

This C++ code calculates the factorial of a non-negative integer using both iterative and recursive methods. The `factorialIterative` function uses a `for` loop to multiply the result by each integer from 1 to `n`, accumulating the product. This approach is straightforward and avoids the potential pitfalls of recursion, such as stack overflow for large values of `n`. On the other hand, the `factorialRecursive` function demonstrates a classic recursive approach, where the function calls itself with the decremented value of `n` until it reaches the base case of `n <= 1`. The `main` function prompts the user to enter a non-negative integer, checks for valid input, and then calculates the factorial using both methods, displaying the results. The program also handles the case where a negative number is input by displaying an error message and exiting. This dual-method approach allows the user to compare the iterative and recursive implementations directly.