ABSTRACT

Darmstadt City Distribution Vehicle Routing Planning

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The purpose of this research is to apply Capacitated Vehicle Routing Problem with Time Windows (CVRP-TW) in solving distribution problem in Darmstadt city street network which is based on real-life rules and regulations. With limited capacity of the vehicles, some costumers within the area of Darmstadt city are having demands for delivery with order volume and time limit variables. Using the time-slice to represent time-windows and Ant Colony System to optimize the solution, the result is expected to be the most optimal while considering the time limitations.

The method is applied to a web-based program using PHP – MySQL (Hypertext Preprocessor – Structured Query Language) and is able to access via internet. Geographic Information System (GIS) also has been added to visualize the solutions of the problem.

Keywords:
Graph, capacitated vehicle routing problem, real-life streets, ant colony optimization, time-window, geographic information system, hypertext preprocessor, structured query language