BPC 1 J3 - Group Project

Time limit: 2.0s **Memory limit:** 512M

You are a teacher deciding on pairs for a group project. You have $2N$ students that are given a *quality* score q_i. For each pair, you will receive X complaints, where X is the difference in *quality* between the two students. Output the minimum number of complaints you can receive.

Constraints

$1 \leq N \leq 10^6$

$1 \leq q_i \leq 10^9$ for all integer i from 1 to $2N$.

Input Specification

The first line contains an integer, N.

The second line contains $2N$ integers, the i^{th} being q_i.

Output Specification

Output a single line containing an integer, the number of complaints if you optimally pair students to minimize complaints.

Note: the answer might not fit in a 32-bit integer.

Sample Input

```
3
1 7 4 6 10 9
```

Sample Output

```
5
```