RESOURCE ALLOCATION IN TRUCKING SYSTEM BY ADOPTING GREEDY ALGORITHM: A CASE STUDY IN SOEKARNO-HATTA INTERNATIONAL AIRPORT

By

Sachiyo Kenji
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SWISS GERMAN UNIVERSITY
The Prominence Tower
Jalan Jalur Sutera Barat No. 15, Alam Sutera
Tangerang, Banten 15143 - Indonesia

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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.

Sachiyo Kenji

Student Date

Approved by:

Dr. Tanika D. Sofianti, S.T., M.T.

Thesis Advisor Date

Dr. Adhiguna Mahendra, M.Kom., MSc., MSV., MSR.

Thesis Co-Advisor Date

Dr. Maulahikmah Galinium, S.Kom., M.Sc.

Dean Date

ABSTRACT

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Sachiyo Kenji
Dr. Tanika D. Sofianti, S.T., M.T., Advisor
Dr. Adhiguna Mahendra, M.Kom., MSc., MSV., Co-Advisor

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Due to the global economy that has become more competitive as time flows, price competitiveness holds one of the keys of success in most industries. This competition has created a tough challenge in regards of maintaining the business profitable by keeping operating cost of doing the business in control. It has led resource allocation to become very important in each business to avoid financial waste caused by over resource and an inefficient management of resource. In addition, resource usage also has a great dependency with the given task that should be completed. Assuming that task is given at a random time with a random workload, resource allocation has become a complex problem but yet important. In this research, we found that this problem is often occurs in trucking system which manages the delivery and is even more complex when each delivery is time sensitive. To find the solution for the such complexity, this research is being conducted for trucking system in Soekarno-Hatta International Airport which manages the delivery of flight catering to the aircraft. After trying to solve the problem in a lot of different approach, we concluded that an algorithm must be made to optimize the incoming tasks and it also requires the resources to be scheduled in order to allocate the resource in minimum amount. To that end, we use greedy algorithm's concept and come up with different ways to schedule the resource and determine the required resource.

Keywords: resource allocation and scheduling, flight catering, greedy algorithm, truck scheduling and assignment.

DEDICATION

I dedicate this research for my future and all the people who made me what I am today.

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First of all, I would like to thank myself for being able to complete this thesis work, because it seems impossible to me initially, as I have never done programming in my life before working on this thesis. I am also very satisfied with the fact that I have managed to also create all the algorithms in this thesis work from scratch without any outsource.

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