Job Shop Scheduling: Classification, Constraints and Objective Functions

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Abstract : The job-shop scheduling problem (JSSP) is an important decision facing those involved in the fields of industry, economics and management. This problem is a class of combinational optimization problem known as the NP-hard problem. JSSPs deal with a set of machines and a set of jobs with various predetermined routes through the machines, where the objective is to assemble a schedule of jobs that minimizes certain criteria such as makespan, maximum lateness, and total weighted tardiness. Over the past several decades, interest in meta-heuristic approaches to address JSSPs has increased due to the ability of these approaches to generate solutions which are better than those generated from heuristics alone. This article provides the classification, constraints and objective functions imposed on JSSPs that are available in the literature.