## Problem Statement

Given an array of integers, find the sum of the median of the array till the array size becomes empty. The following operations are performed on the array, and the median is calculated in each step:

1. If the array size is odd, the middle element is deleted. E.g., [1,2,3] -> 2 is deleted and added to the median sum.

* If the array size is even, the smaller of the two middle elements are deleted.  E.g. [1,2,3,4] smaller of (2,3), i.e., 2 is deleted, and (2+3)/2 is added to the median sum.

Input Format

The first line of iinput contains an integer N, the size of the array.

The second line contains N space-seprated integers representing the array.

Output Format

Display the single Integer representing the sum of all the medians.

Constraints

1 <= N <=100000

-65356 >= *A[i]* <= 65356

Sample Testcase 0

Testcase Input

1 1

Testcase Output

1

Explanation

There is only one element so the answer will be 1.

Sample Testcase 1

Testcase Input

5 1 2 3 4 5

Testcase Output

18

Explanation

The median of [1,2,3,4,5] is 3, so the sum=3 and ‘3’ is deleted.

The median of [1,2,4,5] is (2+4)/2, so sum=3+3 and ‘2’ is deleted.

The Median of [1,4,5] is 4, so sum=3+3+4 and ‘4’ is deleted.

The median of [1,5] is (1+5)/2, so sum=3+3+4+3, and ‘1’ is deleted.

The median of [5] is 5, so sum=3+3+4+3+5, and ‘5’ is deleted.

The array becomes empty, so the final sum is 18

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Import java.io.\*;

import java.util.\*;

import java.text.\*;

import java.math.\*;

import java.util.regex.\*;

class Main {

    public static void main(String[] args) {

        /\* Enter your code here. Read input from STDIN. Print output to STDOUT. Your class should be named Solution. \*/

         Scanner sc = new Scanner(System.in);

        int n = sc.nextInt();

         List<Integer> arr = new ArrayList<>();

        // Read input into the list

        for (int i = 0; i < n; i++) {

            arr.add(sc.nextInt());

        }

        int sum = 0;

        while (!arr.isEmpty()) {

            // Sort the array to find the median

            Collections.sort(arr);

            int mid;

            if (arr.size() % 2 == 1) {

                // Odd length, take the middle element

                mid = arr.size() / 2;

                sum += arr.get(mid);

                arr.remove(mid);

            } else {

                // Even length, take the average of two middle elements

                mid = arr.size() / 2;

                int median = (arr.get(mid - 1) + arr.get(mid)) / 2;

                sum += median;

                // Remove the smaller element first

                arr.remove(mid - 1);

            }

        }

        // Output the final sum

        System.out.println(sum);

    }

}