

Algorithms and Data Structures

Pseudo code: Factorial

Write a pseudocode to calculate the Factorial of a given positive integer n. Your pseudocode should include:

- Input validation to ensure the number is a non-negative integer.
- Handling of edge cases such as $n=0$ and $n=1$.
- A clear explanation of the logic used to compute the factorial, either through iteration or recursion.
- Output the result in a user-friendly format, e.g., 'The factorial of n is: result.'

Answer//

```
..
START
    INPUT number
    IF number < 0
        PRINT "Invalid input. Please enter a non negative integer"

    ELSE IF number = 0 OR number = 1 THEN
        SET Factorial TO 1
        PRINT "The Factorial of: " + number + " is " + Factorial

    ELSE
        SET Factorial TO 1
        FOR i FROM 2 TO n
            SET Factorial TO Factorial * i
        END FOR
        PRINT "The factorial of the number is: " + Factorial

    END IF
END
```