ABSTRACT

The aim of the study was to create an automation system for the department's computer laboratory; preventing unwanted energy consumption and to save energy; and enhancement of learning environment for both instructors and students of the Department of Information Technology. The proposed device was created using Arduino uno, breadboard, sensors, actuators, RFID modules such as passive buzzer, RFID key card, tags, RFID reader, and 12v led, and to execute the codes, Arduino has Integrated Development Environment (IDE) software which completely supports C++ programming languages. The device was assigned to control the electricity with in the particular laboratory in which the Department of Information Technology has two (2) computer laboratories, the com lab 1 and com lab 2, the device was placed inside the computer laboratory where the instructor or faculty tapped the RFID key card or tag to the RFID reader attached to the device that will read if the key card was authorized & registered to it, once it was able to read the card it automatically distributed the electricity inside the laboratory, the personal computer, wireless fidelity, lights, air-condition, television, and etc. The device was created to solve the problem of the Department of Information Technology in which the students are like to leave the computer laboratories utilities turned on such as the personal computer (PC), aircons (AC), lights, fans, and etc. The proposed device the computer laboratory automation system based on Arduino seems to be a very effective and adaptable way to improve the administration and operation of contemporary learning environments.