In-Class Exercise: The Factorial Function

The factorial function *n*! is mathematically defined for any positive integer *n* as:

$$n! \equiv 1 \cdot 2 \cdot 3 \cdot \ \cdots \ \cdot (n-2) \cdot (n-1) \cdot n$$

So that:

$$6! \equiv 1 \cdot 2 \cdot 3 \cdot 4 \cdot 5 \cdot 6 = 720$$

Note that 0! is defined to be one. It is a relatively simple matter to program the factorial function with the iterated loop structure. Create a VI with front panel similar to that shown below, which prompts the user to input a positive integer, and computes the factorial. **Configure the numeric control such that the user has no choice but to enter a positive integer, including zero.**

Hints:

- You will need to use a shift register to keep a running product of values.
- Be careful how you initialize the shift register (do NOT use 0).
- Note that the loop count runs from 0 to N-1. This is not what you need for the factorial; you need to count from 1 to N.