Problem A. Binary Strings

Input file:	*standard input*
Output file:	*standard output*
Time limit:	2 seconds
Memory limit:	256 mebibytes

Given n non-empty binary strings $s_1, s_2, \ldots, s_n$ and another m non-empty binary strings $t_1, t_2, \ldots, t_m$, determine if there exists such a binary string S that:

- There exist i and j such that $1 \le i < j \le n$, and both strings s_i and s_j appear in S as substrings.
- For all i such that $1 \le i \le m$, string t_i does not appear in S as a substring.

Input

The first line contains one integer T ($1 \le T \le 10^5$) denoting the number of test cases. For each test case:

The first line contains two integers n and m ($2 \le n \le 10^5$, $1 \le m \le 10^5$).

The following n lines contain non-empty binary strings $s_1, s_2, \ldots, s_n$, one per line.

The following m lines contain non-empty binary strings $t_1, t_2, \ldots, t_m$, one per line.

For the total sums over all test cases, it is guaranteed $\sum n + \sum m \le 10^5$ and that $\sum |s_i| + \sum |t_i| \le 10^6$.

Output

For each test case, output a line containing a single string: "`Yes`" (without quotes) if such a binary string S exists, or "`No`" (without quotes) if not.

Example

standard input	*standard output*
2 3 2 100 001 010 1001 000 2 4 100 001 010 1001 000 11	Yes No

Note

For the first case, one possible string is "`0100`", where $s_1 =$ `100` and $s_3 =$ `010` appear in it, but $t_1 =$ `1001` and $t_2 =$ `000` don't appear.