



## HOSTEL POWER MANAGEMENT AND SECURITY SYSTEM

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### ABSTRACT

Electrical energy is the most expensive and the most important from of purchased energy.it is very difficult to overcome the increasing demand of electrical energy. So, conversation of energy is very important for developing countries. By this project electrical energy can be saved and made cost efficient for hostel building (rooms).the selection of hotels was done because electrical energy was consumed in major amount of the overall energy used. System is designed for optimum energy usage by monitoring no. of person present in the room. If someone is present the power switch gets on or vice-versa.so this system is very efficient.

**Keywords:** Power supply, AT-Mega 328, Wi-Fi Module, Web Page Designing Finger Print Scanner.

### I.INTRODUCTION

Past few years the number of educational institutions is increasing rapidly. Therefore the number of hostels is also increasing for accommodation of the students. Energy conservation is an increasingly important issue for the hostel management. "HOSTEL POWER MANAGEMENT AND SECURITY SYSTEM" is software developed for managing automatic power OFF activity in hostel rooms. The system monitors status of rooms that is it empty or someone present in the room by means of sensor/counter inside or outside the door. Each pair consists of 2 sensor pairs placed at a certain distance from one another in the opposite direction. The IR transmitter is used to transmit IR rays straight to the receiver which receives the input and feeds this to an AT-Mega328, Microcontroller. AS soon as a person enters into the room, it is detected by the IR sensor module and this info is fed to the microcontroller. The microcontroller process this input received and switches on the load. At this time the system also counts the number of people present and increments a counter on each arrival, this count is displayed on a 7 segment display. As soon as the last person exits the room, the sensor detects no presence and hence switches off the load/lamp. Finger print scanner it is used to scan he finger of student and gives the attendance of the student display on the web page, when student is enter into the hostel and also in-time and out-time of the student recorded on webpage.

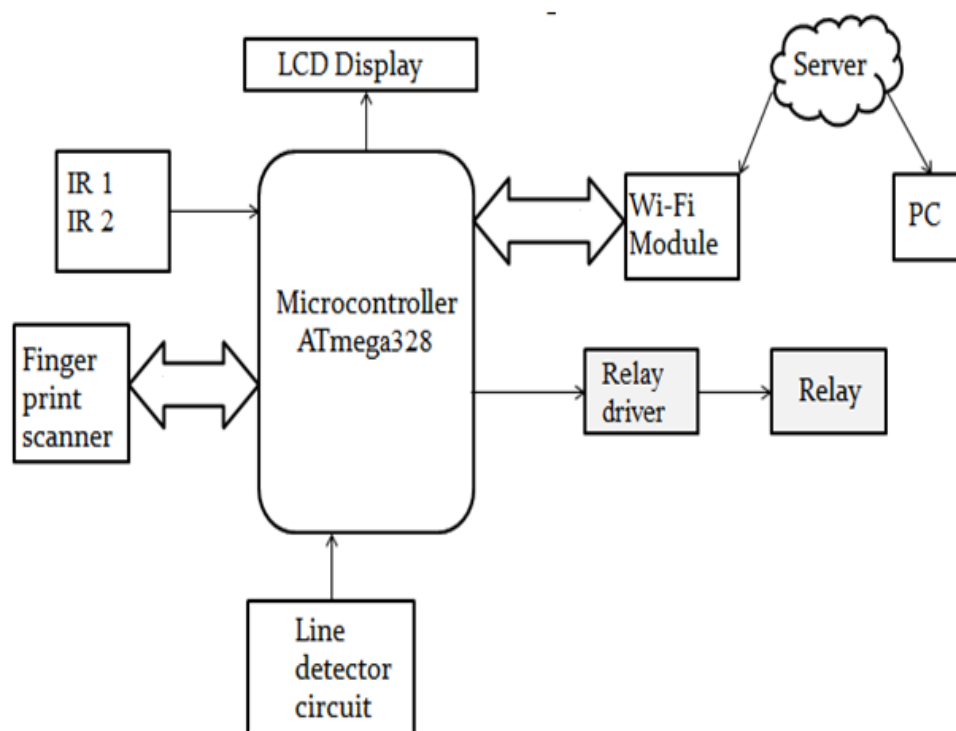
- IR Sensor-  
IR Sensor it is used to sense the presence of person & absence of person in the room.
- Microcontroller AT-Mega 328-

AT-Mega 328 it is used to count the person. Present in the room & also decreased the counter according to the automatically ON&OFF the light status.

- LCD Display-  
16\*4 LCD displays it is used to display the count by using AT-Mega 328.
- Wi-Fi Module-  
Wi-Fi module it is used to display the count & light status on the web-page designing.
- Finger print module-

It is used to scan the fingers of the student enter into the hostel & take the attends of student & also in time&out time of student when student live into the hostel. This is also display in web-page designing.

## II.BLOCK DIAGRAM



## III.WORKING

The above Diagram is representing the block diagram of "Hostel Power Management and Security System". Which is separated in some part's Dc-Power supply part, sensing part, control part and output load. When the student enters into the Hostel to scan the finger by using the finger print scanner then entry on the student is recorded on the webpage. It gives the attendance of the student and record when student come into the hostel record in-time of the student goes into the hostel record out-time. Display on webpage by using Microcontroller and Wi-Fi module. The system monitors status of rooms that is it empty or someone present in the room by

means of sensor/counter inside or outside the door. Each pair consists of 2 sensor pairs placed at a certain distance from one another in the opposite direction. The IR transmitter is used to transmit IR rays straight to the receiver which receives the input and feeds this to an AT-Mega328, Microcontroller. AS soon as a person enters into the room, it is detected by the IR sensor module and this info is fed to the microcontroller. The microcontroller process this input received and switches on the load. At this time the system also counts the number of people present and increments a counter on each arrival, this count is displayed on a 7 segment display. Then room count is zero relay is on this indicate light in the room is on this time microcontroller gives the information to Wi-Fimodule. The Wi-Fi module displays the light status and count of the student on webpage. As soon as the last person exits the room, the sensor detects no presence and hence switches off the load/lamp.

#### IV.CONCLUSION

This project is used to implement for the consume the power in hostel rooms & security purpose of the hostel.

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#### V.RESULT

