In today's world, many business firms directly or indirectly own shares of other business firms. It has benefits, such as reducing transaction costs and increasing trust, but this type of structure can weaken market competition. A business analyst is trying to find the sets of firms where every member of the set directly or indirectly owns shares of every other member of the set.

The first line of input contains *n*, the number of firms.

The next line of input contains *s*, the number of incidents of share owning.

Each of the next *s* lines contains two integers *f1* and *f2* ($1 \leq f1, f2 \leq n$) indicating that firm *f1* owns shares of firm *f2*.

Print all the sets of firms (one set in a line) where every member of the set directly or indirectly owns shares of every other member of the set.