

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:

```
1 """write a python code for leap year checking.the function should be accepting a year form user,checks whether the given year is a
2 year = int(input("Enter a year: "))
3 if (year % 4 == 0 and year % 100 != 0) or (year % 400 == 0):
4     print(f"{year} is a leap year.")
5 else:
6     print(f"{year} is not a leap year.")
7
8 print("\n" + "="*60)
9 print("COMPARISON TABLE")
10 print("="*60)
11 comparison = """
12
13 | Readability | Verbose | Concise, Pythonic |
14 | Large Inputs | Slow, inefficient | Fast, optimized |
15 | Educational Value | Great for learning | Practical, modern |
16 | When to Use | Learning/Teaching | Production code |
17 | | Understanding | Real-world apps |
18 | | string mechanics | Performance-critical |
19
20
21
22
23
```

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 |
| 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 |
```

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 using
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\Desktop\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.
PS C:\Users\Vivek\OneDrive\Desktop\3-2\AI-Assisted-Coding>
```

Task_03

Prompt: write a python code for name forming 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 forming 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:

```

✓ 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:

```

# 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: