# **ASSIGNMENT-10**

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COURSE : AI ASSISTED CODING

# TASK-1:

# Code:

```
def calcFact(n):
    result = 1
    for i in range(1, n):
        result = result * i
    return result
def main():
    num = 5
    FACT = calcFact(num)
    print("the factorial of", num, "is", FACT)
    t = 10
    if FACT > 10:
        print("BIG Number")
        print("small number")
main()
the factorial of 5 is 24
BIG Number
```

#### PROMPT FOR AI:

P Below is a Python program to calculate the factorial of a number and print a message based on the value of another number. review this code and do the following: Identify and correct basic errors in the code (e.g., logical, indentation, or unnecessary variables).def calcFact(n): result = 1 x = 0 for i in range(1, n): result = result \* i return result def main(): num = 5 FACT = calcFact(num) print("the factorial of", num, "is", FACT) t = 10 if FACT > 10: print("BIG Number") else: print("small number") main() Suggest improvements for code readability and PEP8 formatting. Add inline comments explaining what each part of the code does. Explain why any changes were made.

#### **CODE AFTER CORRECTION:**

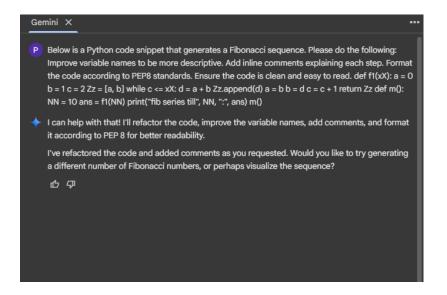
```
det calculate_tactorlal(number):
    The factorial of the number.
    result = 1
    for i in range(1, number + 1):
        # Multiply the result by the current number in the loop
result *= i # Equivalent to result = result * i
    return result
    Main function to demonstrate calculating factorial and printing a message.
    # Define the number for factorial calculation
    # Calculate the factorial of the number
    factorial_result = calculate_factorial(num)
    print(f"The factorial of {num} is {factorial_result}") # Using f-string for better readability
    # Define a threshold for comparison
    threshold = 10
    # Check if the factorial result is greater than the threshold
    if factorial_result > threshold:
        print("BIG Number")
        print("small number")
# Execute the main function
    main()
The factorial of 5 is 120
```

# TASK-2:

# **CODE:**

```
def f1(xX):
    a = 0
    b = 1
    Zz = [a, b]
    while c <= xX:
        d = a + b
        Zz.append(d)
        a = b
        b = d
        c = c + 1
    return Zz
def m():
    NN = 10
    ans = f1(NN)
    print("fib series till", NN, ":", ans)
m()
fib series till 10: [0, 1, 1, 2, 3, 5, 8, 13, 21, 34, 55]
```

#### **PROMPT:**



#### CODE:

```
def generate_fibonacci_sequence(limit):
       limit: The maximum number of elements in the sequence.
   second_number = 1
   fibonacci_sequence = [first_number, second_number]
       next_number = first_number + second_number
       fibonacci_sequence.append(next_number)
       first_number = second_number
       second_number = next_number
       count += 1
   return fibonacci_sequence
     def main():
         Main function to demonstrate generating and printing the Fibonacci sequence.
         sequence limit = 10
         fibonacci_series = generate_fibonacci_sequence(sequence_limit)
         # Print the generated sequence
         print("Fibonacci series up to", sequence_limit, ":", fibonacci_series)
     if __name__ == "__main__":
         main()
₹ Fibonacci series up to 10 : [0, 1, 1, 2, 3, 5, 8, 13, 21, 34]
```

# **TASK-3:**

# **PROMPT:**

Write a python script with 3-4 functions

#### **CODE:**

```
def greet(name):
      print(f"Hello, {name}!")
    def add_numbers(a, b):
      return a + b
    def multiply_numbers(x, y):
    def is_even(number):
      return number % 2 == 0
    greet("Colab user")
    sum_result = add_numbers(5, 3)
    print(f"Sum: {sum_result}")
    product_result = multiply_numbers(4, 6)
    print(f"Product: {product_result}")
    print(f"Is 7 even? {is_even(7)}")
    print(f"Is 10 even? {is_even(10)}")
→ Hello, Colab user!
    Sum: 8
    Product: 24
    Is 7 even? False
    Is 10 even? True
```