Universiti Teknologi MARA

School Library System Using Arduino Uno and RFID RC-522

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STUDENT DECLARATION

I certify that this project which it refers is the product of my own project and that any idea or quotation from the work of other people, published or otherwise are fully acknowledged in accordance with the standard referring practices of the disciplines.

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ABSTRACT

RFID School Library System is a system that employs a method for librarian to scan students' library card in every book borrowing process in school library of SMK Sultan Badlishah. The project is developed since there is no automated system in library thus the librarians still need to use manual handwritten system which it takes a lot of time for them to manage this task. Furthermore, lack of security feature as they only kept all the borrowed books' details in the log book. Besides, the number of missing books that had been borrowed by student increasing every year that sometimes even the librarians do not aware of it. Therefore, the project is develop to convert the manual handwritten data entry into RFID system for data reliability and can works efficiently to librarians. The RFID School Library System is developed by using Arduino IDE, RFID reader and card, Arduino Uno, Microsoft Visual Studio and MySQL to create database. The project's objectives are to develop a school library system using RFID and to evaluate the functionality to the users. Four testing were conducted in this project such functionality, network, user acceptance and test case. The result show the library card can be detected within 1.6 cm from RFID reader and all the button in the system can function accurately. The transfer speed the least response time needed is 19 milliseconds for 19200 baud rate. The test case result show that the time taken for manual handwritten is longer than RFID School Library System. The recommendations for future works are by putting LED to notify either the process successful or fail and add notification pop up feature if students returned books late from the due date.

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