

ABSTRACT

Transporting waste is one of the complex logistics problems that exist in every town. The last few years the increase in fuel prices, operating costs and regulatory burdens caused by transporting garbage generate considerable cost. The problem becomes a large potential for optimization and savings. In addition to high transportation costs, problems occur also in the transport of waste containers are not full or too full because the officer only transport based on a schedule, resulting in wastage when the trucks take the garbage containers that have not been filled. The problem is called Vehicle Routing Problem.

In this study constructed a sistem that receives polling information with full condition, the computation is then performed using an algorithm that is designed to get the order of visits with the lowest cost value (total travel time) for each distric. Sequence of TPS visit is then distributed to several trucks with 6-hour limit time for each truck. Tests on the algorithm is done by giving some input number of polling stations were full. Based on the whitebox test results, each stage of the algorithm running well and provide output in accordance with the draft, but the computing time testing showed high computational time.

According to the test, the system has been made to organize the logistics process of waste collection, and create the lowest cost route for navigation systems in mobile applications. Algorithm to determine the route with the lowest value of travel time has a total cyclomatic complexity value of 12 and computing time with the maximum number of polling stations each district based on Table 3.1 is 1.2 seconds for 8 TPS.

Keywords: vehicle routing problem, VRP, heuristics, waste transportation, route, Bandung.