Coding Arena

Problem : Matrix Power

Alice is learning basic discrete mathematics. In between of her leanings one day her tutor has given the following problem.

"A^M = A*A*A ... M times."

Let K be the matrix with N*N size and Aij represent the element at ith row and jth column. Matrix exponent product is defined as $\prod_{1 \le i,j \le N} (a_{ij})^m$. As the result can be long mod the result with 1000000007.

As the Alice is newbie to maths, help her to solve the problem.

Input Format:

First line starts with N, and then N lines follow each will contain N spaced integers Aij.
After N lines next line contains M.

Output Format:

Print the matrix exponent product.

Constraints:

1<=N<=4000

1<=Aij<=10^7

1<=M<=10^9

Sample Input and Output

SNo.	Input	Output
1	2 1 1 2 2 4	256

Explanation:

After the raising the every element to its exponent matrix will become
1 1
16 16
And the product of all the elements in the array will become 256.

Note:

Please do not use package and namespace in your code. For object oriented languages your code should be written in one class.

Note:

Participants submitting solutions in C language should not use functions from <conio.h> / <process.h> as these files do not exist in gcc

Note:

For C and C++, return type of main() function should be int.

Submit Answer

I , **CHANDRAMANI ADIL** confirm that the answer submitted is my own.

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