**AUTOMATIC ROOM LIGHT CONTROLLER WITH VISITOR COUNTER USING IR SENSOR**

**DESCRIPTION:**

To save and control the power consumption by controlling lights in a room automatically by using 8051 microcontroller.

By using this project we can save the power in a room by using 8051 [AT89C51] controller. In this project we can control the appliances in consideration of the number of people inside the room to save the power. To detect the number of people inside the room we are using IR sensors at the entrance and exit as shown in block diagram. We will fix this IR sensor at the entrance and exit of the particular place such that if any obstacle came in front of the transmitter, the emitted IR rays fall on the IR receiver.

Whenever the sensor [IR receiver] at the entrance is activated the count corresponding to the number of people inside the room will be increased and in opposite case if IR receiver at the exit is activated and count will be decreased. We continuously monitor the IR sensors at the entrance and exit by using the AT89C51 controller. In both cases the count will be updated with in very short time on the LCD and the buzzer gives an audio indication. Depending upon the count the lights will be automatically turned ON/OFF. For first five people load 1 will ON, for next five people load 2 will ON and loads will be ON according to count of people. If count decreases then lights will be OFF automatically according to every five count of people.

This project uses regulated 5V, 500mA power supply. 7805 three terminal voltage regulator is used for voltage regulation. Full wave bridge rectifier is used to rectify the ac output of secondary of 230/12V step down transformer.

# TECHNICAL SPECIFICATIONS:

**HARDWARE:**

Micro controller : AT89x series

Crystal : 11.0592 MHz

LCD : HD44780

IR receiver

IR transmitter

LED

Buzzer

**Power supply**

Transformer : 12V step down

Filter : 1000uf/25V

Voltage Regulator : 7805, 7812

**SOFTWARE:**

Keil IDE

UC flash

Proteus

**APPLICATIONS**

* Shopping malls
* Automatic control systems

**BLOCK DIAGRAM:**

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Power Supply

Relay1

Load 1

Relay2

Load 2

IR Transmitter (at Entrance)

IR receiver (at Entrance)

IR Transmitter (at Exit)

IR receiver (at Exit)

16X2LCD

Buzzer

**POWER SUPPLY BLOCKDIAGRAM:**

Step down Transformer

Filter

Regulator

Output

Bridge Rectifier