

Abstract

Job Shop is a crucial problem of manufacture industry. The company can reduce cost of production and increase the efficiency by making a schedule with minimum completion time. But, jobshop is a combinatorial optimization problem with a large solution space and difficult to solve.

Base on those problem, the purpose of this final task is to use Ant Colony Optimization Algorithm that suitable for combinatorial problem that can give an optimum solution as the result in acceptable time. The solutions of ACO that generated randomly will be improved by Tabu Search. Beside that, tabu list on Tabu Search will help the ants to avoid bad solutions that have been generated.

The results show that ACO modified from the previous ACO model gives average accuracy above 80% for all dataset used, whereas ACO that combined with TS can give average accuracy above 90%.

Keywords: *Job Shop, Ant Colony Optimization, Tabu Search, tabu list*