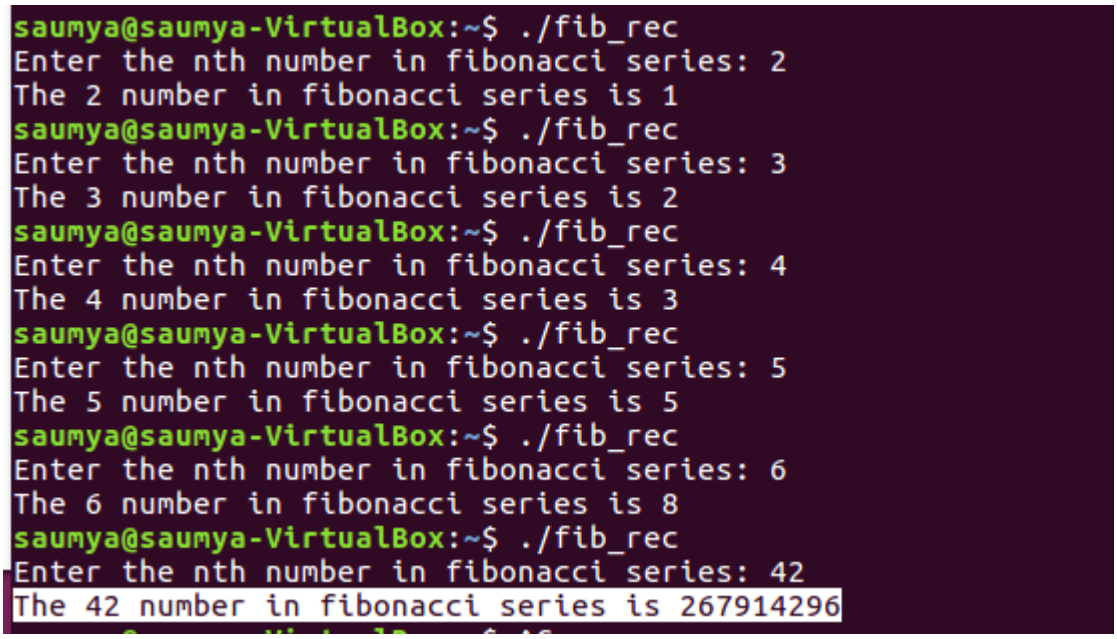
The C function for fibonacci series using recursive calls has been attached as "**fib_rec.c**"

The 42th number in Fibonacci series?

The 42th number in Fibonacci series is 267914296

PFB the screenshot of the result achieved:



Why does your program take as long as it does?

In the recursive method we have:

T(1) = 2 T(0)

T(2) = (2^2) T(0)

T(3) = (2^3) T(0)

.

.

T(n) = (2^n) T(0)

=> Increasing the input by 1 is enough to multiply the algorithm's running time (by 2). So, the larger the input value is, the more number of multiplications will increase the algorithm's running time

What is the order of the algorith (in k)?

The order of the algorithm is O(2^n)

The C function for fibonacci series using recursive calls has been attached as "**fib_big_O.c"**

PFB the result: