CODEFORCES
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PROBLEMS SUBMIT STATUS STANDINGS CUSTOM TEST

A. Ice Skating

time limit per test: 2 seconds
memory limit per test: 256 megabytes

Bajtek is learning to skate on ice. He's a beginner, so his only mode of transportation is pushing off from a snow drift to the north, east, south or west and sliding until he lands in another snow drift. He has noticed that in this way it's impossible to get from some snow drifts to some other by any sequence of moves. He now wants to heap up some additional snow drifts, so that he can get from any snow drift to any other one. He asked you to find the minimal number of snow drifts that need to be created.

We assume that Bajtek can only heap up snow drifts at integer coordinates.

Input

The first line of input contains a single integer n ($1 \le n \le 100$) — the number of snow drifts. Each of the following n lines contains two integers x_i and y_i ($1 \le x_i, y_i \le 1000$) — the coordinates of the i-th snow drift.

Note that the north direction coincides with the direction of Oy axis, so the east direction coincides with the direction of the Ox axis. All snow drift's locations are distinct.

Output

Output the minimal number of snow drifts that need to be created in order for Bajtek to be able to reach any snow drift from any other one.

Examples

input Copy

```
2
2 1
1 2
```

output Copy

```
1
```

input Copy

```
2
2 1
4 1
```

output Copy

```
0
```

→ Attention

The package for this problem was not updated by the problem writer or Codeforces administration after we've upgraded the judging servers. To adjust the time limit constraint, a solution execution time will be multiplied by 2. For example, if your solution works for 400 ms on judging servers, then the value 800 ms will be displayed and used to determine the verdict.

Codeforces Round 134 (Div. 1)
Finished
Practice

→ Virtual participation

→ Clone Contest to Mashup

You can clone this contest to a mashup.
Clone Contest

→ Submit?

Language: GNU G++17 7.3.0
Choose file: Choose File No file chosen
Submit

→ Last submissions

Submission	Time	Verdict
315274912	Apr/13/2025 13:43	Accepted

→ Problem tags

brute force dfs and similar dsu graphs *1200

No tag edit access

→ Contest materials

- Codeforces Round #134
- Tutorial (en)

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The only programming contests Web 2.0 platform
Server time: Apr/13/2025 16:15:52 UTC+5.5 (I2).
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