PROJECT REPORT
SEARCHING OPTIMUM ROUTE USE ANT COLONY OPTIMIZATION WITH ASISSTED GOOGLE API
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12.02.0010
2016

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PROJECT REPORT

Searching Optimum Route use Ant Colony Optimization with assissted Google Apl

by

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ABSTRACT

The route want to destination point have many possibility route, so one must to find the best route so there would not be any wasted energy, money and time. For traveling for works furthermore, saving time and money is really important. So if there could be a way to automatically find the most optimal route to take it would definitely be a life saver.

This program uses Ant Colony Optimization Algorithm to find the optimal route because it could give the best result from departure city until destination point. The Ant Colony Optimization adoption from how real life ants find their food, how the colony of ant first spread around to search for food from their nest, and when one of the ant found some food it would inform the others to follow the path to get the food. In programming world Ant Colony Optimization has a concept that every city has a value, then the ant colony algorithm optimization would create a random value from these cities inputed, which then would be compared to the values of each cities. When there was a value close to that random value, the city with that value would be taken out and chosen as the next destination. This program would continue this until every city has been put into a chronological order.

The result from this is a list of the most optimal route to go from the departure city to the destinations through the cities included in the route wanted. With the assistance of Google Api it would also have visualized map with colorized routes and distances between each routes and cities.

Keyword : Ant colony optimization algorithm, random value, Google Api
PREFACE

In Order to gain practical Knowledge in the field of Computer Science. Required to make report on Final Project, The final project is named of “Searching Optimum Route use Ant Colony Optimization with Assisted Google Api”. The Basic Objective behind doing this final project report is to fulfill faculty requirement.

The final project is splitted into 6 subject, the first subject describe about background, scope and objectives of Final Project. In background chapter describes about the problems, analyze the program, then solution to solve this problem. In scope chapter describe the limitations of the problems. And in objective chapter describe about the problem can solve use ant colony optimization algorithm. In the second chapter describe about literature study. The literature study will telling any result from previous research about solving the best result route use ant colony optimization. The third chapter is telling about research methodology of final project.

The fourth chapter describe about analysis design and design application, the analysis is equipped with a use case diagram, while the design is describe about the class diagram. The fifth subject is about the implementation and testing application, and conclusion and further research can be find in sixth chapter.
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