ABSTRACT

The development of increasingly sophisticated technology as it is today makes everyone smarter in utilizing everything from what was previously manual to automatic, one of which is the automatic parking system. In general, the parking system used in various places, especially on the campus of the Telkom Purwokerto Institute of Technology, still uses a manual parking system, meaning that all students can enter whether there is a class schedule that day or not. This is deemed less effective because there is no real time monitoring. Therefore, the authors make an automatic parking system based on an RFID card as an identification sign in and out, Wemos D1 Mini as a microcontroller, using Google Firebase as a student entry database to meet the needs of the automatic parking system as well as student data input. Making this automatic parking system aims to make it easier for students to do activities on campus while at the same time making the parking atmosphere more conducive. In making this automatic parking system there are several components that will be used, namely Wemos D1 ESP8266 Wifi, RFID Tag, LCD, Infrared Proximity Sensor, Buzzer, Arduino IDE Software, and servo motor. Students can enter the parking portal if the data has been registered or inputted through the database on Google Firebase, and if the data has not been registered then the student cannot enter the parking portal and there is an information display on the LCD that today there is no schedule or today there is no time. In this study, there are QoS tests, namely throughput and delay, where throughput gets a value of 160,414.61 bps which is in the very bad category and delay gets a value of 5,03997 ms with the category according to ITU-T G.1010 very good.

Keywords: *Google Firebase, Automatic Parking, RFID Tag, Infrared Proximity Sensor.*