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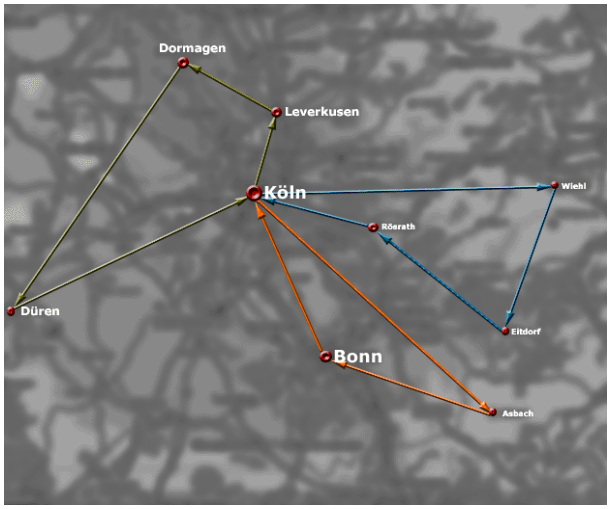
Facts Sheet - *JOpt.Transportation*

Overview



JOpt.Transportation is the enhancement kit for the J2EE component *JOpt.J2EE* or *JOpt.SDK*. This kit adds all necessary application knowledge in the field of transportation to the JOpt component. This tool is suitable for all users who want to use the JOpt optimization tools for typical dispatch tasks like tour generation and optimization.
JOpt.Transportation together with *JOpt.J2EE* or *SDK* use specialized genetic algorithms to calculate optimized allocations of given deliveries to a set of vehicles. The optimization algorithm tailored for this specific case not only calculates the tours at minimum costs but also considers an arbitrary set of constraints for each tour. The constraints are easily modifiable so that individual business processes can be represented.

In particular, *JOpt.Transportation* can solve nearly any problem in the transportation filed that can be classified by one of the follwing types:

- TSP: Travelling Salesman Problem
  JOpt.Transportation finds the shortest or fastest way for your vehicle

- VRP: Vehicle routing problem - like TSP but for a set of vehicles. *JOpt.Transportation* finds an optimal allocation of delivery jobs within a vehicle fleet. It may consider
  - maximum load capacity (volume or weight) of each vehicle
  - time constraints for loading and unloading at the delivery points
  - driver working times

Beside optimization, typical applications for the *JOpt.Transportation* component is to

- support dispatchers at planning and deploying delivery vehicle fleets
- integrate ad hoc deliveries into readily planned tours
- generate and modify frame tours
- calculate costs for each tour

JOpt.Transportation's optimization criteria may be changed in order to allow for suitable customization to specific tour planning problems. Possible modification will change default optimization goals or number and weight of constraint violations.

ERP software developer may integrate the *JOpt.Transportation* and *JOpt.J2EE* component into their solution frame in order to offer their customers a consistent solution including optimziation of transportation schedules. A seamless integration into your software ensures the look and feel of only one piece of software to your customer. Developers will use the easy integration mechanisms offered by the J2EE java frame, such as the Oracle Application Server or similar frameworks.

Highlights

- Tour optimization package as enhancement kit for the *JOpt.J2EE* base product
- Virtually unlimited number of tour stops and vehicles
- Customizable optimization and constraints properties for transportation tasks
- Customizable distance matrix, derived from arbitray sources
- Driver and working time rules
- Load capacity constraints

Proterties of the *JOpt.J2EE* or *JOpt.SDK* base product:

- Webservice interface for service oriented architectures (SOA)
- Scalable
- Flexible genetic algorithms

Interfaces and Runtime Environment

JOpt.Transportation will bring transportation knowledge to the *JOpt.J2EE and JOpt.SDK* components. Use the interfaces of the base components to interact with other services in your enterprise software architecture or in the web. These interfaces will ensure a simple and seamless integration into existing software frameworks.