

1. What data type in the C programming language allows for the largest values of factorial to be computed?

unsigned long long int

2. At what input value for the recursive factorial function does your computer start to 'crash' or really slow down when you try to compute a factorial? Is it the same value as the iterative function? Experiment and report your result.

The recursive factorial function starts to crash when the input value exceeds 175000. But the iterative factorial function starts to slow down when the input value exceeds 1000000000. So the iterative function was able to handle larger inputs before encountering issues.

3. In 2-3 sentences, describe why you believe you saw or didn't see differences between the iterative and recursive versions of factorial.

The differences between the iterative and recursive versions of factorial are due to the way they handle function calls and memory allocation. Recursive functions have the overhead of function calls and the use of the call stack, which can cause issues with memory usage and performance for large inputs. In contrast, iterative functions use a loop structure and generally have better performance and memory usage for larger inputs.