

THE INTERNATIONAL OLYMPIAD IN INFORMATICS IN TEAMS

MAY 23-28, 2018

KST

time limit per test: 0.1 seconds
memory limit per test: 256 megabytes
input: standard input
output: standard output

A KST is a search tree which has K values in every node and $(K+1)$ children. For example, for $k=1$ a KST becomes a binary search tree. The values inside each node are sorted in ascending order. We will write $v[i]$ for the value on the position i of a node. The tree has the following property: for every node, its first child will contain smaller values than $v[1]$, the second child will contain values in the interval $(v[1], v[2])$, the third child will contain values in the interval $(v[2], v[3])$, ..., the penultimate child will contain values in the interval $(v[k-1], v[k])$, and the last child will contain larger values than $v[k]$.

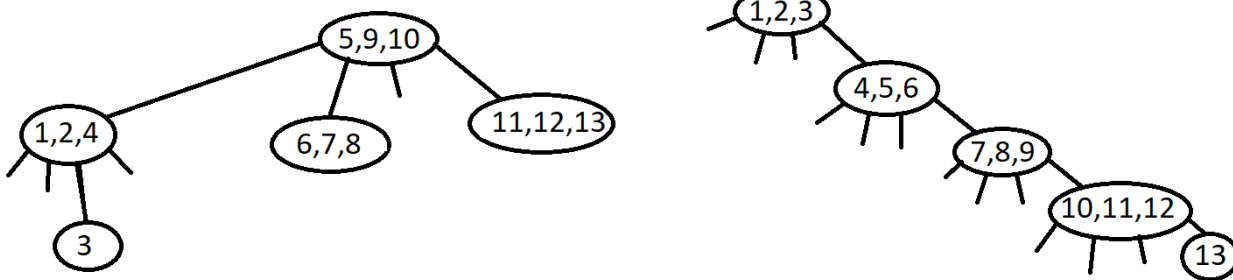
A node cannot have children if it does not contain K values. The leaves can contain even fewer than k values.

Task

Given N – the number of elements and K , the task is to find out how many such trees exist.

The elements will be $1, 2, 3, \dots, N$.

For example, the following two trees are valid for $N = 13$ and $K = 3$.



Input

The first line contains the numbers N and K .

Output

The first line will display how many such trees exist **modulo 666013**.

Constraints

$1 \leq n, k \leq 1000$

for 10% of the testcases, $n \leq 10$ and $k \leq 4$

for another 15% of the testcases, $n \leq 25$ and $k \leq 4$

for another 25% of the testcases, $n \leq 1000$ and $k = 1$

Example

Input	Input	Input	Input
5 1	5 2	666 13	987 123
Output	Output	Output	Output
42	16	581769	529937



MINISTERUL
EDUCAȚIEI
NAȚIONALE



INSPECTORATUL ȘCOLAR
JUDEȚEAN NEAMȚ



ALEXANDRU IOAN CUZA
UNIVERSITY of IASI



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