Problem C. Counting Strings

Source file name:	counting.c, counting.cpp, counting.java
Input:	Standard
Output:	Standard
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A Binary string is a string formed only of 0 and 1. For example 00011101 is a binary string while 000201023 is not.

A change on a binary string is defined as follows :

- Let a be the $i-th$ value in the string

- Let b be the $j-th$ value in the string where $j = i + 1$

- If a and b are not the same value, then, there is a change in the string between i and j

In the valid binary string showed bellow (00011101) you can find 3 changes:

- 1st change is between 2 and 3

- 2nd change is between 5 and 6

- 3rd change is between 6 and 7

- Indexes start in 0

To not take much of your time reading this problem we will describe it the fastest we can. Given two numbers N and K, you have to create a computer program that counts how many binary strings with length N exist that have exactly K changes.

Input

The input consists of several test cases. Each test case contains a single line with two numbers N and K separated by a white space. The end of the test cases is given by the end of file (EOF).

- $1 \leq N \leq 10^5$

- $1 \leq K < N$

Output

For each test case print in one line the requested answer modulo $p = 10^9 + 7$.

Example

Input	Output
1 0	2
3 0	2
10 3	168