

AI Assisted Coding

P.Manikanta || 2303A51271 || Batch:- 8

Task 1: Zero-Shot Prompting – Leap Year Check

Scenario

Zero-shot prompting involves giving instructions without providing examples. **Code:**

```
lab 4.3.py > ...
1 def is_leap_year(year):
2     if (year % 4 == 0 and year % 100 != 0) or (year % 400 == 0):
3         return True
4     else:
5         return False
6
7
8 if __name__ == "__main__":
9     year = int(input("Enter a year: "))
10
11     if is_leap_year(year):
12         print(f"{year} is a leap year.")
13     else:
14         print(f"{year} is not a leap year.")
15
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS

```
● PS C:\Users\porika manikanta\OneDrive\Desktop\ai assistant> & "C:/Program Files/Python311/python.exe"
  "c:/Users/porika manikanta/OneDrive/Desktop/ai assistant/lab 4.3.py"
Enter a year: 2026
2026 is not a leap year.
○ PS C:\Users\porika manikanta\OneDrive\Desktop\ai assistant> |
```

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

Scenario

One-shot prompting guides AI using a single example.

Code:

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

```

PROBLEMS    OUTPUT    DEBUG CONSOLE    TERMINAL    PORTS

C:\Users\porika manikanta\OneDrive\Desktop\ai assistant> & "C:/Program Files
C:/Users/porika manikanta/OneDrive/Desktop/ai assistant/lab 4.3.py"
Enter length in centimeters: Traceback (most recent call last):
File "c:\Users\porika manikanta\OneDrive\Desktop\ai assistant\lab 4.3.py",
  cm = float(input("Enter length in centimeters: "))
          ^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^
KeyboardInterrupt
C:\Users\porika manikanta\OneDrive\Desktop\ai assistant> & "C:/Program Files
C:/Users/porika manikanta/OneDrive/Desktop/ai assistant/lab 4.3.py"
Enter length in centimeters: 10
10.0 cm is equal to 3.94 inches.
C:\Users\porika manikanta\OneDrive\Desktop\ai assistant>

```

Task 3: Few-Shot Prompting – Name Formatting

Scenario

Few-shot prompting improves accuracy by providing multiple examples. **Code:**

```
31
32 # Generate a python program to format string output as "lastname, firstname"
33
34 # Example:
35 # Input: "John Smith"
36 # Output: "Smith, John"
37
38 def format_name(full_name):
39     first_name, last_name = full_name.split()
40     return f"{last_name}, {first_name}"
41
42
43 if __name__ == "__main__":
44     name = input("Enter full name (First Last): ")
45     formatted_name = format_name(name)
46     print(f"Formatted name: {formatted_name}")
47
48
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS

```
PS C:\Users\porika manikanta\OneDrive\Desktop\ai assistant> & "C:/Program Files/Python311/python.exe" "c:/Users/porika manikanta/OneDrive/Desktop/ai assistant/lab 4.3.py"
^^^^^^^^^^^^^^^^^^^^
File "c:\Users\porika manikanta\OneDrive\Desktop\ai assistant\lab 4.3.py", line 39, in format
    first_name, last_name = full_name.split()
    ^^^^^^^^^^^^^^^^^^^^^
ValueError: not enough values to unpack (expected 2, got 1)
● PS C:\Users\porika manikanta\OneDrive\Desktop\ai assistant> & "C:/Program Files/Python311/python.exe" "c:/Users/porika manikanta/OneDrive/Desktop/ai assistant/lab 4.3.py"
Enter full name (First Last): porika manikanta
Formatted name: manikanta, porika
○ PS C:\Users\porika manikanta\OneDrive\Desktop\ai assistant> |
```

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

Scenario

Different prompt strategies may produce different code quality.

Code:

```

8 # 1) One using zero-shot prompting
9 # 2) One using few-shot prompting with examples
0
1 # Example:
2 # Input: "hello"
3 # Output: 2
4
5 # Example:
6 # Input: "AEIOU"
7 # Output: 5
8
9
0 # Zero-shot function
1 def count_vowels_zero_shot(s):
2     vowels = "aeiouAEIOU"
3     count = 0
4     for ch in s:
5         if ch in vowels:
6             count += 1
7     return count
8
9
0 # Few-shot function
1 def count_vowels_few_shot(s):
2     vowels = "aeiouAEIOU"
3     count = 0
4     for ch in s:
5         if ch in vowels:
6             count += 1
7     return count
8
9
0 if __name__ == "__main__":
1     input_string = input("Enter a string: ")
2
3     vowel_count_zero_shot = count_vowels_zero_shot(input_string)

```

lab 4.3.py > count_vowels_few_shot

```
61 def count_vowels_zero_shot(s):
62     return count
63
64
65 # Few-shot function
66 def count_vowels_few_shot(s):
67     vowels = "aeiouAEIOU"
68     count = 0
69     for ch in s:
70         if ch in vowels:
71             count += 1
72     return count
73
74
75 if __name__ == "__main__":
76     input_string = input("Enter a string: ")
77
78     vowel_count_zero_shot = count_vowels_zero_shot(input_string)
79     vowel_count_few_shot = count_vowels_few_shot(input_string)
80
81     print(f"Zero-shot vowel count: {vowel_count_zero_shot}")
82     print(f"Few-shot vowel count: {vowel_count_few_shot}")
83
84
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS

```
"c:/Users/porika manikanta/OneDrive/Desktop/ai assistant/lab 4.3.py"
Enter a string: AI Assisted coding
Zero-shot vowel count: 7
"c:/Users/porika manikanta/OneDrive/Desktop/ai assistant/lab 4.3.py"
Enter a string: AI Assisted coding
Zero-shot vowel count: 7
Zero-shot vowel count: 7
Few-shot vowel count: 7
PS C:\Users\porika manikanta\OneDrive\Desktop\ai assistant>

Few-shot vowel count: 7
```