

ABSTRACT

Bandung is one of the major cities in Indonesia. As a big city, it certainly has many problems, one of which is the problem of road traffic congestion. Bandung is a city in Indonesia with a considerable level of congestion. In addition to disrupting community activities, such as draining time because they have to wait for traffic jams, the congestion phenomenon in Bandung also causes huge economic losses.

There are many applications to find out information about traffic conditions on each road. But sometimes the data submitted by the application does not match the actual data. Because of the limitations of this application, the author intends to develop an application that can provide information about congestion.

The author will create an application that displays the fastest route, so that it can facilitate road users who will travel. All information detected by an ultrasonic sensor that is stored on several road segments will be sent to the drivers' android application.

Determination of the fastest route is presented using the Genetic Algorithm method and Graph Concept. Genetic Algorithms are adaptive methods commonly used to solve a value search in an optimization problem. In addition, the Graph Concept is a set of objects called vertices and vertices connected by edges or arcs.

The author does a design by comparing the total distance by using graph concepts and genetic algorithms with the same mileage results. This proves that these two methods are a good solution optimization method.

By using these two concepts, each concept has advantages. Namely mapping modeling and determining each route using the concept of graph, then for the calculation of the shortest distance traveled the author uses the Genetic Algorithm method which results from the Genetic Algorithm calculation which will present the path that the application user must take with the fastest route.

Keywords: Congestion, information system, Graph Concept, Genetic Algorithm