ABSTRACT

The development of the academic community on the Telkom University campus is increasing and causing an increase in the number of riders on campus. The most important facility for a public area is a parking lot. One of the campus parking problems is the limited parking space for four wheels on certain days. most students, lecturers, academic staff, and other visitors visit for other purposes using private vehicles. No wonder the parking lot is generally always full, and not a few motorists have trouble finding a parking space. This can make them waste time looking for a parking space and procrastinate.

Finding a parking space can be difficult for some drivers as time spent attending lectures is wasted, which causes some drivers to drive around looking for affordable parking spaces. Conditions like this can cause drivers to park their private vehicles automatically, and driver irregularity can also endanger pedestrians because many drivers use pedestrian lanes as parking spaces. This of course can cause traffic jams and long queues in the parking area and make some motorists feel disadvantaged in terms of time. This smart parking uses a system development method, this method is run with an automatic tool that can detect motorized vehicles and send the data to a web server so that drivers can find out which parking spaces can be booked. Furthermore, the driver can make a reservation on the website. Smart Parking will make the parking system better and save user's time. Smart parking is also a solution for some drivers to minimize on-time arrivals.

Research on smart parking has also been carried out previously but only uses ultrasonic sensors, while in this study smart parking uses an Esp32 Cam integration camera that can detect cars and detect in the Telkom University area. The process of sending data from Esp32 cam to the database shows that the QoS on the system made is in the very good category with each average value for the first day, second day, and third-day scenarios, namely throughput 1859.27 bps, 4634, 84 bps and 3238.37 bps, and delay of 65.95 ms, 47.85 ms, and 42.31 ms.

Keywords: Internet of Things, Smart Parking, Car Vehicle, Detected