AI Assisted Coding

Assignment:04

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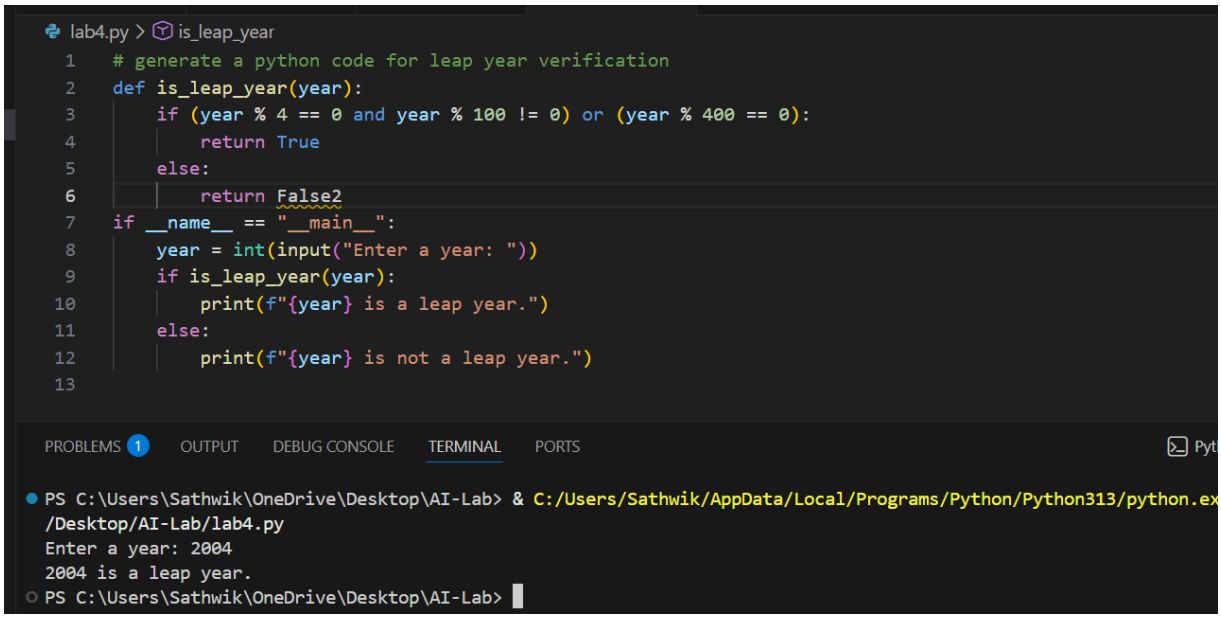
Task 1: Zero-Shot Prompting – Leap Year Check

Scenario

Zero-shot prompting involves giving instructions without providing examples.

Code:

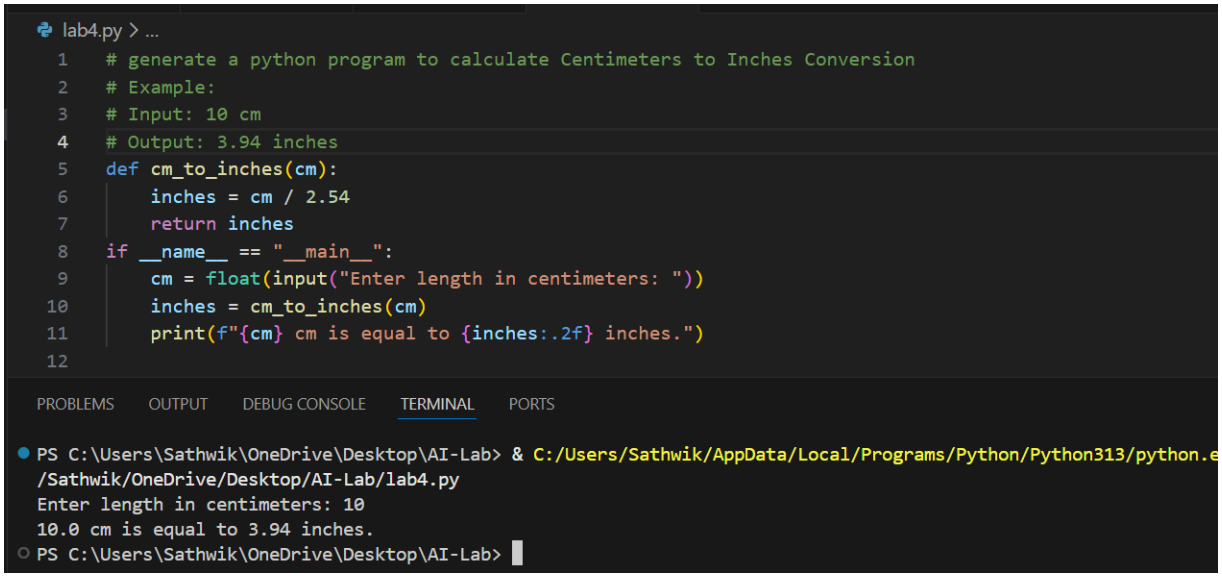


Task 2: One-Shot Prompting – Centimeters to Inches Conversion

Scenario

One-shot prompting guides AI using a single example.

Code:



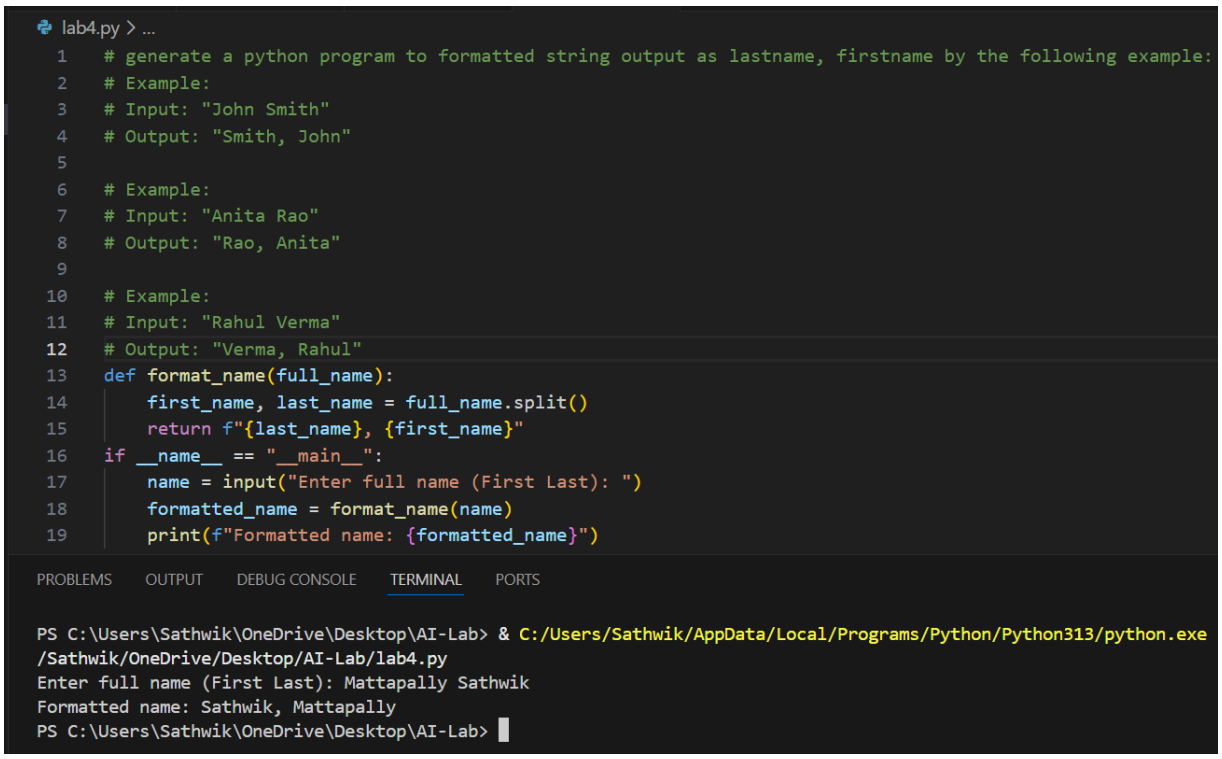
```
lab4.py > ...
1   # generate a python program to calculate Centimeters to Inches Conversion
2   # Example:
3   # Input: 10 cm
4   # Output: 3.94 inches
5   def cm_to_inches(cm):
6       inches = cm / 2.54
7       return inches
8   if __name__ == "__main__":
9       cm = float(input("Enter length in centimeters: "))
10      inches = cm_to_inches(cm)
11      print(f"{cm} cm is equal to {inches:.2f} inches.")
12

PROBLEMS  OUTPUT  DEBUG CONSOLE  TERMINAL  PORTS

PS C:\Users\Sathwik\OneDrive\Desktop\AI-Lab> & C:/Users/Sathwik/AppData/Local/Programs/Python/Python313/python.e
/Sathwik/OneDrive/Desktop/AI-Lab/lab4.py
Enter length in centimeters: 10
10.0 cm is equal to 3.94 inches.
PS C:\Users\Sathwik\OneDrive\Desktop\AI-Lab>
```

Task 3: Few-Shot Prompting – Name Formatting

Scenario

Few-shot prompting improves accuracy by providing multiple examples.

Code:



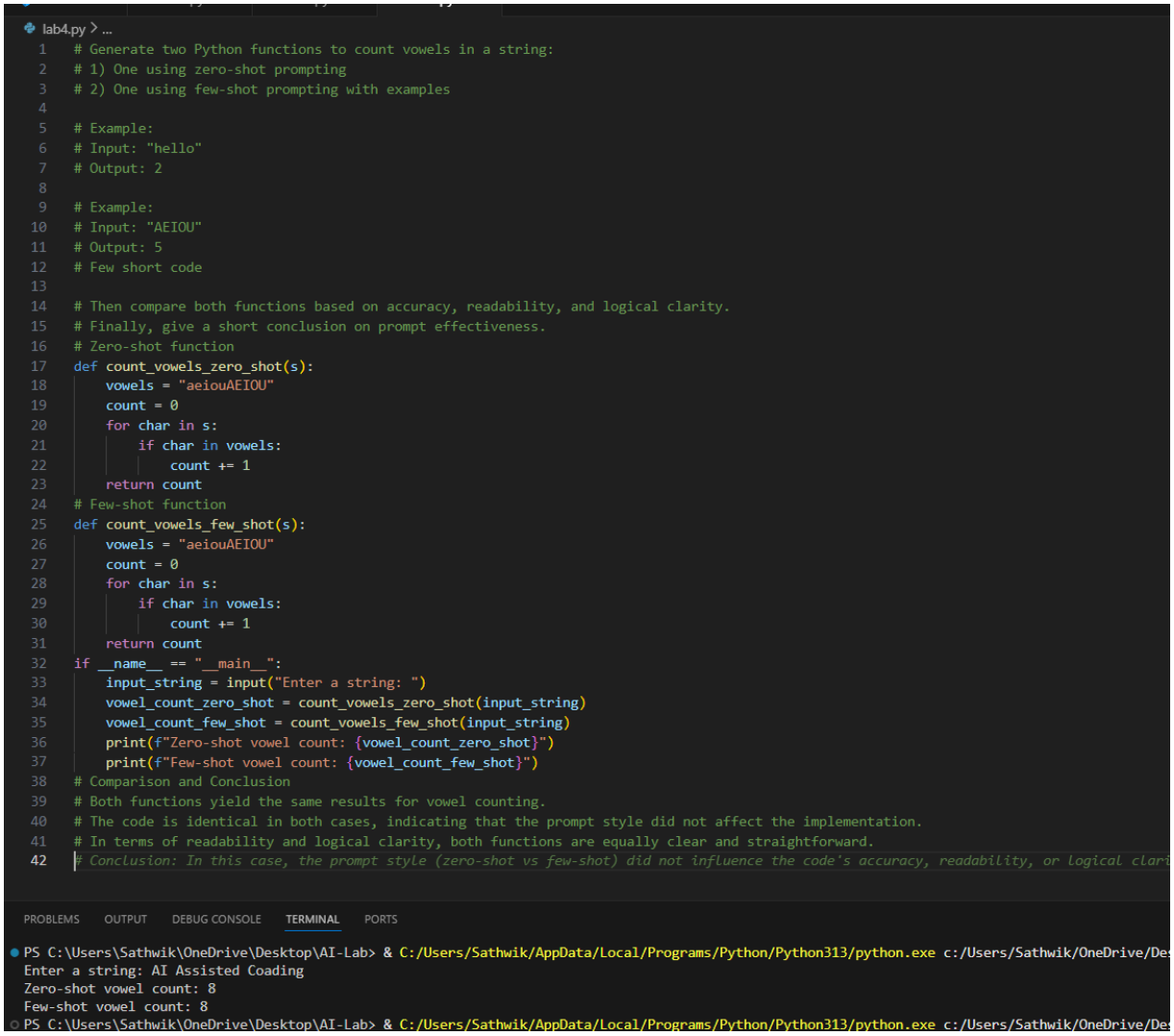
```
lab4.py > ...
1   # generate a python program to formatted string output as lastname, firstname by the following example:
2   # Example:
3   # Input: "John Smith"
4   # Output: "Smith, John"
5
6   # Example:
7   # Input: "Anita Rao"
8   # Output: "Rao, Anita"
9
10  # Example:
11  # Input: "Rahul Verma"
12  # Output: "Verma, Rahul"
13  def format_name(full_name):
14      first_name, last_name = full_name.split()
15      return f"{last_name}, {first_name}"
16  if __name__ == "__main__":
17      name = input("Enter full name (First Last): ")
18      formatted_name = format_name(name)
19      print(f"Formatted name: {formatted_name}")

PROBLEMS  OUTPUT  DEBUG CONSOLE  TERMINAL  PORTS

PS C:\Users\Sathwik\OneDrive\Desktop\AI-Lab> & C:/Users/Sathwik/AppData/Local/Programs/Python/Python313/python.exe
/Sathwik/OneDrive/Desktop/AI-Lab/lab4.py
Enter full name (First Last): Mattapally Sathwik
Formatted name: Sathwik, Mattapally
PS C:\Users\Sathwik\OneDrive\Desktop\AI-Lab>
```

Task 4: Comparative Analysis – Zero-Shot vs Few-Shot

Scenario

Different prompt strategies may produce different code quality.

Code:



```
lab4.py > ...
# Generate two Python functions to count vowels in a string:
# 1) One using zero-shot prompting
# 2) One using few-shot prompting with examples

# Example:
# Input: "hello"
# Output: 2

# Example:
# Input: "AEIOU"
# Output: 5
# Few short code

# Then compare both functions based on accuracy, readability, and logical clarity.
# Finally, give a short conclusion on prompt effectiveness.
# Zero-shot function
def count_vowels_zero_shot(s):
    vowels = "aeiouAEIOU"
    count = 0
    for char in s:
        if char in vowels:
            count += 1
    return count
# Few-shot function
def count_vowels_few_shot(s):
    vowels = "aeiouAEIOU"
    count = 0
    for char in s:
        if char in vowels:
            count += 1
    return count
if __name__ == "__main__":
    input_string = input("Enter a string: ")
    vowel_count_zero_shot = count_vowels_zero_shot(input_string)
    vowel_count_few_shot = count_vowels_few_shot(input_string)
    print(f"Zero-shot vowel count: {vowel_count_zero_shot}")
    print(f"Few-shot vowel count: {vowel_count_few_shot}")
# Comparison and Conclusion
# Both functions yield the same results for vowel counting.
# The code is identical in both cases, indicating that the prompt style did not affect the implementation.
# In terms of readability and logical clarity, both functions are equally clear and straightforward.
# Conclusion: In this case, the prompt style (zero-shot vs few-shot) did not influence the code's accuracy, readability, or logical clari

PROBLEMS  OUTPUT  DEBUG CONSOLE  TERMINAL  PORTS

PS C:\Users\Sathwik\OneDrive\Desktop\AI-Lab> & C:/Users/Sathwik/AppData/Local/Programs/Python/Python313/python.exe c:/Users/Sathwik/OneDrive/Des
Enter a string: AI Assisted Coading
Zero-shot vowel count: 8
Few-shot vowel count: 8
PS C:\Users\Sathwik\OneDrive\Desktop\AI-Lab> & C:/Users/Sathwik/AppData/Local/Programs/Python/Python313/python.exe c:/Users/Sathwik/OneDrive/Des
```