

Problem B

Beautiful Scoreboard

In The 2021 ICPC Asia Hanoi Regional Contest, the final scoreboard was deemed beautiful:

- for each problem, at least one team managed to solve it,
- no team was able to solve all the problems,
- each team solved at least one problem.

The 2021 ICPC Asia Hanoi Regional Contest

Rank	Username	A	B	C	D	E	F	G	H	I	J	K	L	M	Points	Penalty
1	HCMUS-FlamingTomatoes University of Science, VNU-HCM	2 tries 1 try	12 3 tries	147 3 tries	15 3 tries	72 1 try	26 1 try	101 1 try	5 1 try	1 1 try	242 6 tries	48 1 try	7 1 try	20 1 try	11	875
2	PENDLE University of Engineering and Technology - VNU	4 tries	8 1 try	89 3 tries	19 1 try	164 1 try	39 1 try	188 1 try	22 1 try	192 1 try		139 2 tries	29 2 tries	20 1 try	11	989
3	HCMIU_ThinkingTourists Ho Chi Minh City International University		11 1 try	215 1 try	3 1 try	59 1 try	28 1 try	157 2 tries	21 1 try			100 1 try	2 1 try	38 1 try	10	654
4	HCMUS-RationalKittenS University of Science, VNU-HCM		13 1 try	253 1 try	4 1 try	182 5 tries	26 1 try	191 1 try	19 1 try			139 6 tries	8 1 try	76 1 try	10	1091
5	Meld University of Engineering and Technology - VNU	229 4 tries	16 1 try	1 try	10 2 tries	159 3 tries	31 1 try	217 4 tries	23 1 try	4 tries		89 4 tries	13 1 try	71 1 try	10	1098

Figure B.1: Top 5 of The 2021 ICPC Asia Hanoi Regional

Vietnamese ICPC judges strive to design a problemset that results in a beautiful final scoreboard. Your task is to determine whether a given final scoreboard is beautiful.

Input

The first line of the input contains a single integer t ($1 \leq t \leq 100$) – the number of test cases. t test cases follow, each is presented as below:

- The first line contains two integers n and m ($1 \leq n \leq 100, 1 \leq m \leq 20$) – the number of teams participated in the competition and the number of problems, respectively.
- In the next n lines, each contains exactly m integers representing one row in the final scoreboard. A 0 indicates that the team did not solve the problem, and a 1 indicates that the team successfully solved the problem.

It is guaranteed that in the scoreboard, if team A appears before team B , then team A must solve at least as many problems as team B .

Output

For each test case, print YES if the scoreboard is beautiful according to the given criteria. Otherwise, print NO.

Sample Explanation

The sample input contains top 5 of The 2021 ICPC Asia Hanoi Regional, shown in figure 1.

Sample Input 1

Sample Output 1

1	YES
5 13	
0 1 1 1 1 1 1 1 0 1 1 1 1	
0 1 1 1 1 1 1 1 1 0 1 1 1	
0 1 1 1 1 1 1 1 0 0 1 1 1	
0 1 1 1 1 1 1 1 0 0 1 1 1	
1 1 0 1 1 1 1 1 0 0 1 1 1	