RADIO FREQUENCY IDENTIFICATION (RFID) BASED SMART POWER ACCESS SYSTEM FOR ELECTRONICS LABORATORY

A Project Study Report

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This study sought to modernize the manual switching of electricity and to prevent the unnecessary electrical consumption that happens inside the Electronics laboratory using Radio Frequency Identification (RFID) - Based Smart Power Access System. The system was composed of a database, two Arduino Uno microcontrollers, two RC5522 RFID module, and a magnetic contactor. The existing identification cards of the faculty and staff issued by the CPU were utilized so as to prevent unauthorized access of power supplies which supply electrical power to provide safety in the use of laboratory equipment and facilities. Registration was held individually by providing the ID holder's name and unique identification (UID) number. The identification cards are tapped on a scanner which sends the information to the microcontroller and identifies if an ID is authorized or not. The information, such as time of entry/exit, was recorded on the server monitor. Data logs were stored on a local database which can be accessed and printed. The overall system showed normal operation, and the data gathered substantially conformed to the functionality, where the two subsystems operated its functions properly. The system also presented accurate results and proved its ease of access and use in terms of usability.