

ABSTRACT

In everyday life, using expeditions makes it easier to send goods over long distances. Expeditions using trucks make it easier to move goods from one city to another quickly with large loads. However, accidents caused by trucks are one of the contributors to the high number of accidents in Indonesia. It is very sad to see the high increase in the number of accidents in Indonesia, which is considered not trivial at 34%. Vehicles that are overloaded can cause damage to the road, and worst of all, accidents because the vehicle is difficult to control. Therefore, the application of technology in the transportation sector will be carried out to design a system that can determine the weight of the truck's load and add a safety feature in the form of a switch so that when the truck is overloaded, it cannot be used. The author uses the HX711 sensor as a sensor to read the weight of the truck load which is expected to be attached to the truck's load section, combined with using a relay to stop the flow of electricity when the vehicle is overloaded. This design uses the nodeMCU 8266 as a microprocessor which functions as the brain in the research, where the logic program is written and embedded into the microprocessor. The results of the tests carried out were that the design succeeded in connecting the nodemcu system with the Android application with an average accuracy of 100%. This value is supported by QoS testing to determine the quality of the service offered from throughput parameters with an average of 87.066 bps, delay with an average of 1.109 ms, and packet loss with an average of 0%. According to the TIPHON standard, this value can be categorized as good seen from the TIPHON standard table. The next test tested the ability to read weight using a load cell sensor, which had an average error of 1.662%, this value was categorized as good. The final test is the relay test, where the test looks at the relay execution when it receives commands from the nodemcu, and an average error of 0% is obtained, which means all commands can be executed properly.

Keywords: Arduino IDE, HX711, IoT, LoadTruck, NodeMCU