ABSTRACT

Today, the amount of parking lots is nowhere near to the amount of vehicles which is increasing. The drivers start to feel the difficulty of finding the empty parking spaces and often they just driving around the parking lot, wasting their time and their energy. To coped with this problem, Vehicle's parking space allocation and guiding system to the empty parking spaces needs to be developed. The system must be able to identify the availability of parking spaces. If the system can't identify the availability of the parking spaces, the datas which will be processed and displayed to the drivers aren't appropriate. On the other hand, the system must be able to guide the drivers to the available parking spaces too.

Vehicle parking space allocation and guiding system is made of infrared sensors, Arduino Uno microcontroller, and Raspberry Pi. Beside, this system is also using LED lamps and LCD screen as the outputs. Based on the testing, this system is able to identify the availability of vehicles on the parking spaces and able to give the guidance to the empty parking spaces and also displayed the amount of empty parking spaces on the LCD screen correctly. System only applicable on the parking lots with maximum amount is 200 slots. If the amount of the parking slots is more than 200, system's performance will decrease because the vehicle which entered won't be detected if it passes the sensor on the enter gate in lower than three seconds.

Keywords: *Infrared sensors, Arduino Uno, Raspberry Pi, LED*