

ABSTRACT

The introduction and detection of banknote fractions is one of the important applications in financial automation systems. This research proposes the implementation of a banknote denomination detection system using a TCS3200 color sensor integrated with a NEO6MV2 GPS. The system is designed to identify Rupiah banknotes based on their color characteristics and record transaction locations. This approach aims to improve security and accuracy in the money detection process, especially for applications that require tracking financial transactions. The TCS3200 sensor plays a role in identifying the RGB values of banknotes, while the NEO6MV2 GPS module provides geographical location information. This system was developed using an ESP32 microcontroller connected to a network to report detection results and location coordinates in real-time. The expected outcome of this research is the creation of a banknote detection system prototype with an accuracy rate of over 90% under various lighting conditions and precise location tracking capabilities. The implementation of this system can contribute to the development of a safer and more reliable financial automation system.

Keywords: Detector, GPS, TCS3200, ESP32, Banknotes