

Contest Duration: 2025-12-06(Sat) 23:00 (<http://www.timeanddate.com/worldclock/fixedtime.html?iso=20251206T2100&p1=248>) - 2025-12-07(Sun) 00:40 (<http://www.timeanddate.com/worldclock/fixedtime.html?iso=20251206T2240&p1=248>) (local time) (100 minutes)

[Back to Home \(/home\)](/home)

[🏠 Top \(/contests/abc435\)](/contests/abc435)

[📋 Tasks \(/contests/abc435/tasks\)](/contests/abc435/tasks)

[❓ Clarifications \(/contests/abc435/clarifications\)](/contests/abc435/clarifications)

[📊 Results ▼](#)

[🏆 Standings \(/contests/abc435/standings\)](/contests/abc435/standings)

[🏆 Virtual Standings \(/contests/abc435/standings/virtual\)](/contests/abc435/standings/virtual)

[📖 Editorial \(/contests/abc435/editorial\)](/contests/abc435/editorial)

[💬 Discuss \(https://codeforces.com/blog/entry/148970\)](https://codeforces.com/blog/entry/148970)



## D - Reachability Query 2

[Editorial \(/contests/abc435/tasks/abc435\\_d/editorial\)](/contests/abc435/tasks/abc435_d/editorial)



Time Limit: 3 sec / Memory Limit: 1024 MiB

Score : 425 points

### Problem Statement

You are given a directed graph with  $N$  vertices and  $M$  edges.

The vertices are numbered from 1 to  $N$ , and the  $i$ -th edge is a directed edge from vertex  $X_i$  to vertex  $Y_i$ .

Initially, all vertices are white.

Process  $Q$  queries in order. Each query is of one of the following two types:

- 1  $v$ : Color vertex  $v$  black.
- 2  $v$ : Determine whether it is possible to reach a black vertex by following edges from vertex  $v$ .

### Constraints

- $1 \leq N \leq 3 \times 10^5$
- $0 \leq M \leq 3 \times 10^5$
- $1 \leq Q \leq 3 \times 10^5$
- $1 \leq X_i, Y_i \leq N$
- There are no self-loops, that is,  $X_i \neq Y_i$ .
- There are no multiple edges, that is,  $(X_i, Y_i)$  are distinct.
- In queries,  $1 \leq v \leq N$ .
- All input values are integers.

2026-01-02 (Fri)

05:34:18 +11:00

## Input

The input is given from Standard Input in the following format:

```
 $N$   $M$   
 $X_1$   $Y_1$   
 $\vdots$   
 $X_M$   $Y_M$   
 $Q$   
query1  
 $\vdots$   
query $Q$ 
```

query <sub>$i$</sub>  represents the  $i$ -th query and is given in one of the following formats:

```
1  $v$ 
```

```
2  $v$ 
```

## Output

Let  $q$  be the number of queries of the second type. Output  $q$  lines.

The  $i$ -th line should contain Yes if a black vertex is reachable in the  $i$ -th query of the second type, and No otherwise.

## Sample Input 1

[Copy](#)

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

[Copy](#)

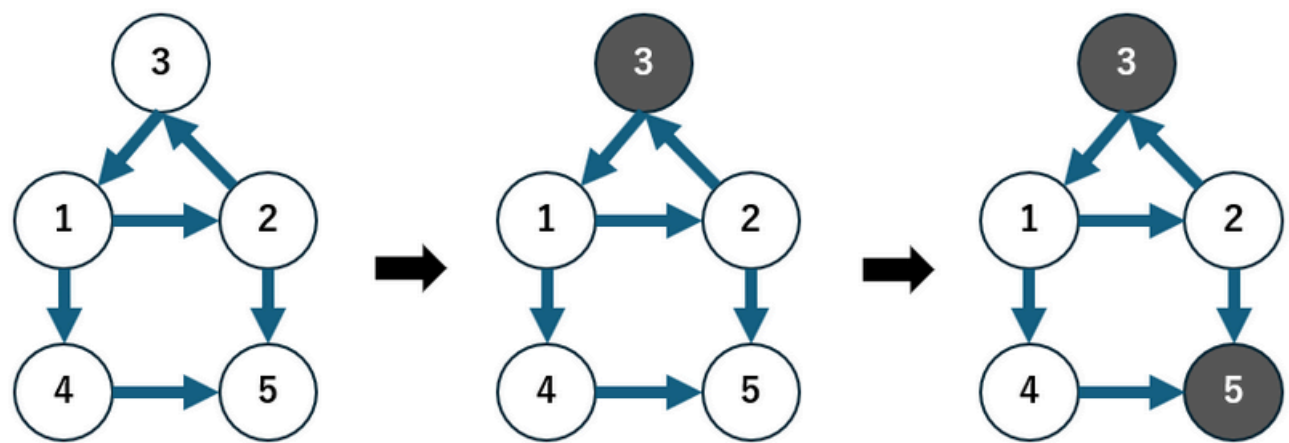
# Sample Output 1

Copy

Yes  
No  
Yes

Copy

- Initially, the given graph is as shown in the leftmost figure below.
- By the first query, vertex 3 becomes black, as shown in the center figure.
- In the second query, it is possible to reach black vertex 3 from vertex 1.
- In the third query, it is not possible to reach a black vertex from vertex 4.
- By the fourth query, vertex 5 becomes black, as shown in the rightmost figure.
- In the fifth query, it is possible to reach black vertex 5 from vertex 4.



#telegram)

url=https%3A%2F%2Fatcoder.jp%2Fcontests%2Fabc435%2Ftasks%2Fabc435\_d%3Flang%3Den&title=D%20-

[Rule \(/contests/abc435/rules\)](#) [Glossary \(/contests/abc435/glossary\)](#)

[Terms of service \(/tos\)](#) [Privacy Policy \(/privacy\)](#) [Information Protection Policy \(/personal\)](#) [Company \(/company\)](#)  
[FAQ \(/faq\)](#) [Contact \(/contact\)](#)

Copyright Since 2012 ©AtCoder Inc. (<http://atcoder.co.jp>) All rights reserved.