

Abstract

Capacitated Vehicle Routing Problem Time Windows (CVRPW) is one of combinatorial problem. In this problem, vehicle will be determined routes to serve customer demand with capacity and time allowed to obtain a fitness value and the shortest total distance will be determined. This problem is classified as NP-Hard problem-a hard computational effort is necessary to obtain the best solution.

This final project used harmony search algorithm which is a metaheuristic algorithm based on musical instrument's phenomenon of tone improvisation for achieving harmony. Harmony search algorithm which consists of several stages of memory consideration, pitch adjustment and random selection can be applied to the settlement for CVRPTW. Harmony search parameter that have been able to find the optimal solution is the period when the $HM = 50$, $HMCR = 0.9$ and $PAR = 0.42$.

Keywords : *Capacitated Vehicle Routing Problem Time Windows, NP-Hard, Harmony Search, metaheuristic*