

Abstract

In this paper, the traffic flow on the highway is congested with passing vehicles, thus increasing the number of vehicles used on the road which can cause traffic jams. This paper aims to simulate vehicle traffic flow with a cellular automata model using a four-lane track with three lanes with two roundabouts. The simulated road condition is in the form of two paths in opposite directions. The Cellular Automata model is used because it corresponds to the real movement of the driver on the highway. In addition, this model can analyze the next actions taken, such as increasing speed, changing lanes, and braking. Then, the different parameters, including vehicle speed, number of vehicles, trajectory, probability, and time traveled by the vehicle on the track. The results of the implementation of the cellular automata model can be used as traffic planning on the highway.

Keywords: Traffic Flow, Cellular Automata, Simulation.