HARMONY SEARCH FOR RESOURCE-CONSTRAINED PROJECT SCHEDULING PROBLEM

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ABSTRACT

Resource-Constrained Project Scheduling Problem (RCPSP) is the problem of scheduling activities on the project with limited resources in order to minimize the duration of the project. The problem faced in this scheduling process is the limited resources, then the level of difficulty in this scheduling will increase if there are so many activities to be scheduled and multi-resources. Therefore in this research, the experiment of using Harmony Search (HS) algorithm to solve existing problem is done.

The methodology used in this research consists of collecting data, applicating algorithm, creating program code, experimentation, and analysing of experimental results.

Based on research that has been done, it is known that the quality of HS algorithm solution is as good as the Particle Swarm Optimization (PSO) algorithm, but in term of computing time, the HS algorithm is faster than the PSO algorithm. Therefore, in term of computing time, the HS algorithm performance on solving RCPSP is better than the PSO algorithm.

Key Words : Metaheuristic, Harmony Search, Resource-Constrained Project Scheduling Problem