Design and Monitoring Automated Lighting System in Parking Area Based *Internet Of Things (IOT) .*

At this time, a system is needed smart parking that can carry out automatic lighting on the area of the vehicle that is parking. Therefore, the author has conducted research by designing a prototype system that can perform lighting in a closed parking area (indoor) automatically and adjust the brightness of lighting needed in certain parking areas to facilitate the system in lighting and reduce electricity consumption. With input using HC-SR04 (Ultrasonic) sensor and sensor LDR (Light Dependent Resistor). The system can also monitor using the Internet of Things (IoT) withmodules Wi-fi.

The control method used islogic fuzzy which is generally applied to problems that have an element of uncertainty. Sensor HC-SR04 detects vehicles that will park or vehicles that drive will enter and leave the parking area. And, the sensor LDR will detect the intensity of light in the parking lot to ensure lighting. Then, Arduino will read the measurement data of the sensors HC-SR04 and LDR. LED brightness will be regulated by values PWM in fuzzy logic rules. The results of the deduction data will be sent via the internet media to ThingSpeak.com cloud using the Wi-fi ESP8266 module.

Based on the results of testing and implementation of the prototype. In system testing, it takes 1-2.5 seconds sensor data retrieval time. In thesensor value LDR has a 0-1023 resolusi while in HC-SR04 obtained the percentage of success in themeasurement HC-SR04 is 97.82% with an error percentage of 2.18%. Monitoring system via IoT with an average delivery time of 15 seconds. As well as testing the output of fuzzy systems with distance and intensity intensity with 3 parameters of the LDR value tested at 150 and 320. As for HC-SR04 values ranging from 0-30 cm.

Keywords: *Parking Area, IoT, Logic Fuzzy, PWM, LED*