Practice problem - Make all equal using Pairs

Statement | Solution

Chef has an array A of length N.

In one operation, Chef can do the following

- Choose any two **distinct** indices i, j $(1 \leq i, j \leq N, i \neq j)$ and
- **Either** change A_i to A_j **or** change A_j to A_i.

Find the **minimum** number of operations required to make all the elements of the array **equal**.

Input Format

- First line will contain T, number of test cases. Then the test cases follow.
- First line of each test case consists of an integer N - denoting the size of array A.
- Second line of each test case consists of N space-separated integers $A_1, A_2, \ldots, A_N$ - denoting the array A.

Output Format

For each test case, output the minimum number of operations required to make all the elements equal.

Constraints

- $1 \leq T \leq 100$
- $2 \leq N \leq 1000$
- $1 \leq A_i \leq 1000$

Sample 1:

Input	Output
4 3 1 2 3 4 5 5 5 5 4 2 2 1 1 3 1 1 2	2 0 2 1

Explanation:

Test Case 1**:** You can make all the elements equal in 2 operations. In the first operation, you can choose indices $1, 2$ and convert A_1 to A_2. So the array becomes $[2, 2, 3]$. Now you can choose indices $1, 3$ and convert A_3 to A_1, so the final array becomes $[2, 2, 2]$.

Test Case 2**:** Since all the elements are already equal there is no need to perform any operation.

Test Case 3**:** You can make all the elements equal in 2 operations. In the first operation, you can choose indices $1, 3$ and convert A_1 to A_3. So the array becomes $[1, 2, 1, 1]$. Now you can choose indices $1, 2$ and convert A_2 to A_1, so the final array becomes $[1, 1, 1, 1]$.

Test Case 4**:** You can make all the elements equal in 1 operation. You can pick indices $2, 3$ and convert A_3 to A_2 after which the array becomes $[1, 1, 1]$.