Problem G. Classical Graph Theory Problem

Input file:	*standard input*
Output file:	*standard output*
Time limit:	4 seconds
Memory limit:	512 mebibytes

Let $G = (V, E)$ be a connected undirected graph.

A set of vertices S is called a *dominating set* if every vertex $v \in V$ either belongs to S, or has a neighbor in S.

A vertex v is called a *leaf* if it has exactly one neighbor.

Graph G satisfies the following property: every vertex has at most two neighboring leaves.

Find a set $S \subset V$ such that:

- S is a dominating set in G;
- $V \setminus S$ is a dominating set in G;
- $|S| = \lfloor \frac{|V|}{2} \rfloor$.

It is guaranteed that such a set always exists.

Input

Each test contains multiple test cases. The first line contains the number of test cases t ($1 \le t \le 10^4$). The description of the test cases follows.

The first line of each test case contains two integers n and m, denoting the number of vertices and the number of edges in G ($2 \le n \le 2 \cdot 10^5$; $1 \le m \le 5 \cdot 10^5$).

Each of the next m lines contains two integers x_i and y_i, denoting the endpoints of the i-th edge ($1 \le x_i, y_i \le n$; $x_i \ne y_i$). The graph does not contain loops or multiple edges. Every vertex has at most two neighboring leaves.

It is guaranteed that the sum of n over all test cases does not exceed $2 \cdot 10^5$, and the sum of m over all test cases does not exceed $5 \cdot 10^5$.

Output

Print $\lfloor \frac{n}{2} \rfloor$ distinct integers $s_1, s_2, \ldots, s_{\lfloor n/2 \rfloor}$, denoting the vertices belonging to S in any order ($1 \le s_i \le n$).

If there are multiple solutions, print any of them.

Example

standard input	*standard output*
2 6 7 1 2 1 3 2 3 3 4 4 5 4 6 5 6 3 2 1 2 2 3	2 3 6 2