## QUESTION:

Why is it a bad idea to use recursion method to find the fibonacci of a number?

## SOLUTION:

Recursion is simply defined as the process of defining a problem (or the solution to a problem) in terms of (a simpler version of) itself or repeating items in a self-similar way.

The Fibonacci sequence can be explained as the integer sequence in which the first two numbers are 0 and 1, and the next numbers after the first two is the sum of the two preceding numbers. Eg: 0, 1, 1, 2, 3, 5, 8, 13, 21, 34, etc. It can be described a $x(n) = x(n-1) + x(n-2)$

Finding the Fibonacci of a number of a number using the recursion method is a bad idea because the recursion overlaps and repeats the same calculations many times.
For example, to calculate f(3):
f(3) = f(2) + f(1) = f(1) + f(0) + f(1) = 1 + 0 + 1 = 2

From this example, it can be seen that there are multiple calculations for the same value. This gets worse as the series progresses. We would have to calculate the same value multiple times to get to the latter number in the series.

This process takes a lot of computational resources which makes it very expensive and very time consuming and this makes the process less efficient.