CS 3340 HON Project 3

This is not a group project.

Write a recursive MIPS assembler program to do the following:

1. Read two decimal integers, n and k, from the console, $0 \leq n, k \leq 30$.
2. Call a recursive function, passing two arguments, n and k, to compute $C(n, k)$ (you have to write this function based on the recurrence relation below):
3. Print the result on the console.
4. Jump back to the beginning to read two more values of n and k, or exit if $n = k = 0$

Add text messages to the program to make it easier to use.

$$C(n,k) = \begin{cases} 1 & : \quad n > 0, k = 0 \\ 1 & : \quad n = k \\ C(n-1,k-1) + C(n-1,k) & : \quad n, k > 0, n \neq k \end{cases}$$

Use the function calling style demonstrated in the recursive program to compute factorial(n). Since you are calling the function twice within its body you will have to save results on the stack so that they can be combined before exiting to the caller (which might be the function itself.)