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HOME TOP CONTESTS GYM PROBLEMSET GROUPS RATING API HELP KOTLIN HEROES DASHA CALENDAR

PROBLEMS SUBMIT CODE MY SUBMISSIONS STATUS HACKS ROOM STANDINGS CUSTOM INVOCATION

E. Natasha, Sasha and the Prefix Sums

time limit per test: 2 seconds
memory limit per test: 256 megabytes
input: standard input
output: standard output

Natasha's favourite numbers are n and 1, and Sasha's favourite numbers are m and -1. One day Natasha and Sasha met and wrote down every possible array of length $n + m$ such that some n of its elements are equal to 1 and another m elements are equal to -1. For each such array they counted its maximal prefix sum, probably an empty one which is equal to 0 (in another words, if every nonempty prefix sum is less to zero, then it is considered equal to zero). Formally, denote as $f(a)$ the maximal prefix sum of an array $a_{1,\ldots,l}$ of length $l \geq 0$. Then:

$$f(a) = \max(0, \max_{1 \leq i \leq l} \sum_{j=1}^{i} a_j)$$

Now they want to count the sum of maximal prefix sums for each such an array and they are asking you to help. As this sum can be very large, output it modulo $998\,244\,853$.

Input

The only line contains two integers n and m ($0 \leq n, m \leq 2\,000$).

Output

Output the answer to the problem modulo $998\,244\,853$.

Examples

input	Copy
0 2	

output	Copy
0	

input	Copy
2 0	

output	Copy
2	

input	Copy
2 2	

output	Copy
5	

input	Copy
2000 2000	

output	Copy
674532367	

Note

In the first example the only possible array is `[-1, -1]`, its maximal prefix sum is equal to 0.

In the second example the only possible array is `[1, 1]`, its maximal prefix sum is equal to 2.

There are 6 possible arrays in the third example:

Codeforces Round #581 (Div. 2)
Finished
Practice

→ Virtual participation

Virtual contest is a way to take part in past contest, as close as possible to participation on time. It is supported only ACM-ICPC mode for virtual contests. If you've seen these problems, a virtual contest is not for you - solve these problems in the archive. If you just want to solve some problem from a contest, a virtual contest is not for you - solve this problem in the archive. Never use someone else's code, read the tutorials or communicate with other person during a virtual contest.

Start virtual contest

→ Practice

You are registered for practice. You can solve problems unofficially. Results can be found in the contest status and in the bottom of standings.

→ Clone Contest to Mashup

You can clone this contest to a mashup.

Clone Contest

→ Submit?

Language: GNU G++11 5.1.0

Choose file: 选择文件 未选择任何文件

Be careful: there is 50 points penalty for submission which fails the pretests or resubmission (except failure on the first test, denial of judgement or similar verdicts). "Passed pretests" submission verdict doesn't guarantee that the solution is absolutely correct and it will pass system tests.

Submit

→ Problem tags

combinatorics dp math number theory *2400

No tag edit access

`[1,1,-1,-1],f([1,1,-1,-1]) = 2`

`[1,-1,1,-1],f([1,-1,1,-1]) = 1`

`[1,-1,-1,1],f([1,-1,-1,1]) = 1`

`[-1,1,1,-1],f([-1,1,1,-1]) = 1`

`[-1,1,-1,1],f([-1,1,-1,1]) = 0`

`[-1,-1,1,1],f([-1,-1,1,1]) = 0`

So the answer for the third example is $2 + 1 + 1 + 1 + 0 + 0 = 5$.

→ Contest materials

- Announcement (en)
- Tutorial (en)

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