

## **ABSTRACT**

The development of motor vehicles, especially cars, in Indonesia can be said to be developing rapidly. According to the Indonesian Automotive Industry Association (GAIKINDO) watchdog, car sales in 2018 reached 291,912 units of cars for all types and sizes of cars, increasing by 8,152 units from the previous year with a total of 238,760 units. The increase in the number of vehicles, especially cars, can be expected to continue to increase for years to come. However, the number of cars on the road is not proportional to the amount of parking available. The lack of parking is not only bad for car owners, parking lot managers and the government also feels the effects of lack of parking. The most fundamental problem in choosing parking is the lack of information about empty parking lots.

This final project uses an application design method that can manage smart parking on the basis of the Internet of Things (IoT). The making of this application relies on Android Studio as an android application development to notify the user of an empty parking lot that was previously connected via Firebase with hardware. The test was declared successful after seeing the Quality of Service (QoS) sought, namely delay, throughput, packet loss, reliability, and availability. QoS value that we searched for based on ITU-T (Telecommunication Standardization Sector of the International Telecommunication Union).

The results of tests that have been done are obtained that the Application system for Android-Based Smart Parking is able to provide drivers with information about the empty parking lot and the path to the parking lot, with the testing of QoS which covers delay by value 24,114 ms, jitter for 49,166 ms, throughput for 3737,204 bps, and 0% for packet loss.

Keywords : Internet of Things, Smart Parking, Android Studio