Abstract

The common problem of multiprocessor scheduling can be defined as allocating a task graph in a multiprocessor system so that schedule length can be improved. Task scheduling in multiprocessor system is a NP-complete problem. A number of heuristic methods have been cultivated that achieve partial solutions in less than the minimum computing time. Genetic algorithms have obtained much awareness as they are robust and provide a good solution. In this paper, genetic algorithm based on the principles of evolution to obtain an optimal solution for task scheduling is developed. Genetic algorithm is based on three operators: Natural Selection, Crossover and Mutation. The simulation results prove that the method proposed generates better results.

References

- J Weinberg, "Job Scheduling on Parallel Systems", Job Scheduling Strategies for Parallel Processing, 2002.
Technology.

- Rizos Sakellariou and Viktor Yarmolenko, "Job Scheduling on the Grid: Towards SLA-Based Scheduling",  
- Jim Blythe, Sonal Jain, Ewa Deelman, Anirban Mandal, and Ken Kennedy, "Task Scheduling Strategies for Workflow-based Applications in Grids".
Angelos Michalas, and Malamati Louta, "Adaptive Task Scheduling in Grid Computing Environments."

**Index Terms**

- Computer Science
- Algorithms

**Keywords**

- Parallel computing
- Heterogeneous system
- Task scheduling
- Task duplication
- Schedule length and Load balance