Abstract

Traveling Salesman Problem (TSP) is a sequence search nearby city tour to be visited by minimizing the total cost which each city can only be visited maximum one time. For the TSP lager number case of cities and there is a limit of time to reach the destination, the method should be used is the application of heuristic algorithms.

Bee Colony Optimization (BCO) Algorithm with Frequency Based Pruning System (FBPS) and Fixed Radius Near Neighbor (FRNN) 2-Opt methodes is one of heuristic algorithm that has good performance for solving TSP cases. At this task is done the analysis of the best system parameter settings; system scalability and for the performance system-level analysis is done by do the comparison between the system output and the output of Ant Colony Optimization (ACO) algorithm. The city data testing is obtained from TSPLIB.

Based on the observations that have been made, known that by using the best parameter settings can result the shortest city tour in acceptable execution time. At the level of system scalability, the greater the processing of the city so that system accuracy of the system decreased and even harder to reach the solution precision come closer to the optimum length city tour; and in the system performance, the system accuracy and the system speed execution of BCO algorithm with FBPS,FRNN 2-Opt methodes more or less 1,0098 and 2,6 times over better than ACO algorithm

Keywords: TSP, BCO, FBPS, FRNN 2-Opt, ACO