(Adv.) Competitive Programming

Submit until 07.06.2019 13:30, via the judge interface

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Problem: bracelet (1 second timelimit)

To protect them from dark magic, Hermione made spell shielding bracelets for Harry, Ron and herself out of enchanted beads. The beads have two colors each and two successive beads of the bracelet always share a common color at their meeting point, because otherwise the protection does not work at all. Otherwise the order is not important. Figure 1 shows a segment of the cyclical bracelet:

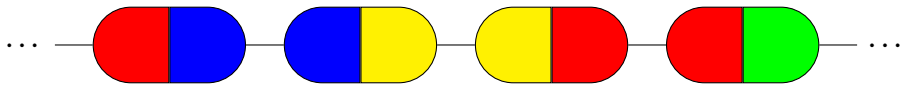

Figure 1: A segment of the cyclical bracelet.

But... oh, no! One day, in a fight against some deatheaters Harry's bracelet tore open and all of the beads were scattered on the floor. After the situation calmed down, Harry collected all he could find, but he doesn't know if he got all of them. And of course he has no idea, what order the beads were in. Can you help him reconstruct the bracelet, so it still has its protective effect? There should be no beads left over.

Input The first line contains an integer n ($5 \leq n \leq 1000$) giving the number of beads Harry collected. Each of the next n lines contains two integers $1 \leq a, b \leq 50$ describing the colors of a bead.

Output If it's impossible to construct a bracelet with a protective effect using all of the found beads, print `beads lost`. Otherwise, print N lines with a single bead description on each line. Each bead description consists of two integers giving the colors of its two ends.

Since there are many solutions, any one of them is acceptable.

Hint In C++ don't use `std::endl` if you are printing lots of lines. This will flush the output after each line, which takes a lot of time. Use `"\n"` instead. If you still need to flush the output you can use `std::flush`.

Sample input

```
5
1 2
2 3
3 4
4 5
5 6
```

Sample output

```
beads lost
```

```
5
2 1
2 2
3 4
3 1
2 4
```

```
2 1
1 3
3 4
4 2
2 2
```