The movie studio *Greenlight Casting Couch* are looking to promote their past films and have recently completed extensive market research. Every pair of their films has been compared, with a clear *best* determined in each case. The studio intends to use this information to order their films so that each film is better than the *immediately* preceding film in their list.

During research the *n* films were referred to by unique integers from 1 to *n*. (The studio will be avoiding the mistake they made several years ago, and intends to use the actual names in their marketing.)

For example, suppose that there are four films and *a*>*b* indicates testing showed *a* was better than *b*. If 1>2, 2>3, 3>1, 4>1, 4>2 and 4>3, the following lists are all valid: 3 2 1 4, 2 1 3 4 and 1 3 2 4. Note that consumers are fickle and 1>2, 2>3 and 3>1!

For any market research there is always a valid list.

The first line of input will consist of a single integer, *n* ($1 \leq n < 2^{10}$), indicating the number of films. This will be followed by a line for every possible pairing of distinct films, each containing two integers, *w* then *l* ($1 \leq w, l \leq n; w \neq l$) indicating that film *w* beat *l*. No pair of films will be repeated.

You should output a single line containing a permutation of the numbers 1 to *n* indicating a valid order for the film.

SAMPLE INPUT

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

SAMPLE OUTPUT

```
1 3 2 4
```