

Radio Frequency Identification (RFID) Based Real Time Attendance Recorder

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Abstract: Attendance is an important aspect in every education institution and workplace. Attendance recording and monitoring is an area of administration that can require significant amounts of time and effort in a university environment. Most universities are still using the paper based attendance system. This project proposed a portable RFID (Radio Frequency Identification) based attendance system to replace the current method of attendance taking. The developed RFID based attendance system provide a convenient method in attendance taking by providing store students ID and name in EEPROM, display the students entry stored on LCD display, uniquely identify the student's data, track and display attendance data and download data to a computer for further analysis. The RFID reader of the developed system can communicate with access control panels using a standard Wiegand interface. The main parts of the developed RFID system are RFID tags and a reader operating at 125 KHz. The AT24C1024B EEPROM used for storing the data with a 16×2 LCD display and RS-232 interface used for downloading data to a computer while the system is controlled by the PIC16F877A microcontroller. The RFID Reader used in the design supports about 10 cm scanning around it. By replacing the RFID reader with long range reader, the process of scanning and identifying can be done automatically without requiring students to put his/her ID near the RFID reader. The system can be improved by replacing the EEPROM with flash memory to provide more memory space. The system is portable because the size is small and it provide two way power where adaptor power supply can be replaced by battery to power up the circuit. The portability of the system allows it to be placed on every type of classroom. A simple but effective system has been designed for the convenience of students using the spliced technology and a prototype to prove the feasibility and demonstrate the features that has been developed. The idea is beneficial to both the student and the university system depending upon its effective implementation as it shows in the seeds to develop various real projects.

Keywords: RFID Reader, RFID Tags, Attendance Recorder, Wiegand Interface