You run a web service with N users.
The th user with a current handle S_i wants to change it to T_i. Here, S_1 , ... , and S_N are pairwise distinct (i.e. no two elements are the same), and so are T_1 , ... , and T_N.

Determine if there is an appropriate order to change their handles to fulfill all of their requests subject to the following conditions:

- you change only one user's handle at a time;
- you change each user's handle only once;
- when changing the handle, the new handle should not be used by other users at that point.

Input Format

- N
- "S_1 T_1"
- "S_2 T_2*"
- ⋮
- "*S_N T_N"

Constraints

- $1<=N<=10^5$
- S_i and T_i are strings of length between 1 and 8 (inclusive) consisting of lowercase English letters.
- $S_i \neq T_i$
- S_i are pairwise distinct.
- T_i are pairwise distinct.

Output Format

Print "*Yes*" if they can change their handles to fulfill all of their requests subject to the conditions; print "*No*" otherwise.

Sample Input 0

```
2
b m
m d
```

Sample Output 0

```
Yes
```

Explanation 0

- The 1st user with a current handle b wants to change it to m.
- The 2nd user with a current handle m wants to change it to d.

First, you change the 2nd user's handle from *m* to *d*; then you change the 1st user's handle from *b* to *m*. This way, you can achieve the objective.
Note that you cannot change the 1st user's handle to *m* at first, because it is used by the 2nd user at that point.

Sample Input 1

```
3
a b
b c
c a
```

Sample Output 1

```
No
```

Explanation 1

- The 1st user with a current handle *a* wants to change it to *b*.
- The 2nd user with a current handle *b* wants to change it to *c*.
- The 3rd user with a current handle *c* wants to change it to *a*.

We cannot change their handles subject to the conditions.