

KLay Planar

Project Overview

Related Theses:

- Ole Claußen, *Implementing an algorithm for orthogonal graph layout*, September 2010 ([pdf](#))
- Christian Kutschmar, *Planarisierung von Hypergraphen*, September 2010 ([pdf](#))
- Paul Klöse, *A generic framework for topology-shape-metrics-based layout*, October 2012 ([pdf](#))

KLay Planar encompasses planarization based layout algorithms. The main approach employed here is the *topology-shape-metrics* approach, which consists of the following phases:

1. Planar subgraph - Remove edges until the resulting subgraph is planar. The goal is to minimize the number of removed edges.
2. Edge insertion - Reinsert the previously removed edges and replace all resulting crossings by new dummy nodes. The result is a planar embedding (*topology*). The goal is to minimize the number of introduced dummy nodes.
3. Orthogonalization - Find an orthogonal form by computing a series left or right bends for each edge (*shape*). The goal is to minimize the number of bends.
4. Compaction - Determine specific coordinates for nodes and edge bend points (*metrics*). The goal is to minimize the length of edge segments.

The implementation is currently in progress...