

1. Coding Assignment: *"Friendship Network Tracker"*

Problem Statement

You are asked to design a system that keeps track of friendships in a growing online community. Users can become friends, and you need to support queries like *"Are A and B connected (directly or indirectly)?"* and *"How many people are in A's friend circle?"*.

The system should be able to process the following operations efficiently:

1. **AddFriend X Y** → Record that user X and Y are now friends (friendship is bidirectional).
2. **AreConnected X Y** → Answer whether X and Y are in the same connected friend circle.
3. **CircleSize X** → Output the number of people in the friend circle containing X.

Input Format

- The first line contains two integers:
N = number of users (labeled 1..N),
Q = number of queries.
- Next Q lines: each line is one of the above operations.

Output Format

- For each AreConnected X Y, print **YES** or **NO**.
- For each CircleSize X, print the size as an integer.

Example Input

6 7

AddFriend 1 2

AddFriend 2 3

AreConnected 1 3

CircleSize 2

AddFriend 4 5

AreConnected 1 5

CircleSize 4

Example Output

YES

3

NO

2

2. Coding assignment: Implement Maze problem discusses in the class