Abstract

Multiple Depot Vehicle Routing Problem (MDCVRP) is one kind of Vehicle Routing Problem (VRP) which classified in optimization problem to determining routes for several vehicles from several depots to service all the customers. The problem's objective is to find a minimal cost to service all customers without violating the maximum capacity of each vehicle. Mathematically, MDCVRP is classified as combinatorial problem.

As a problem which is classified as NP-hard (non-deterministic polynomial-time hard), MDCVRP will be solved by Genetic Algorithm with optimizing by Simulated Annealing. Simulated Annealing is metaheuristic algorithm which can solve a NP-hard problem quickly with mathematics approach, so that it could get an optimum solution.

An enchanced Genetic Algorithm with Simulated Annealing is a hybrid algorithm which comprised of Genetic Algorithm and Simulated Annealing Algorithm. Determining the value of GA and SA's parameters will be observed, since they influence the optimum solution.

From the experiments that have been done, it show that Simulated Annealing are able to improving the fitness values of 1 % for all datasets.

Keyword: *Multiple Depot Vehicle Routing Problem, Vehicle Routing Problem, non-deterministic polynomial-time hard, Optimasi Genetic Algorithm dengan Simulated Annealing, Genetic Algorithm , Simulated Annealing.*