**Unit I - Challenges 1 and 2**

**1. Implement the recursive function to calculate the factorial of a given number**

def factorial(n):

if n == 0:

return 1

else:

return n \* factorial(n - 1)

# Example usage

num = 5

result = factorial(num)

print(f"The factorial of {num} is {result}")

**2. Write the program that determines the whether a year enter by the user is a leap year or not using if elif else statements**

# Get input from user

year = int(input("Enter a year: "))

# Check if it's a leap year

if (year % 4 == 0 and year % 100 != 0) or (year % 400 == 0):

print(f"{year} is a leap year.")

else:

print(f"{year} is not a leap year.")