Please upload your solutions to Ilias. Deadline: 08th December 23.55 pm

Exercise 4

1) For this task you will look at different quality criteria for network visualisation and their dependency on clusters in the visualisations. Please use OGDF for this task. Please also upload your c++ code. Please use the 20 clustered networks you generated for the last exercise.
    a. For all 20 clustered networks: Calculate, report and compare the following parameters for each cluster of each network.

        i. Number of connected components
        ii. Modularity

2) In the last lecture, the Sugiyama framework for visualisation of networks was presented. For this task, you will do an experimental evaluation of heuristics within the Sugiyama framework. Choose two heuristics for layering and two for crossing minimisation (https://ogdf.github.io/doc/ogdf-snapshot/group__gd-layered.html). Evaluate the performance with the usual reports (at least: running time, drawing width and height, crossing number, …) for each graphml file in the NW_task2 directory. They are part of the AT&T or so-called North graphs (http://www.graphdrawing.org/data.html). Report the performances appropriately and describe how do the different performance measurements change dependent on graph characteristics and chosen heuristics. Please upload your c++ code, as well as images to illustrate differences. The images should show the differences for the different heuristics for one smaller (10 nodes, 4 images) and one large graph (100 nodes, 4 images). Shortly (!!!) describe the differences.

20 points