Finding true twins

In every university there is a group of N students that like to run parties, and there are M friendships among the students. Friendship among the students is reciprocal: if A is friend with B then B is also friend with A. Hence the pairs A,B and B,A count as a single friendship. Every Saturday evening one of the students would invite all his/her friends to his home. At some universities it was observed that there are two students A, B which are always invited together or not invited at all at every party run by the other students. Such students are called *twins*. When the twins are friends they are called *true twins* and when they are not friends they are called *false twins*.

Input

The first line of the input contains an integer **T** – the amount of test cases. Then **T** test descriptions follow. The first line of each test consists of two integers **N** and **M** separated with a space. Then **M** lines follow, each containing two integers **A** and **B** separated with a space, describing friendships. No testcase will contain twice the same friendship **A, B**.

The limits are 1≤**T**≤10, 1≤**N**≤10000, 0≤**M**≤100050, 1≤**A**<**B**≤**N**.

Output

For each test case, output a line

Case #**X**: **Y**

where **X** is the test case number, starting from 1, and **Y** is either the string "No twins" without the quotes if there are no true twins, otherwise it is the string "**A B**" where **A, B** is the lexicographical smallest true twin pair.

Example

Input:
2
6 8
1 2
1 4
1 5
2 3
2 4
3 4
3 6
5 6
6 7
1 2
1 4
1 5
2 3
3 4
3 6
5 6

Output:
Case #1: 2 4
Case #2: No twins