

DESIGN OF AUTOMATIC BRAKING SYSTEM FOR CAR PARKING

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ABSTRACT

Indonesia is one of the developing countries in the world. Every year the population increased significantly and also the number of existing motorized vehicles is also increasing every year. Likewise, the number of accidents caused by negligent drivers when parking their vehicles, this is evidenced by one case of a Brio car crash that crashed into an Alfamart wall. That the car driver intends to park the vehicle in front of Alfamart, when he wants to step on the brake pedal but the driver wrongly steps on the gas pedal. As a result, the car drove around and hit the Alfamart glass wall. The accident resulted in the condition of the car being destroyed and there was material loss, but the driver survived and there were no injuries or deaths from the accident. This can be avoided by implementing an automated braking system on the vehicle, where the driver only focuses on setting the speed of his car (adjusting the accelerator pedal) and does not need to worry or panic about stepping on the brake pedal incorrectly because braking is not done manually, therefore the driver does not need to step on the brake pedal.

The design of an automatic braking system for car vehicles when parking makes it easier for drivers to park the car. The devices used to support this system include Arduino Nano as a microcontroller, Ultrasonic Sensor which is placed on the rear bumper as a measure of the distance between the car and the object, Buzzer as a sound indicator, Servo Motor as a brake pedal puller. The way to activate the sensor is by entering the reverse gear and to deactivate the sensor simply by neutralizing the teeth or entering the forward gear. The servo will pull the brake pedal if the distance is detected by the Ultrasonic Sensor. The system test results show that the system can work with results that match the input.

Keywords: *Accident, Automatic Braking, Car*