Genetic Algorithm for Solving the Flexible Job-Shop Scheduling Problem

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Abstract : The flexible job-shop scheduling problem (FJSP) is an NP-hard combinatorial optimization problem, which can be applied to model several applications in a wide array of industries. This problem will have its importance increase due to the shift in the production mode that modern society is going through. The demands are increasing and for products personalized and customized. This work aims to apply a meta-heuristic called a genetic algorithm (GA) to solve this problem. A GA is a meta-heuristic inspired by the natural selection of Charles Darwin; it produces a population of individuals (solutions) and selects, mutates, and mates the individuals through generations in order to find a good solution for the problem. The results found indicate that the GA is suitable for FJSP solving.