

Abstract

Safeguarding valuables such as jewelry, money, or museum items from theft is a responsibility to be continually improved by utilizing embedded system technology. In this final project, the Security of Valuables Based on Embedded System is made using Load Cell Sensor and Voice Recognition Module with the Decision Tree Classification Method that serves to monitor continuously and real time the existence and safety of valuables by taking into account the locking conditions, room temperature and weight of objects . To support this research, Arduino Mega 2560 is used as a microcontroller, voice recognition module v3 as a means of receiving voice passwords, 4x3 keypad as a password recipient for security processes after voice passwords, load cells and HX711 modules to monitor the weight of valuable objects, ultrasonic sensor to detect movement in a safety box, and a temperature sensor to detect room temperature. Decision Tree classification method to determine the accuracy of the output of the number of possible events using algorithm ID3 (Iterative Dichotomiser 3). All test data will be classified into two classes namely safe and unsafe. The results of this study can help safeguard valuables to be safe and avoid the occurrence of theft or fire by getting the right accuracy that is an accuracy of 97.22% with the use of 70% training data and 30% test data.

Keywords: Embedded Systems, Goods Safety, Voice Recognition Module, Load Cell Sensors, Decision Tree