Weird DNA

Input file:	`standard input`
Output file:	`standard output`
Time limit:	1 second
Memory limit:	256 megabytes

In some science competition , there is a challenge called Weird DNA , which consists of n sets of half chromosomes with distinct sizes of fype 2^i . The sets are represented by integers . Let's consider a set S represented by some integer x , there is a half chromosome in the set S if and only if the i'th bit is on in the binary representation of the integers x . For exemple , $x = 5$, $(5)_{(10} = (101)_{(2)}$, then in the set there is one half chromosome of size 2^0 and one half chromosome of size 2^2.

Now after understanding what the game consists of , the challenge is to find some consecutive sets which can create a good DNA , a good DNA is where we can split the half chromosomes in pairs such that every pair contains 2 half chromosome of the same size .

You consider this challenge so easy , so instead of finding such sets , you will calculate the number of ways to choose some consecutive sets that forms a good DNA .

Input

The first line contains one integer n ($1 \leq n \leq 100000$).

The second line contains n integers a_i ($1 \leq a_i \leq 1000000$) the i'th integer is the representative of the i'th set.

Output

Output one integer , the answer to the problem .