



HOME TOP CONTESTS GYM PROBLEMSET GROUPS RATING API HELP HONORCUP CALENDAR

PROBLEMS SUBMIT CODE MY SUBMISSIONS STATUS STANDINGS CUSTOM INVOCATION

B. Friends

time limit per test: 6 seconds memory limit per test: 256 megabytes input: standard input output: standard output

You have n friends and you want to take m pictures of them. Exactly two of your friends should appear in each picture and no two pictures should contain the same pair of your friends. So if you have n = 3 friends you can take 3 different pictures, each containing a pair of your friends.

Each of your friends has an attractiveness level which is specified by the integer number a_i for the i-th friend. You know that the attractiveness of a picture containing the i-th and the j-th friends is equal to the exclusive-or (xor operation) of integers a_i and a_i .

You want to take pictures in a way that the total sum of attractiveness of your pictures is maximized. You have to calculate this value. Since the result may not fit in a 32-bit integer number, print it modulo $1000000007 (10^9 + 7)$.

Input

The first line of input contains two integers n and m $(1 \le n \le 5 \cdot 10^4; \ 0 \le m \le \frac{n \cdot (n-1)}{2})$ — the number of friends and the number of pictures that you want to take.

Next line contains n space-separated integers $a_1, a_2, ..., a_n$ ($0 \le a_i \le 10^9$) — the values of attractiveness of the friends.

Output

The only line of output should contain an integer — the optimal total sum of attractiveness of your pictures.

Examples

input	Сору
3 1 1 2 3	
output	Сору
3	
innut	Copy

input	Сору
3 2 1 2 3	
output	Сору
5	

input	Сору
3 3 1 2 3	
output	Сору
6	

→ Attention

Package for this problem was not updated by the problem writer or Codeforces administration after we've upgraded the judging servers. To adjust the time limit constraint, solution execution time will be multiplied by 2. For example, if your solution works for 400 ms on judging servers, then value 800 ms will be displayed and used to determine the verdict.

<u>Bayan 2012-2013 Elimination</u> <u>Round (ACM ICPC Rules, English</u> <u>statements)</u>

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 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

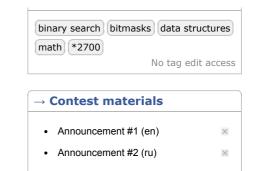
You can clone this contest to a mashup.

Clone Contest

→ Submit?	
Language:	GNU G++11 5.1.0 ▼
Choose file:	选择文件 未选择任何文件
	Submit

\rightarrow Problem tags

2019/10/8 Problem - B - Codeforces



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