DMSN Coursework 2: Network analysis

The aim of this task is to make you familiar and comfortable with understanding networks, calculation of basic metrics and measures using popular software, and understanding the differences between networks.

You will use two datasets:

Dataset I: Use a network of your choice, or download one of the datasets from http://konect.uni-koblenz.de/ or http://snap.stanford.edu/data/. Use a dataset which had more than 100s of nodes.

Dataset II: Generate a random (ER) graph from the same number of nodes.

For both networks, Plot/Calculate and Analyse:

1: degree distribution
2: clustering coefficient
3: modularity
4: centrality (any measure of your choice)

using R/Matlab/UCINET/etc.

This assignment will consist of analysis of the two dataset and their network characteristics, according to the indicated network measures. You can use other measures in addition to the above if needed. The analysis can be related to, but certainly not limited to key graph characteristics of the graph (e.g. degree distribution, diameter etc.), the similarities and differences of the datasets and their communities, and the characteristics of important (central) nodes in the network.

The analysis should be reported in a pdf document of up to 1,000 words (and as many figures as needed) where the results are commented and justified.