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Assignment 6

Problem 1

In this assignment I used igraph in R to find out the answer for this question. In the file called *ScriptR.r*[1]

- I imported the data from `http://igraph.sourceforge.net/karate.net` and assigned it to "g" and plotted the graph as shown in (Figure 1) which representing the result of Zachary's paper [2].
- Loop on the data and find the maximum edge betweenness value by using: [max(edge.betweenness(g))].
- Find the index of the edge that has the maximum edge betweenness value and delete it from the graph by using [delete.edges(g, E(g,get.edge(g,i)))].
- When I get two clusters the while loop stops and the graph is plotted as shown in (Figure 2).

The results that I got from (Figure 2) is very close to the result's of the paper[1] where only node 3 was moved from first cluster in the paper to the second cluster in the paper.

[1] File uploaded to github

[2] Zachary, 1977, http://aris.ss.uci.edu/ lin/76.pdf

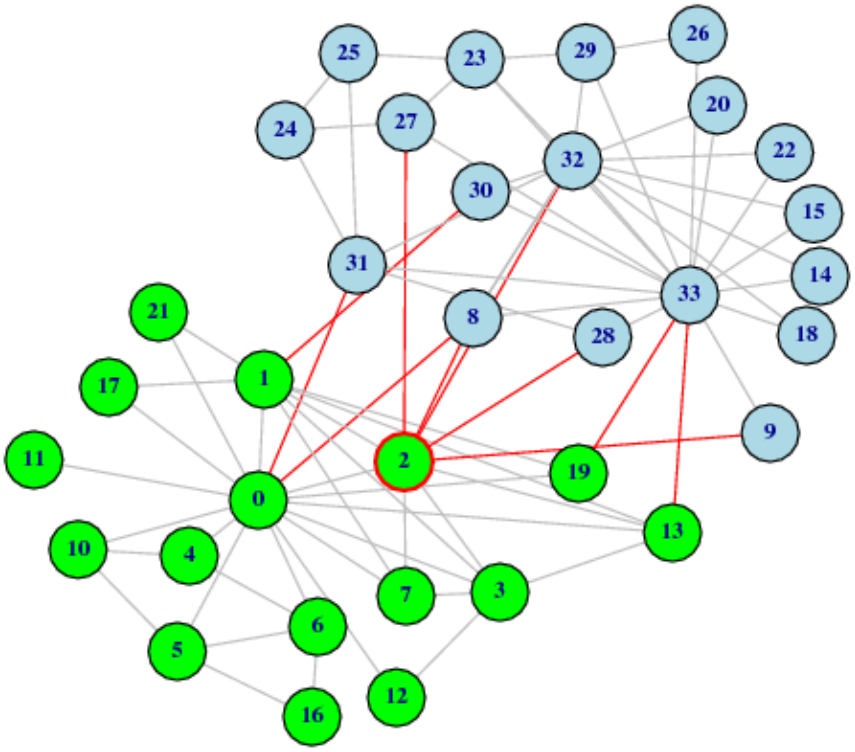

Figure 1: Community Before Splitting

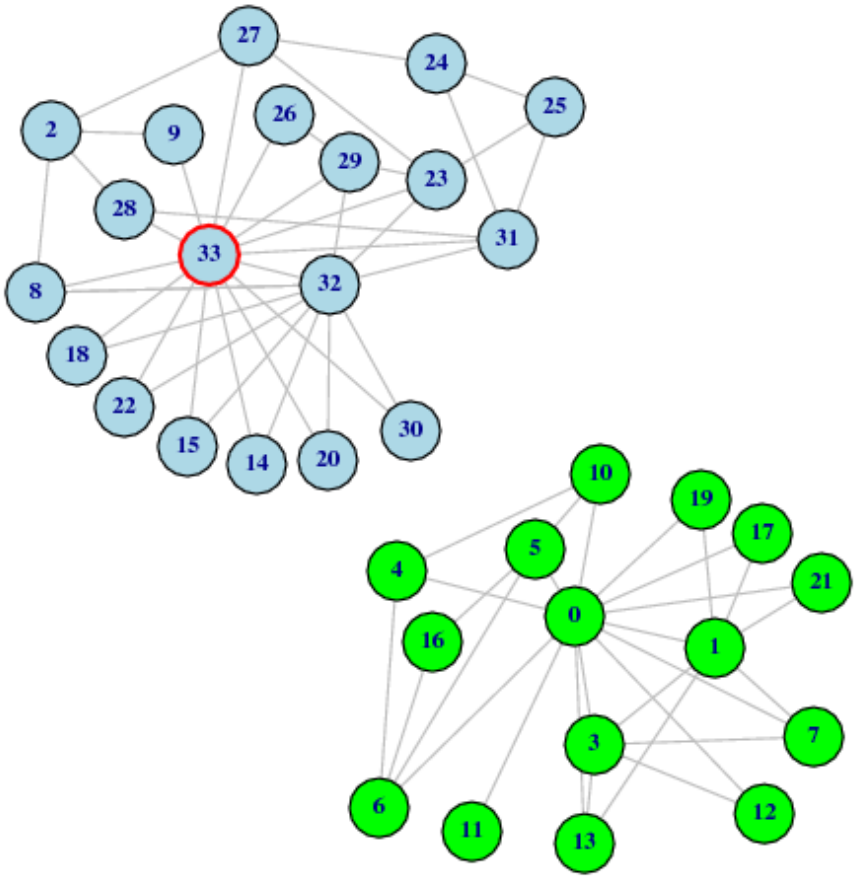

Figure 2: Community After Splitting