ABSTRACT

IMPLEMENTATION OF HOME SECURITY SYSTEMS WITH *FACE RECOGNITION* USING REED SWITCH SENSORS AND *WEBSITE* BASED PIR SENSORS

Oleh

I Wayan Aditya Putra

19102095

One of the problems in everyday life is home security. Homeowners have anxiety when leaving the house. The solution provided for homeowners is to install a security system that can monitor and assist when a hazard occurs in the house. So it can identify the possibility of intruders entering the house by combining PIR sensors, which can detect human movement, with Reed Switch sensors, which can detect movement between the door frame and door leaf. In terms of security, facial recognition technology is made for use in low-security systems, such as those that rely solely on passwords. It is very likely that facial structures will be used as authentication in the system because every human face has structures that are not perfectly aligned with each other. The prototype method can detect system errors better and faster so that it can find a way out or a solution to various problems properly. The prototype of this home security system uses face recognition with the NodeMCU ESP-32 CAM microcontroller along with the reed switch sensor and PIR sensor to get data sent to the system. The results of testing the home security system with the results of the black box testing were 100% successful and as expected, the functionality testing of the home security system was 98.5% successful, the sensor accuracy testing was 100%, and the overall system testing was 97.5%.

Keywords: Face Recognition, Reed Switch, Website