Abstract

Vehicle Routing Problem (VRP) is an optimization problem of the existence of some customers in a specific location that require a certain number of goods and shall be served by a number of vehicle which load capacity is limited. Multiple Depot Vehicle Routing Problem (MDVRP) is one kind of VRP. MDVRP is VRP which the condition has some depots (storehouse) to supply customer's goods. The purpose of MDVRP is to determine the optimal route in fulfilling customer's request.

In this final project, the route searching of MDVRP will be implemented using the Clarke-Wright or Saving algorithm and Simulated Annealing algorithm (SA). The instances of MDVRP that will be used is from Cordeau's instances, from website : http://neo.lcc.uma.es/radi-aeb/WebVRP/.

MDVRP will be resolved by grouping the customers to depot in advance using the Parallel Assignment algrithm. Aftar that, the route will be established for each depot using the Clarke-Wright algorithm. Simulated Annealing algorithm is used to avoid the trap of local optimum, as well as to search a better route from the Clarke-Wright algorithm's solution.

To determine the performance of the Clarke-Wright algorithm and SA algorithm, in the testing phase, the solution of these methods will be compared with the best solution ever known and the solution of Genetic Algorithm.

Keywords : Route searching, Multiple Depot Vehicle Routing Problem (MDVRP), Clarke-Wright, Simulated Annealing (SA).