ABSTRACT

The development of the number of vehicles, both in the form of two-wheeled vehicles and four-wheeled vehicles, has increased so rapidly that it can lead to growth in vehicle processing facilities and parking lots. In a place, such as in a mall, the vehicle parking lot can consist of several floors in the basement or at the top of a building. In addition, many sectors have changed their function to become parking lots. In this situation, a flexible vehicle monitoring system is required, and the system is the detection of the type of vehicle ownership based on the color on the vehicle number plate connected to the Raspberry Pi, which is expected to accommodate this problem.

This research creates a system that can recognize the type of vehicle based on the basic color on the number plate whether the vehicle is a private, public, government, or temporary license plate type. Data in the form of images taken using a webcam through the acquisition of the Raspberry Pi. The system is designed using the Hough Transform method to be able to detect the presence of a number plate on a vehicle, cropping, then detect the basic color of the number plate using the YCbCr color space, and the system will also measure the network quality between the Raspberry Pi and the laptop used during the detection process. .

The system successfully detects vehicle plates by getting the best Hough Transform accuracy of 80.5% when detecting public vehicle license plates in morning light conditions and also getting the best color recognition accuracy of 80.5% when detecting plates on the license plate number of public transportation in the morning light conditions.

Keywords: *Image Processing, Image Processing, Number Plate, Hough Transform, Raspberry Pi, YCbCr*