Abstract

Bandung is a city with many potential tourist destinations have been known or unknown. However, it is difficult to determine the tourist destination that will be visited manually, while currently tourists only visit popular tourist destinations or use travel agents. The main objective in this study is to provide recommendations on optimal tourist routes using the bat algorithm with consideration of additional user criteria such as number, rank, and cost of tourist attractions. The optimal route generated is analogous to Traveling Salesman Problem, a recommendation for the best route made using the Bats algorithm with the Multi-Attribute Utility as consideration for suggesting tourist attractions. The best performance bat test algorithm results obtained in quadrant IV, which is 50 generations and 10 bats. Comparison of bat algorithms with Simulated Annealing shows that Simulated Annealing provides better fitness with an average error rate of 1.19%. But bat algorithms produce faster execution times with an average error rate of 75.88%. The conclusion is bat algorithm can be applied to tourist route recommendation systems with nearly optimal fitness. But with a time that is much faster than the Simulation Annealing algorithm.

Keyword: bat algorithm, multi-attribute utility theory, recommendation, traveling salesman problem