DESIGN AND BUILD A SMART CAT CAGE BASED ON ARDUINO USING BLYNK APPLICATION

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ABSTRACT

The Arduino-based smart cat cage design work system based on the blynk application can monitor the temperature of the cage, feed feeding with a predetermined time and type of cat, automatic feeding, detection of cat litter odors with notifications, reading of feed weight in the form of data graphs, detection of leftover feed along with notifications, as well as detection of feed and water reservoirs with notifications. This system contains components including: NodeMCU ESP8266 with baseplate, DS18B20 sensor, DC Fan actuator, heater lamp, waterfloat sensor, water pump actuator, servo motor, ultrasonic sensor 1 and 2, loadcell sensor, and MQ135 gas sensor. The success of this design system in testing the DS18B20 temperature sensor 20 times, finding an error value = 0.8%, testing the DC Fan actuator and heater lamp each 10 times both getting accuracy = 100%, drinking water testing is automatically carried out 10 times with accuracy = 100%, testing the feeding of kittens in the morning and evening and the remaining weight of feed < 8gram = 5 times and > 8gram = 5 times it was found that accuracy = 100% with an average decrease in feed weight = 17.6gram, while for morning and adult cats afternoon and the weight of the remaining feed <10gram = 5 times and > 10gram = 5 times the accuracy = 90% with an average decrease in feed weight = 20.4gram, the test of notification of feed and drink reservoirs for each test is 10 times the accuracy of each test is found = 100%, testing the weight of the loadcell weighing 20 times found the error value = 0.02%, testing the feed check 10 times found accuracy = 100%, testing the notification of ammonia gas levels 10 times testing starch accuracy =100%. From the results of testing these features can function properly.

Keywords: Cat, Sensor, Actuator, Testing, Blynk.