

# Mathematics of Infrastructure Planning

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## Exercise sheet 2

Deadline: Thu, 26. April 2012, **23:59**

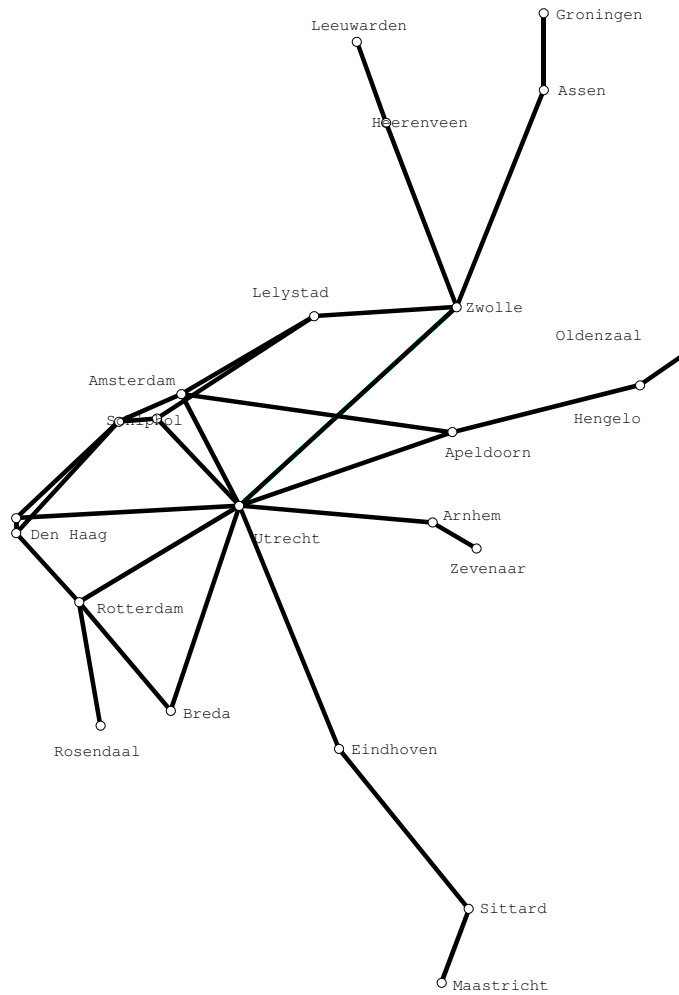
### Exercise 2.

**10 points**

Use ZIMPL to model the even degree problem of exercise 1 b) as an integer programming problem. As an additional constraint we require that every node of the graph with degree one must be contained in an edge of the solution. Every other node must have an even degree.

Test data for an instance can be found in the files `edges.dat` and `cap.dat` (see the backside for an illustration). The model file `deg-skeleton.zpl` will give you a start. All files are posted on the webpage.

Use SCIP to compute, for all possible even degrees of Utrecht, a cheapest feasible solution using your ZIMPL model. Draw all these solutions (a separate drawing for each solution). Compile the optimal objective values in a table. Send your ZIMPL file, your result table, and your solution drawings to `borndoerfer@zib.de` by the deadline.



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