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 factorial(n)

{

INT result = 1

If (n == 0 || n == 1) return n;

else

for ( int i = 1 ; i < n ; i++ )

result = result \* i;

return result

}

FIBONACCI

function Fibonacci(n)

{

if n <= 1:

return n

else:

next;

previous = 0

current = 1

for i from 2 to n:

next = previous + current

previous = current

current = next

return current

}

Modularity in programming refers to the practice of dividing a program into separate modules (or functions) that performs specific functionalities.

Code Reuse: Modular functions can be reused in different parts of a program or even in different programs altogether.

Organization: Modular programming enhances code organization by breaking down complex tasks into smaller, manageable parts