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# Bridge Game 1

Problem    Submissions    Leaderboard

You are given an undirected graph with $n$ vertices and $m$ edges. The graph does not contain multiple edges between two vertices.

Two friends X and Y are playing a game with this graph. A person can choose an edge randomly and remove it. He can only select the edges which generate two sets of non-empty connected components when deleted. If the number of vertices in the two sets of non-empty connected components created are even, then X wins, otherwise Y wins. If such an edge is not present in the graph, then the probability of winning can be 0 for both X and Y.

Your task is to find the probability of winning for X and Y. The probability is of the form $P/Q$ where P and Q are both coprime (HCF(P,Q)=1). Print $PQ^{-1} \mod (10^9 + 7)$.

### Input Format

- The first line of the input contains two space-separated integers $n$ and $m$ denoting the number of vertices and edges.

- The next $m$ lines contain two space-separated integers $u$ and $v$ denoting an edge between vertex $u$ and vertex $v$.

### Constraints

$1 \le n, m \le 10^5$

### Output Format

Print two space-separated integers that denote the probability of winning for X and Y respectively.

### Sample Input 0

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

### Sample Output 0

```
0 1
```

f    y    in

Contest ends in 2 hours

Submissions: 34
Max Score: 100
Difficulty: Medium

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C++14

```cpp
1  #include <map>
2  #include <set>
3  #include <list>
4  #include <cmath>
5  #include <ctime>
6  #include <deque>
7  #include <queue>
8  #include <stack>
9  #include <string>
10 #include <bitset>
11 #include <cstdio>
12 #include <limits>
13 #include <vector>
14 #include <climits>
15 #include <cstring>
16 #include <cstdlib>
17 #include <fstream>
18 #include <numeric>
19 #include <sstream>
20 #include <iostream>
21 #include <algorithm>
22 #include <unordered_map>
23
24 using namespace std;
25 int main() {
26     /* Enter your code here. Read input from STDIN. Print output to STDOUT */
27     return 0;
28 }
```

Line: 1 Col: 1

⬆ Upload Code as File          ☐ Test against custom input                    Run Code          Submit Code