

**OPTIMIZING PRODUCTION SCHEDULING USING GENETIC
ALGORITHM CASE STUDY IN PT. KURNIA RATU KENCANA**

By

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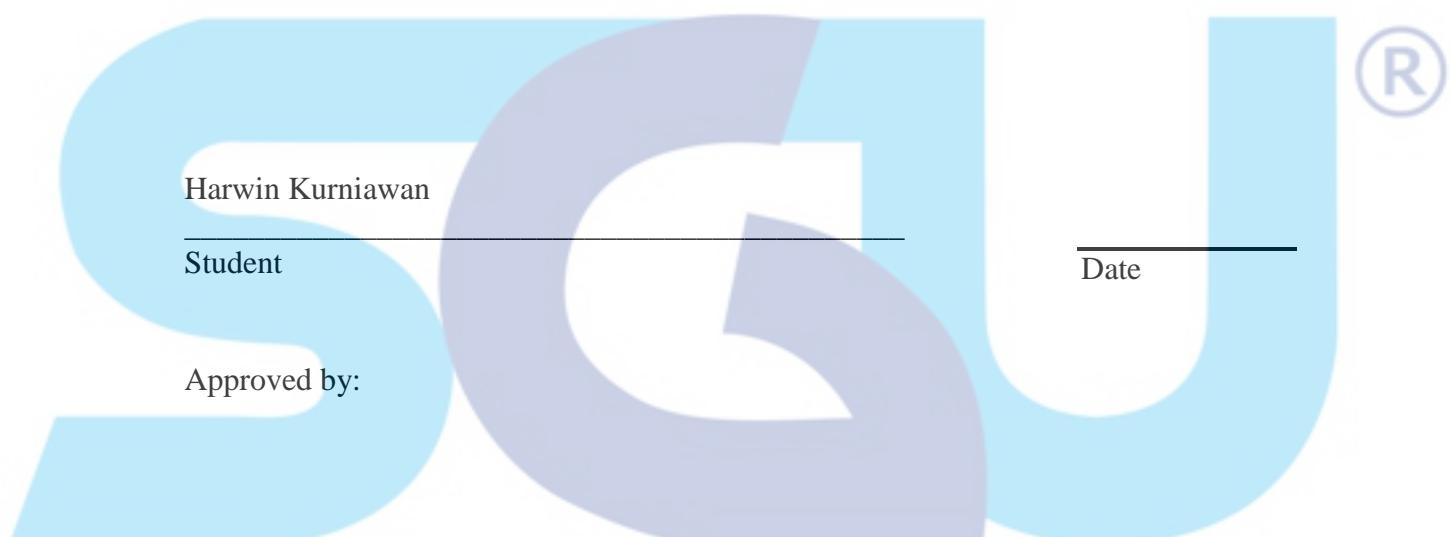
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STATEMENT BY THE AUTHOR

I hereby declare that this submission is my own work and to the best of my knowledge, it contains no material previously published or written by another person, nor material which to a substantial extent has been accepted for the award of any other degree or diploma at any educational institution, except where due acknowledgement is made in the thesis.



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ABSTRACT

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This thesis addresses the scheduling problem in PT Kurnia Ratu Kencana with scope of problem in production scheduling system. In this factory, the product completion time often exceeds the agreed deadline. The cause of the problem is the total makespan, that is the total time from the first item enters the production line until the last item leaves the production line in the same batch, was too high. Therefore the purpose is to develop an application that is able to generate production schedules with minimum total makespan. Genetic algorithm as a proposed methodology should be able to deliver a solution with possible minimum total makespan. The best solution is selected using roulette wheel methods, mutation and crossover processes. An application is developed using java programming to generate production schedules in a flow shop factory. The resulting application is capable of automatically creates production schedules that has better total makespan compared to previous scheduling method used in PT Kurnia Ratu Kencana. Genetic algorithm is capable of create a production schedule in PT KRK with smaller total makespan in shorter time.

Keywords: *Genetic Algorithm Scheduling, Job Shop Scheduling, Textile Production, Java Scheduling Application, Roulette Wheel Methods.*



DEDICATION

"I dedicate this thesis for my parents and family that have sacrificed so much for me in all aspects of my life and to God that has supported me and guides me through the making of this thesis. Without them I wouldn't be able to finish this thesis."



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