

### **Abstract**

**In the modern industrial sector, vehicle scheduling and planning is an important part and a central issue that becomes a point of concern. Therefore, selecting the optimal vehicle route is necessary to provide high customer satisfaction. Based on these issues, the need for a tool to facilitate one of the problems in the industrial sector, namely, the search for optimal routes in goods delivery problems. Therefore this research was made further to research and create simulation applications that can find the shortest route from the delivery point to the destination points along with visualization and information from the path to be taken by the vehicle. The application built is a desktop-based application and uses a genetic algorithm, one of the algorithms that is often used in route search optimization. From the tests that have been carried out with 20 trials on the same variable, the application is able to produce an optimal sequence of goods delivery routes of 75%.**

**Keywords: desktop application, optimization, simulation, genetic algorithm.**