Problem M. Matrix Counting

Input file:	*standard input*
Output file:	*standard output*
Time limit:	5 seconds
Memory limit:	1024 mebibytes

We call an $n \times n$ matrix containing only `0`s and `1`s *bad* if and only if it contains exactly one `1` in each row and column.

Bad	**Bad**	**Bad**	**Not Bad**	**Not Bad**	**Not Bad**
$\begin{bmatrix} 0 & 1 \\ 1 & 0 \end{bmatrix}$	$\begin{bmatrix} 1 & 0 \\ 0 & 1 \end{bmatrix}$	$\begin{bmatrix} 1 & 0 & 0 \\ 0 & 0 & 1 \\ 0 & 1 & 0 \end{bmatrix}$	$\begin{bmatrix} 1 & 1 & 0 \\ 1 & 0 & 1 \\ 0 & 1 & 1 \end{bmatrix}$	$\begin{bmatrix} 0 & 0 & 0 \\ 0 & 1 & 0 \\ 0 & 0 & 0 \end{bmatrix}$	$\begin{bmatrix} 0 & 0 \\ 0 & 0 \end{bmatrix}$

Define B to be a *subrectangle* of an $n \times n$ matrix A if and only if there exist $1 \le l_1 \le r_1 \le n$ and $1 \le l_2 \le r_2 \le n$ such that

- B is a $(r_1 - l_1 + 1) \times (r_2 - l_2 + 1)$ matrix.
- $B_{i,j} = A_{l_1+i-1, r_1+j-1}$ $(1 \le i \le r_1 - l_1 + 1, 1 \le j \le r_2 - l_2 + 1)$

A	B	**Explanation**
$\begin{bmatrix} 1 & 0 & 0 \\ 0 & 0 & 1 \\ 0 & 1 & 1 \end{bmatrix}$	$\begin{bmatrix} 0 & 0 \\ 0 & 1 \end{bmatrix}$	$\begin{bmatrix} 1 & \mathbf{0} & \mathbf{0} \\ 0 & \mathbf{0} & \mathbf{1} \\ 0 & 1 & 1 \end{bmatrix}$
$\begin{bmatrix} 1 & 0 & 0 \\ 0 & 0 & 1 \\ 0 & 1 & 1 \end{bmatrix}$	$\begin{bmatrix} 1 & 0 \\ 0 & 0 \end{bmatrix}$	$\begin{bmatrix} \mathbf{1} & \mathbf{0} & 0 \\ \mathbf{0} & \mathbf{0} & 1 \\ 0 & 1 & 1 \end{bmatrix}$
$\begin{bmatrix} 1 & 0 & 0 \\ 0 & 0 & 1 \\ 0 & 1 & 1 \end{bmatrix}$	$\begin{bmatrix} 1 & 0 \\ 0 & 1 \end{bmatrix}$	Not a subrectangle

Given two integers n and m, you want to calculate how many $n \times n$ matrices M containing only `0`s and `1`s are there such that:

1. M is *bad*,
2. all its subrectangles of size $k \times k$ $(k = m+1, m+2, \ldots, n-1)$ are not *bad*.

Since the answer can be large, output it modulo $998\,244\,353$.

Input

The first line contains two integers n and m $(1 \le m < n \le 10^5)$.

Output

Output a single line containing a single integer, indicating the answer modulo $998\,244\,353$.

Examples

standard input	standard output
`3 2`	`6`
`4 2`	`4`
`300 20`	`368258992`
`100000 1`	`91844344`

Note

In the first example, there are 6 *bad* matrices. The second condition does not matter since $m + 1 = 3 > n - 1 = 2$. So the answer is 6.

In the second example, there are 4 matrices satisfying the conditions:

$\begin{bmatrix} 0 & 1 & 0 & 0 \\ 0 & 0 & 0 & 1 \\ 1 & 0 & 0 & 0 \\ 0 & 0 & 1 & 0 \end{bmatrix}$	$\begin{bmatrix} 0 & 0 & 1 & 0 \\ 1 & 0 & 0 & 0 \\ 0 & 0 & 0 & 1 \\ 0 & 1 & 0 & 0 \end{bmatrix}$	$\begin{bmatrix} 0 & 0 & 1 & 0 \\ 0 & 0 & 0 & 1 \\ 1 & 0 & 0 & 0 \\ 0 & 1 & 0 & 0 \end{bmatrix}$	$\begin{bmatrix} 0 & 1 & 0 & 0 \\ 1 & 0 & 0 & 0 \\ 0 & 0 & 0 & 1 \\ 0 & 0 & 1 & 0 \end{bmatrix}$