CS 591 Report

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Program a, at first I should load two txt files and change the format of the data. I use the matrix to describe the graph, the matrix is n-by-n. So the value n is number of the nodes, and in the matrix if the element a[i,j] is 1, it means that there is an edge between the node i and the node j. like that:

```
def matrix(node,edge):
```

Before compute the g-function, we should compute the number of edges which are connected with the same node.

Then define the confuse function which is used to judge the mark of each point.

```
def confusion(M,node,tab):
```

In my program the min label is one not zero, so the real result should minus one.

In the program b , I use some part of the program a, for each number I use a function compute to compute $\oplus$. It can compute all kinds of situations, and can control the operation move or Take away. Like that:

Use the Nim function and mex function to compute