Programming Exercise: Optimization in Transport and Logistics

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Opening: 06.05.2013 Exercise: 20.06.2013

Information

The programming exercise has to be done to get a positive grade. The given problem can either be solved by oneself or in groups of 2. In the case of group work each student should be responsible for a part of the exercise and must be able to explain it. The results of the exercise have to be presented on June 20, 2013 in class.

Multiple Depot VRP

The exercise is to solve the multiple depot VRP (MDVRP). In the MDVRP a given fleet is based on several depots from which a set of customers has to be served. Each vehicle originates from its depot, serves a set of customers assigned to that depot and in the end returns to the same depot. The objective is to serve all customers while minimizing the travel distance.

The given problem should be solved via a metaheuristic of your own choice. The algorithm can be implemented in whatever programming language is preferred. The aim is, that each student/group implements a metaheuristic and tests it with a given set of benchmark instances. The results can be compared against the other students results, as well as, the best known solution for the instances. Each student/group should make a short presentation about its solution methods and the results in the last class on June 20, 2013.

A detailed description about the MDVRP can be found on:
`http://neo.lcc.uma.es/radi-aeb/WebVRP//index.html?/Problem_Instances/MDVRPInstances.html`

The MDVRP benchmark instances designed by Cordeau and the best known results can be downloaded on:
`http://neo.lcc.uma.es/radi-aeb/WebVRP//index.html?/Problem_Instances/MDVRPInstances.html`