

ABSTRACT

Often times there are many problems that occur when saving with traditional savings, such as users not knowing the nominal amount that has been saved later, the authenticity of the money saved, and also savings that can be used continuously. To overcome this problem, the "Savings Storage Automation System with IoT-Based Banknotes" tool was created, this tool was created aiming to help users save easily and safely, when saving nominal money data will be read by the color sensor automatically and sent automatically. realtime to the database. The system design on this tool is based on Arduino Mega as a microcontroller that functions as a center that regulates all components so that they become a single system that can be programmed through the Arduino IDE as desired. input on the Arduino Mega consists of a GY-33 TCS34725 as a color sensor and a keypad to perform functions according to commands on the adjusted pins. The output produced is in the form of nominal data of banknotes that can be seen by the user through a LCD and data connected to the database, while to identify the authenticity of the money manually, it can be done using the help of ultraviolet. The method used to identify the nominal banknotes based on the reading of each RGB value and color temperature on each nominal banknote, so as to produce data that will be sent to the database. The average accuracy of reading currency values on real banknotes reaches 88%, while in testing counterfeit banknotes it is 14%. Testing execution time when entering money into savings is 3.57 seconds and data to the database is 6.57 seconds.

Kata Kunci: Arduino, Banknotes, IoT, LED Ultraviolet, RGB, Color Sensor