B. Soldier and Badges

time limit per test: 3 seconds
memory limit per test: 256 megabytes
input: standard input
output: standard output

Colonel has n badges. He wants to give one badge to every of his n soldiers. Each badge has a *coolness factor*, which shows how much it's owner reached. Coolness factor can be increased by one for the cost of one coin.

For every pair of soldiers one of them should get a badge with strictly higher factor than the second one. Exact values of their factors aren't important, they just need to have distinct factors.

Colonel knows, which soldier is supposed to get which badge initially, but there is a problem. Some of badges may have the same factor of coolness. Help him and calculate how much money has to be paid for making all badges have different factors of coolness.

Input

First line of input consists of one integer n ($1 \le n \le 3000$).

Next line consists of n integers a_i ($1 \le a_i \le n$), which stand for coolness factor of each badge.

Output

Output single integer — minimum amount of coins the colonel has to pay.

Examples

input
4 1 3 1 4
output
1

input
5 1 2 3 2 5
output
2

Note

In first sample test we can increase factor of first badge by 1.

In second sample test we can increase factors of the second and the third badge by 1.

Codeforces Round #304 (Div. 2)

Finished

→ **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

→ **Problem tags**

brute force greedy implementation sortings

No tag edit access

→ **Contest materials**

- Announcement
- Tutorial