Recursive definition of $\binom{n}{k}$

Let’s write a function $C(n, k)$
The number of ways to select $k$ objects from a set of $n$ objects.

Let’s consider specific problem $C(n, 4)$

This point can be **included** in the 4 points we choose
Or, it can be excluded from the 4 points we choose

Total number of solutions is
  number of solutions including $\bigcirc$
  + number of solutions not including $\bigcirc$

Total number of solutions is
  number of solutions including $\bigcirc$ $\binom{n-1, k-1}$
  + number of solutions not including $\bigcirc$ $\binom{n-1, k}$
int C(int n, int k)
{
    if (k == 0 || n == k) return (1);
    return (C(n-1, k-1) + C(n-1, k));
}