBUG CONSOLE    TERMINAL    PORTS

Enter length in centimeters: 5.08
Input: 5.08 cm → Output: 2.0 inches
PS C:\Users\aakar\AppData\Local\Programs\Microsoft VS Code>
```

Task 3 — Few-shot: Format name

```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

```python
C: > Users > aakar > OneDrive > Documents > Online gdb > 🐍 task_1.py > ...
1    def count_vowels(s: str, *, include_y: bool = False) -> int:
2        vowels = set("aeiou" + ("y" if include_y else ""))
3        return sum(ch.lower() in vowels for ch in s)
4
5    # User input
6    text = input("Enter a string: ")
7    print(f"Input: {text} → Output: {count_vowels(text)} vowels")
8
```

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

```python
C: > Users > aakar > OneDrive > Documents > Online gdb > task_1.py > ...
  1    from pathlib import Path
  2
  3    def count_lines_in_file(path: str | Path) -> int:
  4        p = Path(path)
  5        if not p.exists():
  6            raise FileNotFoundError(f"No such file: {p}")
  7        with p.open("r", encoding="utf-8", errors="replace") as f:
  8            return sum(1 for _ in f)
  9
 10    # User input
 11    file_name = input("Enter file name: ")
 12    print(f"Input: {file_name} → Output: {count_lines_in_file(file_name)} lines")
 13
```

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> 
```