Problem
Ships

Input File: ShipsIn.txt
Output File: ShipsOut.txt
Project File: Ships

Admiral Billy conducts night training exercises for his fleet to simulate close-quarter engagements that might occur just outside a port in a relatively confined area. One of these exercises involves a large number of ships (up to 20) trying to rush for the open sea from various points in a bay while running in "cloaked" mode (no lights with low engine power).

The likelihood that two ships will collide under Admiral Billy's direction is extremely high. Therefore, the Navy has decided to treat the bay area used in the exercise as a two-dimensional x-y plane. A Global Positioning System (GPS) will identify the location of each participating ship as an ordered pair (x, y) in the x-y plane. You are to help by writing a program that takes the collection of ship positions and identifies the two ships that are the closest to each other. Then admiral Billy can then issue a warning to each vessel to modify its course (and thereby retain his pension). You may assume that only one pair of ships will need to be re-directed by Admiral Billy.

Inputs

The input file contains an unspecified number of fleet position specifications. Each specification begins with a line containing a single integer value N, representing the number of ships currently in the fleet ($2 \le N \le 20$). The subsequent N lines complete the specification by listing a coordinate location (x. y) of each ship in the fleet, one per line, from Ship 1 to Ship N.

Outputs

There will be one output line per specification. The line will identity the two closest ships annotated as:

Ships x and y are the closest pair.

x and y being the ship numbers, with $x < y$.

(Sample inputs and outputs are on the next page)

Sample input

```
7
0.7 2
1 2
2 2
1 1.5
2 1
3 1
4 2
8
0.25 1
1.1 0.5
0.5 0.5
0.6 0.8
1 1
2 1
2 0.7
0.9 0.5
```

Sample output

```
Ships 1 and 2 are the closest pair.
Ships 2 and 8 are the closest pair.
```