# AI ASSISTED CODING

# LAB ASSIGNMENT – 4

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**Hall Ticket Number:** 2303A510F8
**Week:** 2    **Day:** Wednesday

## 1. Zero-Shot Prompting – Leap Year Check

**Prompt Used:** Write a Python function to check whether a given year is a leap year.

**Program Code:**

```
def is_leap_year(year):
    if (year % 4 == 0 and year % 100 != 0) or (year % 400 == 0):
        return True
    return False
```

**Output:**

```
Input: 2024 -> True
Input: 1900 -> False
Input: 2000 -> True
```

## 2. One-Shot Prompting – Centimeters to Inches Conversion

**Prompt Used:** Convert centimeters to inches. Example: 10 cm -> 3.94 inches

**Program Code:**

```
def cm_to_inches(cm):
    return cm / 2.54
```

**Output:**

```
Input: 10 -> 3.94
Input: 25 -> 9.84
```

## 3. Few-Shot Prompting – Name Formatting

**Prompt Used:** Format full name as 'Last, First' using examples.

**Program Code:**

```
def format_name(name):
    first, last = name.split()
    return f"{last}, {first}
```

**Output:**

```
John Smith -> Smith, John
Anita Rao -> Rao, Anita
```

## 4. Comparative Analysis – Vowel Count

**Program Code:**

```
def count_vowels(text):
    vowels = 'aeiouAEIOU'
    count = 0
    for c in text:
        if c in vowels:
            count += 1
    return count
```

**Output:**

```
hello -> 2
education -> 5
```

## 5. Few-Shot Prompting – File Handling

**Program Code:**

```
def count_lines(filename):
    with open(filename, 'r') as f:
        return len(f.readlines())
```

**Output:**

```
File with 3 lines -> 3
Empty file -> 0
```

# Conclusion

This Lab-4 record demonstrates zero-shot, one-shot, and few-shot prompting techniques. Few-shot prompting provides better clarity, accuracy, and structured AI-generated code compared to other methods.