beecrowd | 1082

Connected Components

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Timelimit: 1

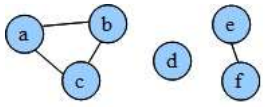
Based on these three definitions:

Connected graph: A graph ***G (V, E)*** is connected if for each pair of nodes u and v there is a path between u and v. A graph with only one component is a connected graph.

Disconnected graph: A graph ***G (V, E)*** is disconnected if it is formed by two or more connected components.

Connected component: Connected components of a graph are connected subgraphs of this graph.

The following graph has 3 connected components. The first one is formed by nodes **a**, **b**, **c**. The second one is formed only by d node and the third component is formed by nodes **e** and **f**.



Based on these concepts, where each input has identification of each one of the vertices, edges and the links between the nodes by the edges, list all connected components that exist in the graph, according to the given input.

Input

The first line of input file contains an integer **N** that represents the number of

each one representing one of the edges that connect s... is represented by a lowercase letter of the alphabet. This mean 26 vertex at maximum (*a-z*). Each graph has at least one connected component.

Obs: The vertex of each test case always begin with 'a'. This mean that a test case with 3 vertex has the vertex 'a', 'b' and 'c'.

Output

For each test case, print the message ***Case #n:*** indicating the number of test case (as shown below). Follow the vertex of each segment, a segment per line, separated by commas (including a comma at the end of the line). Finishing the test case a message must be printed indicating the number of connected components of the graph. Every test case must have a blank line printed at the end, including the last one.

Important: the vertices must be printed in ascending order and if exist path from a to b means that exist path from b to a.

Input Sample	Output Sample
3 3 1 a c 10 10 a b a c a g b c c g e d d f	Case #1: a,c, b, 2 connected components Case #2: a,b,c,g, d,e,f, h,i,j, 3 connected components

PROBLEM 1082

LANGUAGE C99

SOURCE CODE

```c
#include <stdio.h>

int main() {

    /**
     * Escreva a sua solução aqui
     * Code your solution here
     * Escriba su solución aquí
     */

    return 0;
}
```