

Problem C – Problem C

In the magical city of Chromia, there are  $N$  friends who love colorful balls. These friends often come together to play games, and the most recent challenge is a fun distribution of colorful balls. The challenge is to ensure that every pair of friends has at least one ball of the same color, symbolizing their friendship and connection.

There are  $K$  different colors of balls available, and you want to find out how many ways you can distribute the balls among the  $N$  friends such that **every pair of friends has at least one ball of the same color**. Each friend can receive any number of balls, but they can receive at most one ball of each color.

Can you calculate the number of valid ways to distribute the balls, ensuring that every pair of friends shares at least one ball of the same color?

Input

The first line contains two integers  $N$  and  $K$  ( $2 \leq N \leq 10^3$ ,  $1 \leq K \leq 10^2$ ) — the number of friends and the number of different ball colors available.

Output

Output a single integer representing the number of valid ways to distribute the balls, modulo  $10^9 + 7$ , where each pair of friends has at least one ball of the same color.

<b>Sample input 1</b>  3 1	<b>Sample output 1</b>  1
<b>Sample input 2</b>  3 2	<b>Sample output 2</b>  21
<b>Sample input 3</b>  3 3	<b>Sample output 3</b>  265