Abstract

In this modern era, many problems can be solved with the help of technology. While the technology that is often used behind this is the Internet of Things (IoT). IoT itself can be applied to solve various kinds of problems, such as the difficulty of finding available parking on the campus of Telkom University. This problem arises because the campus area is fairly wide while the demand for four-wheeled parking is increasing. Not to mention if there is an event that makes one or more parking areas full. This results in the less effective use of time. To overcome these problems, a smart parking system was built to determine parking density and available parking space recommendations. This smart parking system is based on Android which was built with NodeMCU ESP8266, Neo-6M GPS, Firebase, and uses the Fuzzy Dijkstra method. Where is the combination of fuzzy logic and Dijkstra algorithm. Density is calculated based on the Fuzzy Logic algorithm by utilizing the Global Positioning System (GPS) module of a car parked at the specified parking location. Whereas the parking space recommendation uses the implementation of the Dijkstra algorithm. With this system, the driver can streamline the time for 128 seconds or 04.08 minutes and a distance of 488 meters to find a parking space without having to search even around one by one parking area.

Keywords: smart parking, IoT, GPS, Fuzzy Dijkstra algorithm