Military Institute of Science and Technology
Department of Computer Science and Technology
CSE-18, Level-2, Term-II
CSE-216, Data Structures and Algorithms Sessional-II
Class Evaluation-2

Time: 40mins **Marks: 10**

Problem:
In nature, there are alimentary chains. At the basis of this chain, we generally have the vegetals. Small animals eat those vegetals and bigger animals eat the smaller. There can be cycles in the chain, as when some animal dies he starts a decomposition process which will transform its body into minerals that are a source of energy for the vegetals.

In this problem you will have to find the largest alimentary chain for a given group of creatures. You can consider that if A is predator of B then they are in the same chain.

Input
The input starts with two integers C, the number of creatures, and R, the number of relations. Follow C lines with the names of the creatures, each consisting of lower case. Then there will be R lines describing the relations. Each line will have 2 names of creatures, meaning that the second creature is a predator of the first one. Input is terminated by a set where C=R= 0. This set should not be processed.

Output
For each input set produce one line of output, the size of the largest alimentary chain

SAMPLE INPUT	**SAMPLE OUTPUT**
5 2 caterpillar bird horse elephant herb herb caterpillar caterpillar bird	3