

Beautiful Graph Problem

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You are given a Graph G with n vertices and m edges. A graph G is beautiful if it does not contain any vertex of degree 1. You can have multiple passes until the graph becomes beautiful. In a single pass, you can delete only vertices of degree 1. Your task is to find the minimum number of passes in order to make the graph beautiful.

Note: Graph $m{G}$ may disconnected.

Input Format

First line contains integer ${m t}$ denoting number of test cases.

In each test case, first line contains integer \boldsymbol{n} and \boldsymbol{m} denoting number of vertices and number of edges. Next \boldsymbol{m} lines contains \boldsymbol{x} and \boldsymbol{y} denoting an edge between vertices $m{x}$ and $m{y}$.

Constraints

- $1 \le t \le 16$
- $1 \le n \le 10^5$
- $1 \leq m \leq min(\frac{n(n-1)}{2}, 10^5)$

Output Format

For each testcase, print one line containing one integer representing the minimum number of passes in order to make the graph beautiful.

Sample Input 0

- 2 3 3 4 4 5

Sample Output 0

2

Explanation 0

Initially, graph is like 1-2-3-4-5.

In first iteration, delete vertices 1 and 5 . So, graph becomes 2-3-4 .

In second iteration, delete vertices 2 and 4 . So now graph consist of only vertice 3 .

Since, it took us 2 iteration to get rid of all vertices of degree 1, answer is 2.

Sample Input 1

- Sample Output 1

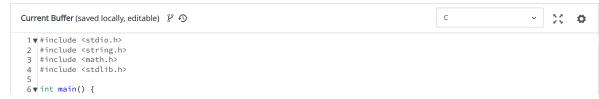
1

Explanation 1

Initially, graph has 2 components, 1---2 and 3. In first iteration, we delete vertices 1 and 2. So now graph has oly one vertice 3. So, now, it has become beautiful.

Submissions: 63 Max Score: 100 Difficulty: Medium Rate This Challenge: $\triangle \triangle \triangle \triangle \triangle \triangle$

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