



HOME TOP CATALOG CONTESTS GYM PROBLEMSET GROUPS RATING EDU API CALENDAR HELP

PROBLEMS SUBMIT CODE MY SUBMISSIONS STATUS HACKS ROOM STANDINGS CUSTOM INVOCATION

#### D. Jzzhu and Numbers

time limit per test: 2 seconds memory limit per test: 256 megabytes

Jzzhu have n non-negative integers  $a_1, a_2, ..., a_n$ . We will call a sequence of indexes  $i_1, i_2, ..., i_k$   $(1 \le i_1 \le i_2 \le ... \le i_k \le n)$  a group of size k.

Jzzhu wonders, how many groups exists such that  $a_{i_1}$  &  $a_{i_2}$  & ... &  $a_{i_k} = 0$  ( $1 \le k \le n$ )? Help him and print this number modulo 1000000007 ( $10^9 + 7$ ). Operation x & y denotes bitwise AND operation of two numbers.

#### Innut

The first line contains a single integer n ( $1 \le n \le 10^6$ ). The second line contains n integers  $a_1, a_2, ..., a_n$  ( $0 \le a_i \le 10^6$ ).

#### Output

Output a single integer representing the number of required groups modulo  $100000007 (10^9 + 7)$ .

#### Examples

input	Сору
3 2 3 3	
2 3 3	
output	Сору
0	
input	Сору
4	
4 0 1 2 3	
output	Сору
10	
input	Сору
6	
6 5 2 0 5 2 1	
output	Сору
53	

### Codeforces Round 257 (Div. 1) 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

#### → Clone Contest to Mashup

You can clone this contest to a mashup.

Clone Contest

# → **Submit?**Language: GNU G++20 13.2 (64 bit, win **>**Choose file: Choose File No file chosen Submit

→ Last submissions				
Submission	Time	Verdict		
325486229	Jun/21/2025 20:21	Accepted		
325485960	Jun/21/2025 20:20	Accepted		

→ Problem tags	
(bitmasks) (combinatorics) (dp) (*2400)	
No tag edit access	

## → Contest materials Codeforces Round #257 Tutorial (en)

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The only programming contests Web 2.0 platform
Server time: Jun/26/2025 03:54:45 (j2).
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