

ABSTRACT

Vehicle is a land transportation that is useful in life daily especially for work mobility. However, there are inadequate system warning and supervision for driver which often make vehicle is dangerous. One of the death cause for drive are car speed and distance that do not safe. This is the background for author to design a smart car prototype with vehicles speed monitoring system for speed information and the car distance could accessed and send the information for other drivers.

The design of this prototype of smart car works by detecting the speed of the vehicle with an FC-03 speed sensor and detecting the distance with an ultrasonic sensor HC-SR04 which then the sensor data are sent into input on microcontroller and mailed to the database using wifi on Raspberry pi 3 model B. Information which contains speed, distance and driving status can be accessed through the internet network and displayed on the screen of other liquid crystal display (LCD) vehicles.

It is expected that the results obtained from this prototype car final project can adjust the speed to the distance in front of it and display information on the LCD screen, as well as a website that contains a history of speed and distance to be accessed via the internet network, so that the driver can better adjust the distance and speed of the vehicle so as not to exceed the limit safe to reduce accident rates on motorized vehicles.

The results of this system testing obtained a maximum wifi range of raspberry pi 3B as far as 60 meters and the optimal distance of data transmission as much as 5 meters, with a large availability, reliability and system packet delivery ratio of 94.825%, 94.455% and 97.66%.

Keywords : Internet of Things, Firebase, Website