Abstract

Traveling is one of the activities chosen by many people to spend holidays. Some tourists want to go on vacation in a place they have never visited before, so they need a tool to plan a tour. Planning this tour includes determining tourist route. We analogize the determination of tourist routes using Traveling Salesman Problem (TSP). The main purpose of this study was to find the optimal tourist route using Swap Operator Based Artificial Bee Colony Algorithm. We use Multi-Attribute Utility Theory (MAUT) to accommodate user needs for the route that recommended by the system. The criteria for user preferences used in this study are: 1) routes with as many tourist attractions as possible, 2) routes that pass popular destinations, and 3) routes with minimal costs. Based on the experiment results, Swap Operator Based Artificial Bee Colony gives more optimal results than the Simulated Annealing, especially in terms of the number of tourist attractions (nodes) that can be visited in one trip.

Keywords: Multi-Attribute Utility Theory, Swap Operator Based Artificial Bee Colony Algorithm, Traveling Salesman Problem