Abstract

Parallel processors problems are among the most difficult combinatorial problems to solve. In this paper we study the problem of scheduling n independent jobs on m unrelated parallel processors with the objective of minimizing the makespan. We propose a branch-and-bound algorithm for finding the optimal schedule. This algorithm depends on reducing the set of m constraints to a single diophantine equation, resulting in a knapsack problem. Computational experience indicates that most problems with 5 processors and 30 jobs can be solved in just a few seconds of computer time.

Keywords : Knapsack, Scheduling, Unrelated Parallel Processors.