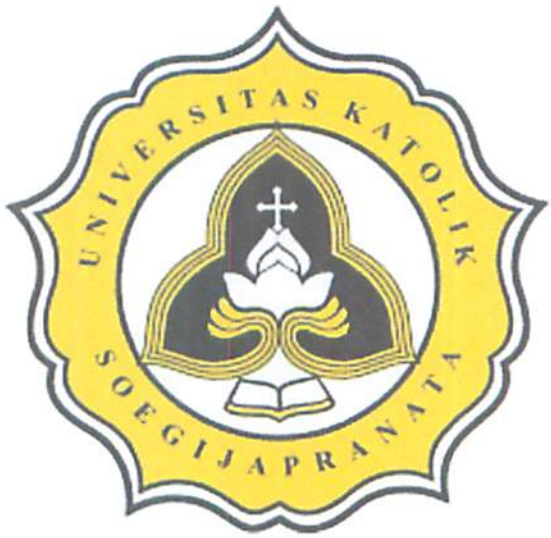

PROJECT REPORT

TRAVELING SALESMAN PROBLEM USING ANT COLONY OPTIMIZATION ALGORITHM

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10.02.0013

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APPROVAL AND RATIFICATION PAGE

PROJECT REPORT

TRAVELING SALES PROBLEM USING ANT COLONY OPTIMIZATION ALGORITHM

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ABSTRACT

The Traveling Salesman Problem is one of the most intensively studied problems in computational mathematics. The traveling salesman problem consists of a salesman and a set of cities. The salesman has to visit each one of the cities starting from a certain one (e.g. the hometown) and returning to the same city. The challenge of the problem is that the traveling salesman wants to minimize the total length of the trip.

The Ant Colony Optimization (ACO) meta-heuristic is inspired by the foraging behavior of real ants, in particular by the way ants find short paths between their nest and food sources. While a single ant has limites vision and would not be able to accomplish this feat, a swarm of ants can succeed by indirectly communicating via pheromone markings.

This project described about the issue in traveling salesman problem which discusses the problem of finding the shortest route in the graph in order to go through all places and back at the starting place. The purpose of this project is to solve the problem in determining the route using Ant Colony Optimization so that the travel distance to the all places is being optimal.

Keyword : Traveling salesman problem, Ant Colony Optimization algorithm

FOREWORD

This thesis is the result of my four years of studying at the Faculty of Computer Science Soegijapranata Catholic University. Thanks to motivation and interest in this academic area, I made it till the end. At the moment I am looking forward to the graduation and I am looking into the future with the same light of motivation and confidence, as four years ago.

There were hardships and struggles, and lack of confidence. Neverthless, I will always remember this period as one full of joy, laughter and solid friendships. Yet most of all, the time at the Faculty of Computer Science will be marked with hard work rewarded with decent results, not only regarding studying, but also regarding shaping of the personality.

All the effort put into this Bachelor Assignment would not be enough, If I did not have the support of my loving family, friends, and also my lectures around me. Therefore, I would like to thank to Almighty god because of His Grace I am able to finish this. My mother, Yuli Astuti, for being strict when I needed it and her priceless advice and support she was always ready to give. My Father in Heaven, I know you always watch me from there. My friends made sure I had the necessary distraction during the process and always came up with handy ideas.

Most of all, I would like to show my appreciation and gratitude for the involvement of my supervisor, Hironimus Marlon Leong, S.Kom.,M.Kom, who always taught me and give solution when I had a problem. Last but not least, I would say thank you to all the lectures, who taught me since I start my study here. You're such an amazing lecture that I ever met.

Semarang, July 18th 2014

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