

Lab Exam 2

D. Road Network

Time limit : 2 sec
Memory Limit : 256 MB

Problem Statement

There are N cities, numbered from 1 to N , and M bidirectional roads connecting them. It is possible to reach any city from any other city, using a sequence of roads.

You are supposed to pick a subset S of cities. Then you destroy all the cities that are not in S . After that, S should satisfy the following:

1. S has at least 2 cities in it.
2. It is possible to travel between any two cities in S , without going through any destroyed city.
3. The shortest distance between any two cities in S cannot be larger than $R - K$, where R is the size of S , and K is a fixed number (given as input).

Input

The first line of input contains three integers N , M , K ($1 \leq N \leq 5000, N - 1 \leq M \leq \min(\frac{N(N-1)}{2}, 30000), 1 \leq K \leq N$).

Each of the next M lines contains 2 integers u and v indicating that there is a road between u and v .

There can be at most one road between a pair of cities.

There is always a path between any pair of cities.

Output

If there is no valid subset of cities, print 0.

Otherwise, print the number of cities in the subset in the first line.

Then, print the picked cities, in the next line, separated by spaces.

If there are multiple answers, print any of them. The cities can be printed in any order.

Sample Input 1

```
7 9 3
1 3
1 4
1 5
2 5
3 4
6 3
6 1
4 6
1 7
```

Sample output 1

4
1 3 4 6

Sample Input 2

5 4 3
1 3
1 2
3 4
3 5

Sample output 2

0