


Swap to Sort

Problem ID: swaptosort**CPU Time limit:** 2 seconds**Memory limit:** 1024 MB**Difficulty:** 3.9**Author:** Syx Pek**Source:** ICPC SG Preliminary Contest 2018**License:** 

You are given an array $A[1 \dots N]$ with integers in decreasing order and a list of pairs $(a_1, b_1), (a_2, b_2), \dots, (a_K, b_K)$. You wish to sort the array A in increasing order, each turn you choose an i (i can be chosen multiple times) and swap $A[a_i]$ with $A[b_i]$. Determine whether this is possible.

Input

The first line contains two integers, representing N and K respectively ($1 \leq N, K \leq 10^6$). The following K lines each contains two integers, representing a_i and b_i respectively ($1 \leq a_i < b_i \leq N$).

Output

Output “Yes” if it is possible to sort the array in increasing order, “No” otherwise.

Sample Input 1

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

Sample Output 1

```
Yes
```

Sample Input 2

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

Sample Output 2

```
No
```