2403A52L11 – B50

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AI-AC(ass_3.5)

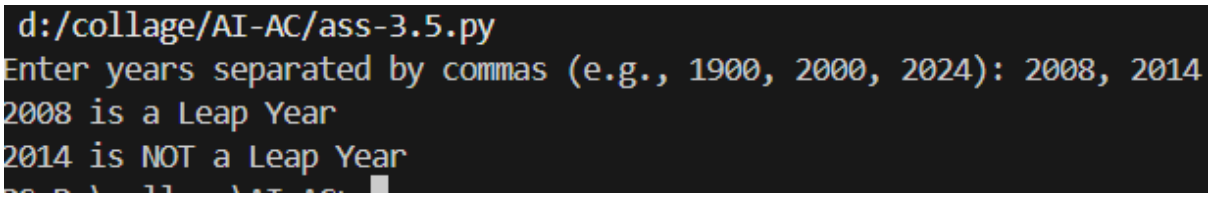
## Question 1: Zero-Shot Prompting (Leap Year Check)

```
data = input("Enter years separated by commas (e.g., 1900, 2000, 2024): ")


years = [int(year.strip()) for year in data.split(",")]


for year in years:
    # Leap year check
    is_leap = False
    if (year % 400 == 0) or (year % 4 == 0 and year % 100 != 0):
        is_leap = True
    print(year, "is a Leap Year" if is_leap else "is NOT a Leap Year")
```

output:




## Question 2: One-Shot Prompting (GCD of Two Numbers)

```
def gcd(a, b):
    while b != 0:
        a, b = b, a % b
    return a
# Take input from terminal
a = int(input("Enter first number: "))
b = int(input("Enter second number: "))
print(f"GCD of {a} and {b} is {gcd(a, b)}")
```

output:

```
d:/collage/AI-AC/ass-3.5.py
Enter first number: 6
Enter second number: 4
GCD of 6 and 4 is 2
PS D:\collage\AI-AC>
```

## Question 3: Few-Shot Prompting (LCM Calculation)

```
def lcm(a, b):
    if a == 0 or b == 0:
        return 0
    return abs(a * b) // gcd(a, b)
def gcd(a, b):
    while b != 0:
        a, b = b, a % b
    return a
a = int(input("Enter first number: "))
b = int(input("Enter second number: "))
print(f"LCM of {a} and {b} is {lcm(a, b)}")
```

output:

```
d:/collage/AI-AC/ass-3.5.py
Enter first number: 2
Enter second number: 8
LCM of 2 and 8 is 8
PS D:\collage\AI-AC>
```

## Question 4: Zero-Shot Prompting (Binary to Decimal Conversion)

```
def binary_to_decimal(binary_str):
    return int(binary_str, 2)
binary = input("Enter binary number: ")
print(f"Decimal equivalent: {binary_to_decimal(binary)}")
```

output:

```
d:/collage/AI-AC/ass-3.5.py
Enter binary number: 10101
Decimal equivalent: 21
PS D:\collage\AI-AC>
```

## Question 5: One-Shot Prompting (Decimal to Binary Conversion)

```
def decimal_to_binary(decimal):
    return bin(decimal)[2:]
print(decimal_to_binary(10))  # Output: 1010
decimal = int(input("Enter decimal number: "))
print(f"Binary representation: {decimal_to_binary(decimal)}")
```

output:

```
 d:/collage/AI-AC/ass-3.5.py
1010
Enter decimal number: 6
Binary representation: 110
PS D:\collage\AI-AC>
```

## #Question 6: Few-Shot Prompting (Harshad Number Check)

```
def is_harshad(num):
    if num <= 0:
        return False
    digit_sum = sum(int(d) for d in str(num))
    return num % digit_sum == 0
num = int(input("Enter a number: "))
print(f"{num} is {'a Harshad Number' if is_harshad(num) else 'Not a Harshad Number'}")
```

Output:

```
PS D:\collage\AI-AC> & "C:\Use
 d:/collage/AI-AC/ass-3.5.py
Enter a number: 85
85 is Not a Harshad Number
PS D:\collage\AI-AC> & "C:\Use
 d:/collage/AI-AC/ass-3.5.py
Enter a number: 18
18 is a Harshad Number
PS D:\collage\AI-AC>
```