ABSTRACT

Lhokseumawe is a city in the Aceh region, Indonesia. This city is located right along the eastern route of Sumatra. Located between Banda Aceh and Medan. When humans use nature, they always leave food scraps that are considered useless and as a result are handled as abandoned items, such as waste and trash. The process of transporting waste is an inhibiting factor that must be found a solution by finding the shortest route that will be taken by garbage trucks while completing the process of transporting waste from TPS to TPA. Shortest path is the search for the shortest path between vertices in a weighted graph with the minimum path length. Dijkstra's algorithm is a single source shortest path algorithm for finding the shortest route from one node to all the nodes in a graph. The author develops a system to show how to apply Dijkstra's algorithm to solve the shortest path problem in the context of waste transportation based on this problem. Application of the Dijkstra algorithm to find the shortest route from the starting point to the destination produces the shortest route from TPSA – to IAIN Lhokseumawe - Rs.cut mutia – then to Lhokseumawe Polytechnic – then back to TPSA with a route distance of 12.26 km with a duration of 29.14 minutes.

Keywords: *Lhokseumae City, Garbage Transport Process, Shortest Path, Dijkstra's Algorithm.*