# Pairs

SEASON 9 – FOURTH ROUND

You are given 2*N numbers. Your task is to divide them into pairs, such that the sum of the absolute difference of the numbers in each pair is minimal.

### Input

From the first line of the input file `pairs.in` N is entered.

From the next line 2*N numbers are entered.

### Output

In the output file `pairs.out` print the minimum sum of the differences.

### Constraints

$1 \leq N \leq 100\ 000$

$0 \leq \text{each of the numbers} \leq 10^{18}$

**Time limit: 0.4 seconds**
**Memory limit: 256 MB**

### Example

| Input (pairs.in) | Output (pairs.out) | Explanation |
|---|---|---|
| 3<br>5 7 1 6 9 5 | 7 | When the pairs are (7;9), (6;5) and (1;5)<br>the sum of the differences is<br>2 + 1 + 4 = 7 and that is the minimum possible sum. |