UWPC

Question 6

Save Money, Live Better

A company is planning to interview 2n people. Given the array costs where costs[i] = [aCosti, bCosti], the cost of flying the ith person to city a is aCosti, and the cost of flying the ith person to city b is bCosti.

Return the minimum cost to fly every person to a city such that exactly n people arrive in each city.

Input

- Multiple lines of integers, representing the costs of flying each person to city A and city B respectively.

Output

- A single integer, representing the minimum cost to fly every person to a city such that exactly n people arrive in each city.

Sample 1

Input

```
10 20
30 200
400 50
30 20
```

Output

```
110
```

Explanation:

- The first person goes to city A for a cost of 10.
- The second person goes to city A for a cost of 30.
- The third person goes to city B for a cost of 50.
- The fourth person goes to city B for a cost of 20.
- The total minimum cost is 10 + 30 + 50 + 20 = 110 to have half the people interviewing in each city.

Sample 2

Input

```
259 770
448 54
926 667
184 139
840 118
577 469
```

Output

```
1859
```

Explanation:

- The first person goes to city A for a cost of 259.
- The second person goes to city B for a cost of 54.
- The third person goes to city B for a cost of 667.
- The fourth person goes to city B for a cost of 139.
- The fifth person goes to city B for a cost of 118.
- The sixth person goes to city B for a cost of 469.
- The total minimum cost is 259 + 54 + 667 + 139 + 118 + 469 = 1859 to have half the people interviewing in each city.

Sample 3

Input

```
515 563
451 713
537 709
343 819
855 779
457 60
650 359
631 42
```

Output

```
3086
```

Explanation:

- The first person goes to city A for a cost of 515.
- The second person goes to city A for a cost of 451.
- The third person goes to city A for a cost of 537.
- The fourth person goes to city A for a cost of 343.
- The fifth person goes to city B for a cost of 779.
- The sixth person goes to city B for a cost of 60.
- The seventh person goes to city B for a cost of 359.
- The eighth person goes to city B for a cost of 42.
- The total minimum cost is 515 + 451 + 537 + 343 + 779 + 60 + 359 + 42 = 3086 to have half the people interviewing in each city.