

CS5008 Module 8 Lab recursion

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

It is the long long int type, which allows up to $-(2^{63})$ to $(2^{63})-1$. Long long int is a 64 bit data type.

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

I start the computing from 10, but it becomes slow when it reaches 12 and the integer overflow for factorial of 13 since the up limit for int is 2,147,483,647. If I change the data type to long long int, the problem solved. But the result still overflow for input of 21.