Increasing Elo

Hans is an avid chess player who would do *anything* (well, anything except cheating, right?) to increase his Elo rating, together with his skill in the game. Monitoring the long-term improvement of one's playing strength is not an easy task: one may accidently have some bad games, drop some Elo rating points, which they would immediately win back in a subsequent set of games.

Hans came up with a new system to measure his performance over time: given N chess games played by Hans, he assigns a *unique* score to each game, which is a number between 1 and N (inclusive). The scores are assigned so they represent the relative differences in Hans' Elo ratings following each game. For example, if $N = 3$ then the scores $1, 3, 2$ depict that his Elo was the lowest after the first game, the highest after the second game and the second highest after the third game.

Hans then chooses a positive integer K, representing his tolerance for stagnating Elo ratings. He claims that his improvement is satisfactory over the N games if the score of any game is strictly greater than the *minimum* score of the previous K games. Formally, denote the scores of the games by $s_1, s_2, \ldots, s_N$. Hans is satisfied if for every i from $k + 1$ to N (inclusive) $s_i > \min(s_{i-1}, s_{i-2}, \ldots, s_{i-k})$ holds.

For example, the scores $1, 3, 2$ are satisfactory for $K = 2$ as $2 > \min(1, 3)$. However, the same scores are not satisfactory for $K = 1$ as out of $3 > \min(1)$ and $2 > \min(3)$, the second inequality does not hold.

Hans is wondering: given the value of N and K, how many sequences of scores exist which are satisfactory.

Input

The input is a single line containing N and K ($1 \leq K \leq N \leq 1\,000\,000$), the number of games and the stagnation tolerance.

Output

Print a single line containing the number of different satisfactory score sequences. Since the answer can be large, output it modulo $10^9 + 7$.

Examples

input	output
3 2	4
3 1	1
4 2	10

Explanation

In the first sample case, the four satisfactory sequences are $1, 2, 3$; $1, 3, 2$; $2, 1, 3$; and $3, 1, 2$. Note that the scores in each sequence must be unique.