ABSTRACT

Over the years, the number of vehicles in major cities like Jakarta has increased, leading to a reduction in available parking spaces. This limitation in parking space triggers various issues in economic, social, health, and safety aspects. This study discusses the implementation of the Internet of Things (IoT) in a vertical parking model that can help optimize parking spaces. IoT is used to monitor the status of parking slots, whether they are occupied or vacant. The system can be operated by booking through a website to view available and unavailable parking slots. Based on the test results, the parking lift can lift a load to the second floor with a weight of 60 grams in 16 seconds. In the test of lowering the load from the second floor to the first floor, the lift was able to lower a 60-gram load in 15 seconds. In the IoT testing, the sensor was able to detect a vehicle in a parking slot at a distance of less than or equal to 6 cm. Finally, the website testing showed no delays or issues during user reservations and operator checkouts. Users who have used the website and filled out the questionnaire provided fairly good feedback, with a score of 4.24 out of 5 for user experience and 4.12 out of 5 for visual comfort while using the website.

Keywords: Parking Lot, Vertical Parking, IoT*, Website*