GRL_3_C For beginners

Strongly Connected Components

Time Limit : 1 sec, Memory Limit : 131072 KB

English / Japanese

Strongly Connected Components

> A direced graph is strongly connected if every two nodes are reachable from each other. In a strongly connected component of a directed graph, every two nodes of the component are mutually reachable.

Input

> A directed graph $G(V, E)$ and a sequence of queries where each query contains a pair of nodes u and v.

$|V|$ $|E|$
s_0 t_0
s_1 t_1
:
$s_{|E|-1}$ $t_{|E|-1}$
Q
u_0 v_0
u_1 v_1
:
u_{Q-1} v_{Q-1}

> $|V|$ is the number of nodes and $|E|$ is the number of edges in the graph. The graph nodes are named with the numbers 0, 1,..., $|V|$-1 respectively.

> s_i and t_i represent source and target nodes of i-th edge (directed).

> u_i and v_i represent a pair of nodes given as the i-th query.

Output

> For each query, pinrt "1" if the given nodes belong to the same strongly connected component, "0" otherwise.

Constraints

- 1 ≤ $|V|$ ≤ 10,000
- 0 ≤ $|E|$ ≤ 30,000
- 1 ≤ Q ≤ 100,000

Sample Input 1

```
5 6
0 1
1 0
1 2
2 4
4 3
3 2
4
0 1
```

```
3 4
```

Sample Output 1

```
1
0
1
1
```

Source: https://onlinejudge.u-aizu.ac.jp/problems/GRL_3_C