The Bacteria

The first proof of alien life is here! The scientists have identified the first bacterial life form from Mars. The bacteria were similar to our *coccus* bacteria and thus they were named *stoflococcus*. A colony of stoflococcus bacteria always has the form of a simple chain of bacteria. Sometimes the ends of the chain may be connected, thus forming a cycle instead. Colonies of stoflococcus bacteria never grow in any other shape. Specifically, note that a stoflococcus colony must always contain more than one bacterium.

We are given a description of a bacteria sample obtained in a NASA laboratory. Decide whether the sample may be a valid stoflococcus sample. A valid stoflococcus sample must consist of one or multiple colonies, without any other bacteria.

Input

The first line of the input contains two integers N and M ($1 \leq N, 0 \leq M$) – the number of bacteria in the sample and the number of pairs of bacteria that are adjacent. The bacteria are numbered 0 through $N - 1$.

Each of the following M lines contain two integers a_i and b_i ($0 \leq a_i, b_i < N, a_i \neq b_i$) denoting that the bacteria a_i and b_i are neighbors in a colony. Each pair of adjacent bacteria is given exactly once.

Output

If each colony described in the input is either a simple chain or a simple cycle, output a single line with string "`stoflococcus`". Otherwise, output a single line with the string "`other`".

Limits

There are four test groups, each of which is worth 25 points.

- In test group 1 $N \leq 10, M \leq 100$
- In test group 2 $N \leq 100, M \leq 1\,000$
- In test group 3 $N \leq 1\,000, M \leq 10\,000$
- In test group 4 $N \leq 10\,000, M \leq 100\,000$

Examples

Input	Output
6 5 0 1 1 2 2 0 3 4 4 5	stoflococcus

The above sample consists of two colonies, one of them being a cycle and the other one a chain.

Input	Output
8 5 0 1 1 2 2 0 0 3 4 7	other

The above sample consists of four colonies. Only one of those can be a stoflococcus colony – the one containing bacteria 4 and 7.