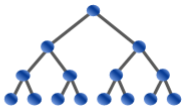

USACO 2016 December Contest, Gold
Problem 2. Cow Checklist

Return to Problem List

Contest has ended.

Analysis mode

English (en)

Every day, Farmer John walks through his pasture to check on the well-being of each of his cows. On his farm he has two breeds of cows, Holsteins and Guernseys. His H Holsteins are conveniently numbered $1 \dots H$, and his G Guernseys are conveniently numbered $1 \dots G$ ($1 \leq H \leq 1000, 1 \leq G \leq 1000$). Each cow is located at a point in the 2D plane (not necessarily distinct).

Farmer John starts his tour at Holstein 1, and ends at Holstein H. He wants to visit each cow along the way, and for convenience in maintaining his checklist of cows visited so far, he wants to visit the Holsteins and Guernseys in the order in which they are numbered. In the sequence of all $H + G$ cows he visits, the Holsteins numbered $1 \dots H$ should appear as a (not necessarily contiguous) subsequence, and likewise for the Guernseys. Otherwise stated, the sequence of all $H + G$ cows should be formed by interleaving the list of Holsteins numbered $1 \dots H$ with the list of Guernseys numbered $1 \dots G$.

When FJ moves from one cow to another cow traveling a distance of D, he expends D^2 energy. Please help him determine the minimum amount of energy required to visit all his cows according to a tour as described above.

INPUT FORMAT (file checklist.in):

The first line of input contains H and G, separated by a space.

The next H lines contain the x and y coordinates of the H Holsteins, and the next G lines after that contain coordinates of the Guernseys. Each coordinate is an integer in the range $0 \dots 1000$.

OUTPUT FORMAT (file checklist.out):

Write a single line of output, giving the minimum energy required for FJ's tour of all the cows.

SAMPLE INPUT:

```
3 2
0 0
1 0
2 0
0 3
1 3
```

SAMPLE OUTPUT:

```
20
```

Problem credits: Brian Dean

Language: C

Source File: 选择文件 未选择任何文件

Submit Solution

Note: Many issues (e.g., uninitialized variables, out-of-bounds memory access) can cause a program to produce different output when run multiple times; if your program behaves in a manner inconsistent with the official contest results, you should probably look for one of these issues. Timing can also differ slightly from run to run, so it is possible for a program timing out in the official results to occasionally run just under the time limit in analysis mode, and vice versa. Note also that we have recently changed grading servers, and since our new servers run at different speeds from the servers used during older contests, timing results for older contest problems may be slightly off until we manage to re-calibrate everything properly.