

ABSTRACT

FINITE CAPACITY SCHEDULING USING JOB PRIORITIZATION AND MACHINE SELECTION

In a method, device, and computer-readable medium for finite capacity scheduling, heuristic rules are applied in two integrated stages: Job Prioritization and Machine Selection. During Job Prioritization ("JP"), jobs are prioritized based on a set of JP rules which are machine independent. During Machine Selection ("MS"), jobs are scheduled for execution at machines that are deemed to be best suited based on a set of MS rules. The two-stage approach allows scheduling goals to be achieved for performance measures relating to both jobs and machines. For example, machine utilization may be improved while product cycle time objectives are still met. Two user-configurable options, namely scheduling model (job shop or flow shop) and scheduling methodology (forward, backward, or bottleneck), govern the scheduling process. A memory may store a three-dimensional linked list data structure for use in scheduling work orders for execution at machines assigned to work centers.

Fig. 2