

Southeastern European Regional Programming Contest
Bucharest, Romania – Vinnytsya, Ukraine
October 17, 2015

Problem G
Race

Input File: G.in
Output File: standard output
Time Limit: 2 seconds (C/C++)
Memory Limit: 256 megabytes

Bob is member of the organizing committee of the annual motorcycling race. His job is to label the contest map. All the roads of the map are bidirectional and connect two places. Each place on the map must be labeled ***regular*** or ***service***, such that no place has more than ***max*** neighbors of its own label. Let's define ***degree*** the maximum number of roads reaching a place. Then ***max* = *degree*** / **2**. Your job is to help Bob.

The input file starts with the number ***n*** **(**0<***n***<1001**)** of places on the map, on a separate line. Each place is identified by a natural number from **0** to ***n* - 1**. Then follows ***n*** lines containing the description of places, each on a separate line. Line ***i***, ***i*** = **0**,.., ***n*-1**, describing place ***i***, has the following form:

***number_of_neighbors: neighbor*$_1$ *neighbor*$_2$ *... neighbor*$_m$**

The ouput file must contain the labeled map. The format is the same except that each line describing a place starts with the label of the place: `0` for regular places and `1` for service places.

***label number_of_neighbors: neighbor*$_1$ *neighbor*$_2$ *... neighbor*$_m$**

The sample describes a map with 3 places that are all connected. The first line of the input contains the number of places. The following lines contain the description of places. For example the line `2: 1 2` stands for the place identified by `0`, that has `2` neighbors identified as `1` and `2`. In the output file the line `1 2: 1 2` stands for the place `0` that has label `1`.

Sample input	Sample output
3 2: 1 2 2: 0 2 2: 0 1	3 1 2: 1 2 0 2: 0 2 0 2: 0 1