

C. Two Teams Composing

time limit per test: 2 seconds

memory limit per test: 256 megabytes

input: standard input

output: standard output

You have n students under your control and you have to compose **exactly two teams** consisting of some subset of your students. Each student had his own skill, the i -th student skill is denoted by an integer a_i (different students can have the same skills).

So, about the teams. Firstly, these two teams should have the same size. Two more constraints:

- The first team should consist of students with **distinct** skills (i.e. all skills in the first team are unique).
- The second team should consist of students with **the same** skills (i.e. all skills in the second team are equal).

Note that it is permissible that some student of the first team has the same skill as a student of the second team.

Consider some examples (skills are given):

- $[1, 2, 3], [4, 4]$ is not a good pair of teams because sizes should be the same;
- $[1, 1, 2], [3, 3, 3]$ is not a good pair of teams because the first team should not contain students with the same skills;
- $[1, 2, 3], [3, 4, 4]$ is not a good pair of teams because the second team should contain students with the same skills;
- $[1, 2, 3], [3, 3, 3]$ is a good pair of teams;
- $[5], [6]$ is a good pair of teams.

Your task is to find the maximum possible size x for which it is possible to compose a valid pair of teams, where each team size is x (skills in the first team needed to be unique, skills in the second team should be the same between them). A student cannot be part of more than one team.

You have to answer t independent test cases.

Input

The first line of the input contains one integer t ($1 \leq t \leq 10^4$) — the number of test cases. Then t test cases follow.

The first line of the test case contains one integer n ($1 \leq n \leq 2 \cdot 10^5$) — the number of students. The second line of the test case contains n integers a_1, a_2, \dots, a_n ($1 \leq a_i \leq n$), where a_i is the skill of the i -th student. Different students can have the same skills.

It is guaranteed that the sum of n over all test cases does not exceed $2 \cdot 10^5$ ($\sum n \leq 2 \cdot 10^5$).

Output

For each test case, print the answer — the maximum possible size x for which it is possible to compose a valid pair of teams, where each team size is x .

Example

Codeforces Round #634 (Div. 3)

Finished

Practice



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Language: GNU G++20 11.2.0 (64 bit, w)

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input	Copy
<pre>4 7 4 2 4 1 4 3 4 5 2 1 5 4 3 1 1 4 1 1 1 3</pre>	
output	Copy
<pre>3 1 0 2</pre>	

Note

In the first test case of the example, it is possible to construct two teams of size 3: the first team is [1, 2, 4] and the second team is [4, 4, 4]. Note, that there are some other ways to construct two valid teams of size 3.

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