Holiday Scheduling

Problem ID: holidayscheduling

You were asked to help a hospital in Basel to schedule the shifts of their employees (doctors, nurses, cleaning staff, etc.) during the public holidays of next year. However, there are a few problems. First, some employees have *availability constraints*: they are available to work only during some of the public holidays. Second, according to the hospital policy, each employee *cannot work more than a certain number of public holidays*.

Given a list of holidays, employees, and availability constraints, can you say if it is possible to find a schedule respecting all employees' constraints and the hospital policy?

Input

The input starts with three natural numbers h, w, and c:

- h is the number of public holidays. Holidays are numbered from 0 to $h - 1$.
- w is the number of hospital employees.
- c is the maximum number of holidays that the hospital policy allows each employee to work.

The next w lines describe the holidays in which each employee is *available*. Line i starts with a natural number r, representing the number of holidays the i-th employee is available (i.e., holidays when this employee can work). This is followed by r natural numbers $m_1, \ldots, m_r$, where m_j (for some $1 \leq j \leq r$) indicates that this employee can work on public holiday m_j.

Output

If there is an assignment of employees to holidays satisfying all constraints (availability constraints and hospital policy), your program should output "`yes`". Otherwise, it should output "`no`".

Sample Input 1

```
6 2 3
4 0 1 3 4
4 1 2 4 5
```

Sample Output 1

```
yes
```

Sample Input 2

```
6 3 4
4 0 1 3 4
0
4 1 2 4 5
```

Sample Output 2

```
yes
```

Sample Input 3

```
9 4 2
5 0 1 3 4 8
5 0 4 6 2 8
3 1 5 7
4 8 3 1 5
```

Sample Output 3

```
no
```