

Abstract

Traveling Salesman Problem (TSP) represents the case for distance or time optimization in computer science theory, TSP can be used for shortest distance optimization or fastest time, in this research TSP is used for determination of optimal tourism route around Bandung Raya. In this study the optimal variable is the shortest route (based on time) and the number of tours per day that can be generated. For TSP problems will use Genetic Algorithm (AG), AG one of the algorithms that have been widely known and studied and can solve problems Traveling Salesman Problem. AG can find the best solution of many possible routes with fast running times, unlike the brute force algorithms that definitely find the best solution but have a very long running time. For that reason, using AG for this study is expected to facilitate the reader to understand this research because the reader can focus on developing the use of AG in this study. In the early stages the user is required to choose a lodging because it will affect the routing results, after which the user will determine the desired tourist destinations and will then be processed with AG. The process of scheduling and determining the route will pass through several stages of encoding, fitness, selection, crossover, mutation, survivor selection, with the expected output of the system making scheduling routes for the user and maximizing the number of tours for each day. There are two tests with the first test of comparison of GA results with multilevel GA, and a second experiment of stratified GA comparisons with brute force. Evaluation results for the multilevel GA experiment obtained the best result of reduction of time on the first day by 108 minutes. For GA-level comparison test with brute force was found that the total time difference was only 1 minute.

Keywords: tourism, tsp, genetic algorithm, recommended system, scheduling.