



Literature Review of Single Machine Scheduling Problem with Uniform Parallel Machines

PDF (Size: 308KB) PP. 457-474 DOI: 10.4236/iim.2010.28056

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ABSTRACT

This paper presents a survey of single machine scheduling problem with uniform parallel machines. The single machine scheduling problem with uniform parallel machines consists of n jobs, each with single operation, which are to be scheduled on m parallel machines with different speeds. These parallel machines are also called proportional machines or related machines. There are several measures of performance which are to be optimized in uniform parallel machines scheduling. Since, this scheduling problem is a combinatorial problem; usage of a heuristic is inevitable to obtain solution in polynomial time. This paper gives a classification of the literatures of this scheduling problem in three major categories, viz. offline scheduling, online scheduling and miscellaneous scheduling. In total, the available literatures are classified into 17 subgroups. Under each of the first two categories, the available literatures are discussed under different groups based on different measures of performance and non-preemptive/preemptive nature of the jobs. In the last category, the literatures are discussed under three subgroups, namely non-preemptive jobs, preemptive jobs and periodic jobs.

KEYWORDS

Uniform Parallel Machines, Measure of Performance, Heuristic, Model, Competitive Ratio

Cite this paper

P. Senthilkumar and S. Narayanan, "Literature Review of Single Machine Scheduling Problem with Uniform Parallel Machines," *Intelligent Information Management*, Vol. 2 No. 8, 2010, pp. 457-474. doi: 10.4236/iim.2010.28056.

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