Please upload your solutions to Ilias. Deadline: 1st December 12.00 pm

Network Visualisation
Assignment 3

1) (6 points) This exercise aims to have you gain initial experience in experimenting with graph layouts. The goal is to have a pipeline that allows you to quickly run a computational experiment for network analysis or visualisation. You will try different layouts and report on running time and a measure of your choice.

   In ILIAS you will find eight graphs (a.k.a. the other graphs in the directory Assignment3) which have different structure and/or scale. Use two different layout methods and report the running time for each graph. Measure two quality metrics of your choice for the resulting layouts.

   To provide a solution to the exercise:
   Report the running times and quality measures for each graph/layout (in a single table) and provide the resulting layout (as an image, e.g. using the native result file of your library / tool).

   For OGDF there is a LayoutStatistics class you can use to calculate measures in case you don't want to implement some yourself. For networkx/python there is a package for metrics, gdmetrix https://livus.github.io/gdMetriX/
   You could report crossings, overlap, or bends (for orthogonal layouts) and Min/Max of angles etc. **Let me know early in case there are issues with that.**

2) (2 points) The Shape-Based quality metric presented in the lecture uses the Jaccard similarity of neighbourhood as the similarity function between original graph and shape graph.
   To provide a solution to the exercise List two further graph similarity measures and explain SHORTLY the pros and cons in the context of a shape-based quality metric (what would be better or worse than the Jaccard similarity).

3) (2 points) Identify a potential bias of the Shape-Based quality metric.
   To provide a solution to the exercise List two layout styles / methods from the ones you saw so far that you think are particularly suited / particularly bad when this metric is used without necessarily creating a bad drawing – shortly describe why you think they are well suited / not suited.