

For more Project details visit:

<http://www.projectsof8051.com/automatic-room-light-controller-with-visitor-counter/>

Code	Project Title
1101	Automatic Room light Controller with Visitor Counter

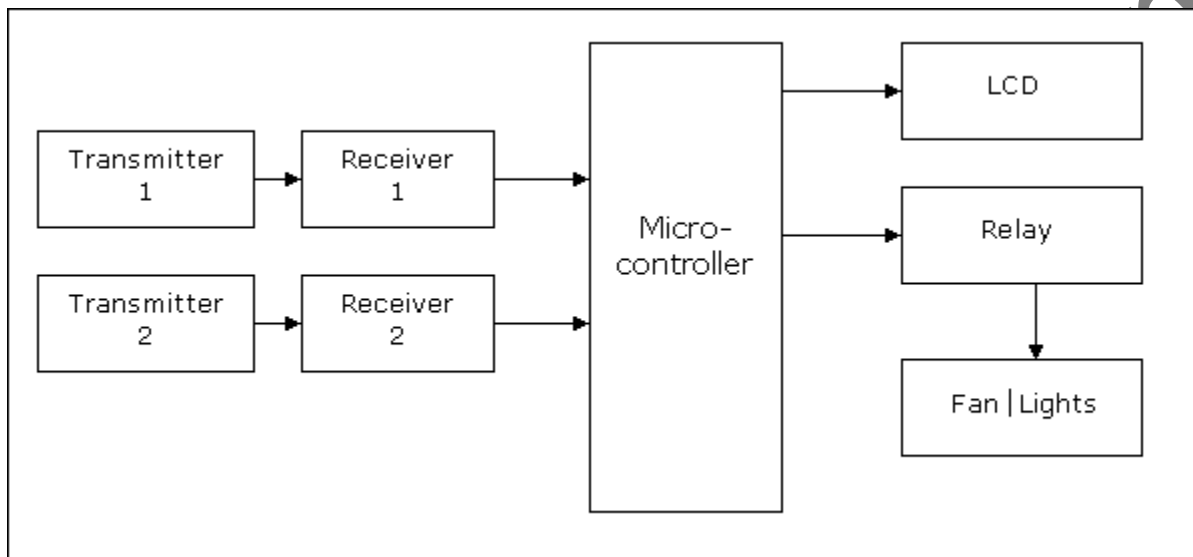
## Synopsis for Automatic room light controller with visitor counter

### 1. Introduction

Electricity is one of the most important resources in this century. We should conserve the electricity. But many times we come outside the room/hall and forget to turn off the lights/fan, thus the electricity is wasted.

To overcome this we are going to implement a project called “Automatic room light controller with visitor counter”. This project has 2 modules. First module is “Visitor counter” and the other module is “Automatic room light controller”. Main concept behind this project is to measure and display the number of persons entering in any room like seminar hall, conference room. And when number of persons inside the room is zero, power supply inside the room can be cut using a relay interface. This will help to save electricity. LCD display placed outside the room displays number of person inside the room.

## 2. Block Diagram



## 3. Block Diagram Description

**1. Transmitter:** We are going to implement the Person counter module using 2 transmitters and 2 receivers. We are going to use Infra-Red transmitters because infrared beams are not visible to human eyes. Transmitters used are IR LEDs

**2. Receiver:** We are going to use an Infrared receiver. It is an active low device which means it gives low output when it receives the Infrared rays.

**3. Microcontroller:** This is the CPU (central processing unit) of our project. We are going to use a microcontroller of 8051 family. The various functions of microcontroller are like

I. Reading the digital input from two infrared receivers and calculate the number of persons from them.

II. Sending this data to LCD so that the person operating this project should read the number of persons inside the room. III. Sensing the password using keypad and to check whether it is a correct password or a wrong password and rotate the stepper motor if the password entered is a correct password. IV. Sending the data to the computer using serial port. This data consist of number of persons inside the room and the status of entered password (Correct/wrong)

**4. LCD:** We are going to use 16x2 alphanumeric Liquid Crystal Display (LCD) which means it can display alphabets along with numbers on 2 lines each containing 16 characters.

**5. Relay:** We are going to use 12 volt relay to activate/deactivate the room lights.

## **Application and Advantage:**

1. Can be used in various rooms like seminar hall, where the capacity of room is limited and should not be exceeded. Project will display the actual number of persons inside the room.
2. Can be used in conference room, study rooms in colleges.

## **Future Development:**

1. We can send this data to a remote location using mobile or internet
2. Voice alarm system can be added to indicate that room is full & persons can't enter inside.