



Hello, 2024101067.

Paths, Paths, Paths

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C, C++

Problem Statement

A country has n cities numbered from 1 to n and has m roads numbered from 1 to m . Using Road i , you can travel from City u_i to v_i , or **vice versa** in **one hour**.

Your task is to find **how many** paths are there in which you can get from City 1 to City n **as early as possible**. Since these values can be very large, print the value for each city after modulo with $10^9 + 7$.

Input Format

The first line of input contains two integers n and m denoting the number of cities and the number of roads respectively.

Each of the next m lines contains two integers u_i and v_i , representing a road between these two cities.

Constraints

$$2 \leq n \leq 200,000$$

$$0 \leq m \leq 200,000$$

$$1 \leq u_i < v_i \leq n$$

Note: The pairs (u_i, v_i) are distinct.

Output Format

Print a single integer representing the answer. If is impossible to get from City 1 to City n , print 0.



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

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Output:

```
2
```

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Explanation:

The shortest time needed to get from City 1 to City 4 is 2 hours, which is achieved by two paths: 1 -> 2 -> 4 and 1 -> 3 -> 4

Sample Test Case 1:

Input:

```
4 3
1 3
2 3
2 4
```

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Output:

```
1
```

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Explanation:

The shortest time needed to get from City 1 to City 4 is 3 hours, which is achieved by one path: 1 -> 3 -> 2 -> 4

Sample Test Case 2:

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2 0

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Output:

0

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Explanation:

It is impossible to get from City 1 to City 2, in which case you should print 0

Sample Test Case 3:

Input:

```
7 8
1 3
1 4
2 3
2 4
2 5
2 6
5 7
6 7
```

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Output:

4

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? Clarifications

[Request clarification](#)

No clarifications have been made at this time.