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**Jumps in pairs****S97190\_en**

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Given an undirected graph and two vertices  $s$  and  $t$ , compute the minimum number of jumps needed to go from  $s$  to  $t$ . Here, we say that a jump between two vertices  $x$  and  $z$  is possible if there is a vertex  $y$  adjacent to both  $x$  and  $z$ .

**Input**

Input consists of several graphs. Every case begins with  $n$ ,  $m$ ,  $s$  and  $t$ , followed by  $m$  pairs  $x\ y$ , with  $x \neq y$ , indicating an edge between  $x$  and  $y$ . Suppose  $2 \leq n \leq 10^5$ ,  $0 \leq m \leq 5n$ ,  $s \neq t$ , that the vertices are numbered between 0 and  $n - 1$ , and that there are no repeated edges.

**Output**

For each graph, print the minimum number of jumps to go from  $s$  to  $t$ . If it is impossible, print "NO".

**Observation**

Even if a green light is obtained, only  $\Theta(n + m)$  solutions will receive the maximum score.

**Sample input**

```
3 2 1 2
1 0 2 1

4 4 3 2
0 1 1 2 2 0 3 0

2 1 0 1
0 1

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

**Sample output**

```
NO
1
NO
2
```

**Problem information**

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