COMM 645, LAB 5: DUE OCTOBER 10, 2012

Please e-mail your lab to **comm645@ognyanova.net** before 2pm on Wednesday.

This lab will test your ability to work with network data and calculate basic node- and network-level measures in R. You will find the data for this exercise in a file called "Lab5-CEOs.csv". It contains a 25x16 two-mode matrix compiled by Galaskiewicz for his "CEOs & Clubs" study. The matrix describes the affiliations of 26 company CEOs with 15 clubs/organizations.

You do not need to write a report for this lab – just turn in your R script.

Your assignment consists of the following:

1. Read the "CEOs & Clubs" data into an R data frame.
2. Store the data into a directed, bipartite (two-mode) network object.
3. Compute a one-mode projection of the affiliation network: a CEO-by-CEO club co-membership network.
4. Dichotomize the affiliation network, using 2 as a threshold (keep the link between two actors only if they share more than 2 events). For steps 5 to 10, use the dichotomized network.
5. Compute the network density.
6. Compute degree and betweenness node centrality and network centralization scores.
7. Compute the network transitivity.
8. Identify cliques in the network. Add a comment in your R script briefly explaining the meaning of the results (i.e. how many cliques, what kind, where should one look for the clique co-membership scores and the list of all cliques).
9. Compute the structural similarity between nodes using product-moment correlation.
10. Plot the dichotomized network. Hide the arrows from edges. Change node size according to degree centrality. Change the node color to your favorite (R-supported) tone.
    Save the result as a PDF.

Note that you will find all you need to know in order to complete this assignment in "Comm645-RNetworks.R" and "Comm645-RIntro.R".