Optimization of Flexible Job Shop Scheduling Problem with Sequence-Dependent Setup Times Using Genetic Algorithm Approach

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Abstract : This paper presents optimization of makespan for 'n' jobs and 'm' machines flexible job shop scheduling problem with sequence dependent setup time using genetic algorithm (GA) approach. A restart scheme has also been applied to prevent the premature convergence. Two case studies are taken into consideration. Results are obtained by considering crossover probability ($pc = 0.85$) and mutation probability ($pm = 0.15$). Five simulation runs for each case study are taken and minimum value among them is taken as optimal makespan. Results indicate that optimal makespan can be achieved with more than one sequence of jobs in a production order.