Assignment-1:

Pseudocode Development - Task: Write a detailed pseudocode for a simple program that takes a number as input, calculates the square if it's even or the cube if it's odd, and then outputs the result. Incorporate conditional and looping constructs

Start

Read number

Accept number

Check if the number is even or odd:

If number % 2 equals 0 // number is even

Calculate the square of number and store it in a variable result

Else // number is odd

Calculate the cube of number and store it in a variable result

Print the result

End

**Assignment 3:**

Function Design and Modularization - Create a document that describes the design of two modular functions: one that returns the factorial of a number, and another that calculates the nth Fibonacci number. Include pseudocode and a brief explanation of how modularity in programming helps with code reuse and organization.

Factorial Function:

function factorial(n):

if(n==0)

return 1

else

return n\* factorial(n-1)

start

read n

accept n

result=call factorial(n)

print result

end

Fibonacci Function:

function fib(n)

if(n<=1)

return n

else

return fib(n-1) + fib(n-2)

start

read n

accept n

result=call fib(n)

print result

end

\*\*\*Modularity is the process of breaking down a program into several parts which helps in reuse of different parts of the program whenever needed to achieve easier understanding of the program, scalability, etc.. like we used factorial and fib functions again in the above programs.