AI Assisted Coding

Assignment 4.5

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Task-01:

Prompt:
write a python code for leap year checking. The function should be accepting a year form user, checks whether the given year is a leap year or not.

Code:

```
"""write a python code for leap year checking.the function should be accepting a year form user,checks whether the given year is a
year = int(input("Enter a year: "))
if (year % 4 == 0 and year % 100 != 0) or (year % 400 == 0):
    print(f"{year} is a leap year.")
else:
    print(f"{year} is not a leap year.")

print("\n" + "="*60)
print("COMPARISON TABLE")
print("="*60)
comparison = """

| Readability        | Verbose             | Concise, Pythonic   |
|--------------------|---------------------|---------------------|
| Large Inputs       | Slow, inefficient   | Fast, optimized     |
| Educational Value  | Great for learning  | Practical, modern   |
| When to Use        | Learning/Teaching   | Production code     |
|                    | Understanding       | Real-world apps     |
|                    | string mechanics    | Performance-critical|

"""
```

Output:

```
PS C:\Users\Vivek\OneDrive\Desktop\3-2\AI-Assisted-Coding> python -u "
Enter a year: 2004
2004 is a leap year.

============================================================
COMPARISON TABLE
============================================================

| Readability        | Verbose             | Concise, Pythonic   |
|--------------------|---------------------|---------------------|
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| Educational Value  | Great for learning  | Practical, modern   |
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|                    | Understanding       | Real-world apps     |
|                    | string mechanics    | Performance-critical|
```

Task02:

Prompt:

write a python code for converting centimetres to inches by using mathematical formula. Example when user gave input 10cm and output should be 3.93 inches

Code

```
# write a python code for converting centimeters to inches by usin
def cm_to_inches(cm):
    inches = cm / 2.54
    return inches
# Example usage
cm_value = float(input("Enter length in centimeters: "))
inches_value = cm_to_inches(cm_value)
print(f"{cm_value} cm is equal to {inches_value:.2f} inches.")
```

Output:

```
PS C:\Users\Vivek\OneDrive\Desktop\3-2\AI-Assisted-Coding> python -u "c:\Users\Vivek\OneDrive\Deskto
p\3-2\AI-Assisted-Coding\week4_3.py"
Enter length in centimeters: 11
11.0 cm is equal to 4.33 inches.
PS C:\Users\Vivek\OneDrive\Desktop\3-2\AI-Assisted-Coding>
```

```
p\3-2\AI-Assisted-Coding\week4_3.py"
Enter length in centimeters: 15
15.0 cm is equal to 5.91 inches.
```

Task_03

Prompt: write a python code for name formating function that accepts first name and last name from user and returns the full name as "Last Name, First Name" example input : first name = john , last name = smith output : smith, john example 2: first name = anitha , last name = Rao output : Rao, Anitha

Code:

```
# # write a python code for name formating function that accepts first
def format_name(first_name, last_name):
    return f"{last_name.capitalize()}, {first_name.capitalize()}"
# Example usage
first_name = input("Enter first name: ")
last_name = input("Enter last name: ")
formatted_name = format_name(first_name, last_name)
print(f"Formatted Name: {formatted_name}")
```

Output:

```
esktop\3-2\AI-Assisted-Coding\week4_3.py"
Enter first name: vivek
Enter last name: lakum
Formatted Name: Lakum , Vivek
PS C:\Users\Vivek\OneDrive\Desktop\3-2\AI-Assisted-Coding>
```

Task_04

Prompt: # Write a function in Python that takes a string as input and returns the number of vowels in the string. Consider both uppercase and lowercase vowels.

Code:

```python
def count_vowels(input_string):
    vowels = "aeiouAEIOU"
    count = sum(1 for char in input_string if char in vowels)
    return count
# Example usage
user_string = input("Enter a string: ")
vowel_count = count_vowels(user_string)
print(f"Number of vowels in the string: {vowel_count}")
```

Output:

```
Enter a string: python
Number of vowels in the string: 1
PS C:\Users\Vivek\OneDrive\Desktop\3-2
```

Few Shot:
Example 1:Input: "apple"Output: 2 Example 2:Input: "HELLO"Output: 2 Now write a Python function that takes a string as input and returns the number of vowels in it.Count both uppercase and lowercase vowels.

Code:

```python
# Example 1:Input: "apple"Output: 2 Example 2:Input: "HELLO"
def count_vowels(input_string):
    vowels = "aeiouAEIOU"
    count = sum(1 for char in input_string if char in vowels
    return count
# Example usage
user_string = input("Enter a string: ")
vowel_count = count_vowels(user_string)
print(f"Number of vowels in the string: {vowel_count}")
```

Output:

```
Enter a string: Laptop
Number of vowels in the string: 2
PS C:\Users\Vivek\OneDrive\Desktop\3-2\AI-Assisted-Coding>
```

Task_05:
Prompt: content (sample1.txt):
Hello
Welcome to Python
File handling example
Output:
Number of lines = 3
Example 2:
File content (sample2.txt):
This is line one
This is line two
Output:
Number of lines = 2
Now write a Python function that:
• Reads a .txt file
• Counts the total number of lines in the file
• Returns the line count"""

Code:

```
• Returns the line count"""
def count_lines_in_file(file_path):
    try:
        with open(file_path, 'r') as file:
            lines = file.readlines()
            line_count = len(lines)
            return line_count
    except FileNotFoundError:
        return "File not found. Please check the file path."
```

Output: