ABSTRACK

Parking is a facility that is currently an important necessity in everyday life. Examples when you want to do activities such as working or walking to entertainment venues. Problems that often occur are the length of time to find the available parking location and the length of the vehicle queue if you want to enter the parking location.

To improve facilities for parking services, a thorough authentication method of parking attendants is needed. So with fingerprint authentication can be more efficient without having to check the identity and can improve security in the parking area. Assuming the fingerprint that has been registered is the same person who will enter and exit the parking area. All devices such as fingerprint sensors, servo motors, and web cameras will be connected and controlled by Raspberry Pi and will be stored in the Firebase database.

In this Final Assignment, a parking prototype system is designed and implemented that can improve parking facilities in parking access authentication. Tests conducted in this study were measured using Wireshark software, by measuring the QoS (Quality of Service) parameters, namely Line of Sight (LOS) and Non-LOS.

The results showed that the system designed was able to work well and produce the expected performance. Line of Sight has the smallest Delay at a distance of 5 meters is 0.27886 s and throughput is 2.073.27 bytes / s, the overall system results for end-to-end in the LOS scenario with a Delay of 0.5871 seconds and throughput is 4.083.97 bytes / s.

Keywords : *Internet of Things, fingerprint sensor,* Raspberry Pi, *Motor servo,* Firebase.