

Abstract

Project management in the business and industry fields is defined as managing and directing time, material, personnel, and costs to complete a particular project. One important phase in the project planning is project resource scheduling. This process identifies resources amount and type according to the activity that scheduled. Planning the efficient use of resources is a complex task. The purpose is to create a smoother distribution of resource usage i.e. to minimize the fluctuation of the resource usage. The resource leveling is used to produce a solution to the problem.

So far, researchers test several heuristic in order to produce the optimal solutions of the problem. In this final assignment, we discuss an implementation of the Ant Colony Optimization (ACO), especially Rank Based Ant System (AS_{rank}), on the optimization of project resource scheduling. The effectiveness of this heuristic is demonstrated with case studies. Preliminary test shows that this approach can give a good solution with minimal fluctuation.

Keywords: project resource scheduling, fluctuation, resource leveling, ACO, AS_{rank}