## Problem K

Boomerangs

Let $G = (V, E)$ be a simple undirected graph with N vertices and M edges, where $V = \{1, \ldots, N\}$. A tuple $\langle u, v, w \rangle$ is called as boomerang in G if and only if $\{(u, v), (v, w)\} \subseteq E$ and $u \neq w$; in other words, a boomerang consists of two edges which share a common vertex.

Given G, your task is to find as many disjoint boomerangs as possible in G. A set S contains disjoint boomerangs if and only if each edge in G only appears at most once (in one boomerang) in S. You may output any valid disjoint boomerangs, but the number of disjoint boomerangs should be maximum.

For example, consider a graph $G = (V, E)$ of $N = 5$ vertices and $M = 7$ edges where $E = \{(1, 2), (1, 4), (2, 3), (2, 4), (2, 5), (3, 4), (3, 5)\}$.
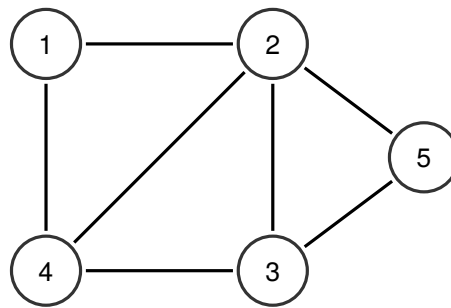
The maximum number of disjoint boomerangs in this example graph is 3. One example set containing the 3 disjoint boomerangs is $\{\langle 4, 1, 2 \rangle, \langle 4, 3, 2 \rangle, \langle 2, 5, 3 \rangle\}$; no set can contain more than 3 disjoint boomerangs in this example.

Input

Input begins with a line containing two integers: N M ($1 \leq N, M \leq 100000$), representing the number of vertices and the number edges in G, respectively. The next M lines, each contains two integers: u_i v_i ($1 \leq u_i < v_i \leq N$), representing the edge (u_i, v_i) in G. You may safely assume that each edge appears at most once in the given list.

Output

The first line of output contains an integer: K, representing the maximum number of disjoint boomerangs in G. The next K lines, each contains three integers: u v w (each separated by a single space), representing a boomerang $\langle u, v, w \rangle$. All boomerangs in the output should be disjoint. If there is more than one valid solution, you can output any of them.

Sample Input #1

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

Sample Output #1

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

Sample Input #2

```
4 6
1 2
1 3
1 4
2 3
2 4
3 4
```

Sample Output #2

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

Sample Input #3

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

Sample Output #3

```
1
2 1 3
```