

STUDY AND DEMONSTRATE THE USE OF GENETIC ALGORITHM IN TRAVELLING SALESMAN PROBLEM

Prepared by: Wong Mung Fui

ABSTRACT

This project proposed to develop a system applying Genetic Algorithm (GA) to solve the Traveling Salesman Problem (TSP). The system includes the TSP scenario management function and GA function. A scenario contained the map setting and the cities information. The users are allowed to customize their own scenario are provided as the alternative choice. Besides, users could change the Genetic Algorithm parameter and method to optimize the solution.

The author had a keen interest in issues of artificial intelligence and how they simulate the human artificial. That curiosity drove the author to know about the Artificial Intelligence concept which ultimately leads the author to develop a AI based system. After research some related information, the author finally choose the Genetic Algorithm application as the project title. Traveling Salesman Problem is a popular tough and difficult problem that hard to be solved by using mathematically method, the author decided to use the Genetic Algorithm to challenge the Traveling Salesman Problem.

This project started with the research on basic concept of Artificial Intelligence followed by the more deeply AI topic such as Genetic Algorithm. Later, the Traveling Salesman Problem was briefly discussed in the following chapter. Since the author decided to write the TSP system using Mat lab, the research on Mat lab was briefly presented. The author had done the system design and development by next. The project was finally concluded by the system testing and quality estimation.