FINDING THE SHORTEST PATHS AMONG CITIES IN JAVA ISLAND USING NODE COMBINATION BASED ON DIJKSTRA ALGORITHM

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Abstract- This study focuses on finding the shortest paths among cities in Java Island by repeatedly combining the start node's nearest neighbor to implement Dijkstra algorithm. Node combination is used to find the shortest path among cities in Java by deleting the node nearest to the start node. The use of memory by node combination is more efficient than the use of memory by the original Disjkstra algorithm. The 46 cities in Java Island will be used to evaluate the performance of finding shortest path. The experimental results show that the accuracy of node combination is 92.88% with the Google Map as the reference. The successful implementation of algorithm in finding the shortest path on the real problem is a good point; therefore, the algorithm can be developed to solve the transportation network problem.

Keywords*:* Shortest path problem, Dijkstra algorithm, Node combination, Transportation problem.