

Heuristic Algorithm to Minimize Maximum Lateness for Job-shop Scheduling Problem in Automotive Industry

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Abstract

An automotive manufacturing company producing die and stamping products. Job-shop is a pattern of product flow that applies, because products have a variety of shapes, sizes and different designs. The purpose of this research is to design a scheduling using an active schedule algorithm and a non-delay schedule algorithm. The algorithm supported by the python programming language. Job shop scheduling pattern with 17 jobs and 10 stamping machines. Scheduling performance used is to minimize the maximum lateness, makespan and mean lateness. Based on the research results, the non-delay schedule algorithm can reduce the maximum lateness by 16.81% compared to the active schedule algorithm approach.

Keywords

Job-shop, active schedule algorithm, non-delay algorithm, python programming, maximum lateness.

Biography

Docki Saraswati is a Lecturer at Industrial Engineering Department, Universitas Trisakti, Jakarta, Indonesia. She received her Doctorate and BS from Industrial Engineering, Institut Teknologi Bandung (ITB), Bandung, Indonesia, and her Master degree from Industrial Engineering Department, University of Toronto, Canada. Her research interests are in production scheduling, inventory control, and production systems.

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