RESEARCH ARTICLE OPEN ACCESS

Mobile Operated Classroom

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Abstract:

IN THIS MINI PAPER, WE ARE GOING TO PRESENT THE CONCEPT OF MOBILE OPERATED CLASSROOM. I.E. THE POWER TRANSFER HANDLING OPERATION BY USING MOBILE PHONE. THE IDEA WHICH IS DISCUSSED HERE IS ABOUT MOBILE PHONE BASED CLASSROOM AUTOMATION. THIS AUTOMATION IS BASED ON ARDUINO BT BOARD AND APPLIANCES CONNECTED TO THE INPUT-OUTPUT PORTS OF THIS BOARD VIA RELAYS. THE COMMUNICATION BETWEEN PHONE AND BT BOARD IS WIRELESS. THE REASON OF IMPLEMENTING THIS TECHNOLOGY IS DISTURBANCE CREATED DURING SESSION.

Keywords **—Automation**

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I. INTRODUCTION

IN MOBILE OPERATED CLASSROOM IT IS CONVENIENT TO OPERATE ALL THE SWITCHES ON MOBILE PHONE. IT IS MORE RELIABLE. NOW A DAY IF WE SEE IN CLASSROOM VERY FEW EQUIPMENTS ARE PLACED. WHEN ANY TEACHER IS TEACHING ANY SUBJECT OR IF THERE IS ANY GUEST LECTURE THEN FOR STUDENTS CONVENIENCE FANS ,TUBES AND PROJECTOR IS OPERATED AND IF ANY FAN OR TUBE IF WANTS TO OFF THEN WE HAVE TO GO TO THE ELECTRIC-SWITCH BOARD AND MAKE IT OFF, WHICH MAY DISTURB THE GUEST OR TEACHER WHILE TEACHING. IF YOU ARE USING AN ELECTRONIC DEVICE PERHAPS A MOBILE PHONE AND YOU ARE VERY TIRED ALSO ATMOSPHERE IS TOO HOT AND YOU ARE NOT WANTED TO DISTURB YOU TEACHER BEACAUSE HE IS TEACHING YOU VERY IMPORTANT TOPIC AND YOU WANTED TO TURN ON THE FAN BY SEATING ON A SAME PLACE HOW IT WOULD BE MAKE POSSIBLE? THAT MEANS HOW TO TURN ON THE SWITCH WITHOUT LEAVING YOUR PLACE. THIS IS POSSIBLE THROUGH A CONCEPT CALLED MOBILE OPERATED CLASSROOM. RESEARCH AND STUDIES HAVE BEEN DONE EVER SINCE THE 19TH CENTURY BUT IT IS ONLY RECENTLY THAT THIS CONCEPT HAS BEGUN TO BE IMPLEMENTED.

II. LITERATURE SURVEY

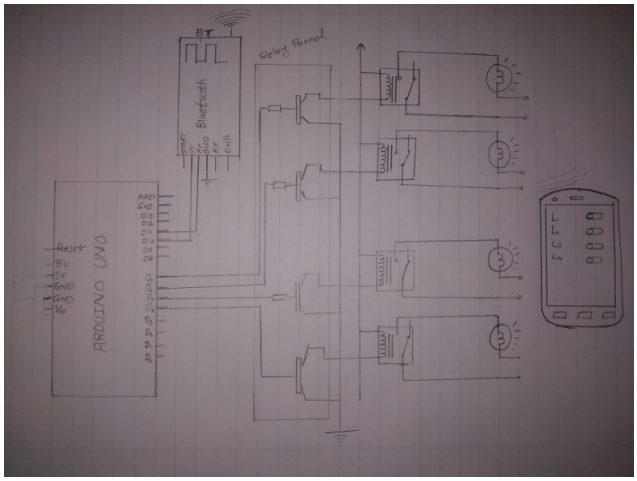
In the proposed paper, smart home automation system using arduino by T. Sivranjani to conserve energy daily to conserve our energy and to overcome the situation a system is to be proposed such that the electrical appliances should be turned OFF when not in use. It is difficult for the user to switch OFF the electrical appliances when the switches are located far away from them. So a system is needed to operate the electrical appliances from a distance. All of us need to conserve energy but the great deal is finding out the best ways to conserve energy and save power. Many methods are proposed for this conservation strategy. But the

system is proposed at low-cost to unplug the fans and light when it is not in the use.

After that Home appliances control system based on Android smart phone was introduced at May-2014 which preferred techniques like PIC controller and the bluetooth. The Smart home system for disabled people via wireless bluetooth gives money wise concept by using GPRS as the medium to control and monitor home appliances. A user logs into the smart phones interfaces, and clicks the buttons gently to send message commands which will be transmitted to the home information centre through the GSM network. Then the PIC processor recognizes the specified commands, and controls the home appliance switches in the wireless radio frequency manner to achieve remote control of appliances ultimately. Exploiting Bluetooth on android mobile device for home security application present the information about mobile device has been integrated into our everyday life. Home automation and the security are becoming the increasingly prominent features on mobile devoices the mobile device and security system communicates via Bluetooth because a short-range-only communication system was desired. With the help of android mobile we can control tasks such as locking the doors, turning on/off lights remotely. According home automation can be useful to those who need to access home appliances while away from their home and can improve the lives of the disabled.

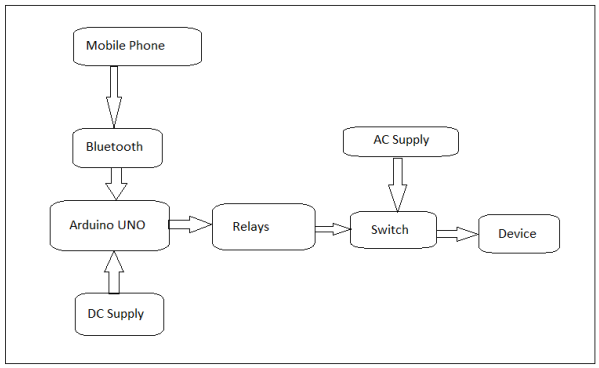
III. SYSTEM DESCRIPTION

1.Circuit Diagram



- 5V Ac adapter to Arduino UNO.
- RX of Arduino UNO to TXD pin of Bluetooth module.
- TX of Arduino UNO to RXD pin of Bluetooth module.
- 5V power supply to VCC of Bluetooth module.
- D2-D13 pins of Arduino UNO to the relays with sequence.
- AC power supply to switches
- Mobile phone to Bluetooth module using the “Bluetooth Switches” application.
- Ground connection to each device.

2. Block Diagram

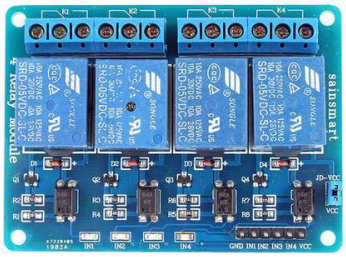


2.1 Arduino UNO

Arduino UNO is ATmega328P microcontroller. It have 14 digital pins and 6 analog pins and programmable with Arduino IDE via type B USB cable. It requires power by a USB cable or by an external 9 volt battery, though it accepts voltages between 7 and 20 volts.

2.2 Relay

To control 4 bulbs we are taking 4 channel relay board,in it each one needs 15-20mA driving current. It can br controlled by 12V or 5V input voltage. It is equipped with high current relay AC-250V10A, DC-30V10A



2.3 Bluetooth Module

The Bluetooth module HC-05 is used for the wireless communication between Arduino Uno and smartphone. HC-05 is a slave device and it can be operates at power 3.6 to 6 volts. It has 6 pins-State, RXD, TXD, GND, VCC and EN. For serial communication connect TXD pin of Blue tooth module HC-06 with RX (pin 0) of Arduino Uno and RXD pin with TX (pin 1) of Arduino Uno. Connection diagram of the Adriano and Bluetooth (BT) module is illustrated.

2.4 Software Requirement

The Arduino microcontroller is easy to use yet powerful single board computer that has gained considerable traction in the hobby and professional market. The Arduino is open source, which means hardware is reasonably priced and development software is free also easily available. This guide is for students anywhere who are confronting the Arduino for the first time.For the advanced Arduino users, prowl the web; there are the lots of resources. The Arduino project was started in Italy to develop

the low cost hardware for interaction design. An overview this is on Wikipedia entry for Arduino.

IV.CONCLUSIONS

In this project presenting a new system is design. By using Android application via bluetooth, electronic switch like Lights, Fans, Projectors, etc ON/OFF control system can be designed. Anyone can operate this system because of its user friendly GUI from anywhere in the classroom. As per the securities point of view, we provide access code for Bluetooth. So the system helps user to reduce efforts and making classroom more intelligent.

V.REFERENCES

- T. Sivranjani "Smart Home Automation System "Year 2017.
- "Home Appliences Control System" Year 2014
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