AUTOMATIC ROOM LIGHT CONTROLLER

Reference : [(DOC) A PROJECT REPORT ON AUTOMATIC ROOM LIGHT CONTROLLER WITH VISITOR COUNTER IN THE PARTIAL FULFILMENT OF THE REQUIRMENT FOR THE DEGREE | ila gupta - Academia.edu](https://www.academia.edu/7206198/A_PROJECT_REPORT_ON_AUTOMATIC_ROOM_LIGHT_CONTROLLER_WITH_VISITOR_COUNTER_IN_THE_PARTIAL_FULFILMENT_OF_THE_REQUIRMENT_FOR_THE_DEGREE)

The objective of the project was to make a controller based model to count number of persons visiting particular room and accordingly light up the room. Here they used a sensor and can know present number of persons.

In today’s world, there is a continuous need for automatic appliances with the increase in standard of living, there is a sense of urgency for developing circuits that would ease the complexity of life.Also if at all one wants to know the number of people present in room so as not to have congestion. This circuit proves to be helpful.

This Project “Automatic Room Light Controller with Visitor Counter using Microcontroller is a reliable circuit that takes over the task of controlling the room lights as well us counting number of persons/ visitors in the room very accurately. When somebody enters into the room then the counter is incremented by one and the light in the room will be switched ON and when any one leaves the room then the counter is decremented by one. The light will be only switched OFF until all the persons in the room go out. The total number of persons inside the room is also displayed on the seven segment displays.

The microcontroller does the above job. It receives the signals from the sensors, and this signal is operated under the control of software which is stored in ROM. Microcontroller AT89S52 continuously monitor the Infrared Receivers, When any object pass through the IR Receiver's then the IR Rays falling on the receiver are obstructed , this obstruction is sensed by the Microcontroller.

2. Automatic Street Light Control System Using Microcontroller

Reference : [Microsoft Word - OTEMA-first.doc (wseas.us)](http://www.wseas.us/e-library/conferences/2013/Antalya/OTEMA/OTEMA-11.pdf)

The idea of designing a new system for the streetlight that do not consume huge amount of electricity and illuminate large areas with the highest intensity of light is concerning each engineer working in this field. Providing street lighting is one of the most important and expensive responsibilities of a city. Lighting can account for 10–38% of the total energy bill in typical cities worldwide.

This paper elaborates the design and construction of automatic street control system circuit. Circuit works properly to turn street lamp ON/OFF. After designing the circuit which controls the light of the street as illustrated in the previous sections. LDR sensor and the photoelectric sensors are the two main conditions in working the circuit. If the two conditions have been satisfied the circuit will do the desired work according to specific program. Each sensor controls the turning ON or OFF the lighting column. The street lights has been successfully controlled by microcontroller. With commands from the controller the lights will be ON in the places of the movement when it's dark. furthermore the drawback of the street light system using timer controller has been overcome, where the system depends on photoelectric sensor. Finally this control circuit can be used in a long roadways between the cities.

Android Based Home Automation System

Reference: [Android Based Home Automation System (ijser.org)](https://www.ijser.org/researchpaper/Android-Based-Home-Automation-System.pdf)

In the present scenario the majority of switching operations are manual and do not imbibe the idea of IOT and the interconnection of various applications to help optimize operation. These days there is a clear divide between electrical and software systems, and this leads to inefficient and often incompatible processes. To solve this dearth in integration of a variety of applications, this project of Home Automation aims to use a modem that brings all switches and control to the user in one place.

Smart Home Systems give interface between different kinds of home and electrical devices like bulbs, TVs, fans, curtains and so forth. This system gives control and convenience of the devices to the client according to client's requirements. Subsequent to breaking down other existing frameworks, we propose the novel system for better human association and for giving better usage of android and arduino. By utilizing home computerization framework we can oversee cost, adaptable and vitality proficient savvy homes. The home computerization framework has been tentatively demonstrated to work palatably by associating test machines to it and the devices were effectively controlled from a remote cell phone. The Bluetooth customer was effectively tried on a huge number of various cell phones from various producers, accordingly demonstrating its versatility and wide similarity. This undertaking won't just give accommodation to the normal man yet will be a help for the elderly and debilitated.

### **TEMPERATURE BASED FAN SPEED CONTROLLER**

Reference: [TEMPERATURE BASED FAN SPEED CONTROLLER (slideshare.net)](https://www.slideshare.net/TarekErin/controllr)

The idea behind this project is to control the speed of fan using microcontroller based on variation in temperature. temperature controlled fan is an alternative way to deal with the speed of the motor. Temperature control is a process in which the temperature of an object is measured and the passage of heat energy into or out of the object is adjusted to achieve a desired temperature.

 • We can monitor more parameters like humidity, light and at the same time control them. •We can send this data to a remote location using mobile or internet. We can draw graphs of variations in these parameters using computer. •When temperature exceeds the limit, a call will be dialed to the respective given number by an automatic Dialer system.

AUTOMATIC FAN SPEED CONTROL SYSTEM USING ARDUINO

Reference: [IJNRD1704020](http://www.ijnrd.org/papers/IJNRD1704020.pdf)

As we all know that we are slowly moving toward automation and Automation is one of the trending topics. So basically in this project we will be controlling fan speed with respect to the temperature. The system will get the temperature from the temperature Sensor and it will control the speed according to the temperature, set by the user. In this project, microcontroller forms the processing part, which firstly senses the temperature and the controller then compares the data with the set temperature. If the current temperature is greater than the set temperature, the controller turns ON the fan and the set speed will be proportional to the difference between the set temperature & the current temperature. If the current temperature is less than the set temperature, the fan will be turned OFF .The fan’s speed will change according to the temperature.

This paper elaborates the design and construction of fan speed control system to control the room temperature. The temperature sensor was carefully chosen to gauge the room temperature. Besides, the microcontroller had been used to control the fan speed using the fan speed in rpm and the arduino was successfully programmed using C/C++ Language to compare temperature with standard temperature and set fan speed and their values displayed on LCD. Moreover, the fan speed will increase automatically if the temperature room is increased. As conclusion, the system which designed in this work was perform very well, for any temperature change and can be classified as automatic control.

DESIGN AND DEVELOPMENT OF ARDUINO BASED AUTOMATIC FAN CONTROL SYSTEM USING PIR AND LM 35 SENSOR

Reference: [Design and Development of Arduino based automatic fan control system using PIR and LM 35 sensor (globalscientificjournal.com)](https://www.globalscientificjournal.com/researchpaper/DESIGN-AND-DEVELOPMENT-OF-ARDUINO-BASED-AUTOMATIC-FAN-CONTROL-SYSTEM-USING-PIR-AND-LM-35-SENSOR.pdf)

As we know that automatic system and automation is the requirement of today’s technology. We are moving toward automation day after day. It is one of the tending topic. So in this project we will provide two functions. First one is, control the turned on/off the fan with respect to the human detection rather than the use of manual switching system. Other function is control the speed of a fan with respect of temperature set. In this project Arduino Uno forms the processing part. Which firstly detect the human with the use of PIR sensor and senses the temperature with the use of LM35(Temperature sensor). Arduino Uno senses the temperature and control the speed with the set temperature. This is set by the user. When the current temperature is greater than or equal to the set temperature the fan turned on otherwise it will stay off. For turning on here should be two condition supposed to be true. One is object detection and other one is temperature should be appearing at set temperature. After turning on the fan speed will be change accordingly with temperature. Whenever the temperature will be increase fan speed will be increase. This paper presentation will present the whole working process of our system. There are six (6) portions in this paper. Introduction part has detail introducing of the project, objective of our system, justification to make the project and about the scope of the project. Literature review has some review about the relevant project of our field. Methodology has detail description about the workflow which we used during the time of project completion. We gave here the justification of using the workflow as well. We have discussed about hardware requirement, Software requirement, block diagram, description of the component used in the project and about the flow chart. And described why this project will matter to the user. We also have discussed that how much effective of our project in practical life. In the conclusion we gave some statement about the limitations and the scope of future enhancement of the project.

This paper elaborates the design and construction of fan speed control system to control the room temperature and turned on/off control automatically with the human detection. The temperature sensor was carefully chosen to gauge the room temperature, and motion sensor was chosen for detect the human Besides, the microcontroller had been used to control the fan speed using the fan speed in rpm and the Arduino was successfully programmed using C/C++ Language to compare temperature with standard temperature and set fan speed and their values displayed on LCD. Moreover, the fan speed will increase automatically if the temperature room is increased. As conclusion, the system which designed in this work was perform very well, for any temperature change and can be classified as automatic control.

[1] Amul Jadhav developed an application in a universal XML format which can be easily ported to any other mobile devices rather than targeting a single platform.

[2] Shiv Kumar designed a prototype in which the master controller of smart-home system supports both Bluetooth and Internet connectivity.

[3] Er. Vikram Puri has proposed a working protocol of PIC Technology utilizing PIC 16F877A microcontroller. Also their wireless communication ranges from 10m – 30m.

[4] Prof.H.B.Shinde, Abhay Chaudhari, Prafull Chaure, Mayur Chandgude, Pratik Waghmare designed a model using Arduino Atmega328 controller and ESP8266 WiFi module for wireless communication.

[5] Alper Gurek, Caner Gur, Cagri Gurakin, Mustafa Akdeniz, designed an Android based home automation system that allows multiple users to control the appliances by an Android application or through a web site.

[6] Mohd Nor Azni designed a home automation system in which web interface has framework known as Restful Api and function as to control Raspberry Pi using an http request. Besides that, Android apps will exploit the services provided by Restful Api for controlling gpio of Raspberry Pi.

[7] 1P.Siva Nagendra Reddy, 2K.Tharun Kumar Reddy the main feature of their system is to control the voltage levels of home appliance in home like speed of fan based on temperature, intensity of light based on light intensity etc. and another feature is we may get the status of our home appliances from our android mobile phone.

Reference:

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2. Shiv Kumar, Member, IEEE, “Android Based Smart Home System with Control via Bluetooth and Internet Connectivity”, School of Engineering and Physics University of the South Pacific Suva, Fiji 2014.
3. Er.VikramPuri, IEEE, “Real Time Smart Home Automation based on PIC Microcontroller, Bluetooth and Android Technology”, Faculty- Embedded System & Robotics, Enjoin Technologies, Jalandhar 2016
4. Prof.H.B.Shinde, AbhayChaudhari, PrafullChaure, MayurChandgude, Pratik Waghmare, “Smart Home Automation System using Android Application”, Assistant professor, Dept. of Computer Engineering, Keystone school of engineering, Pune, India 2017’

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6. MohdNorAzni, M.N.H; “Home Automation System with Android Application”, School of Computer and Communication Engineering University Malaysia Perlis Perlis, Malaysia 2016.

7. P.SivaNagendra Reddy, K.Tharun Kumar Reddy, P.Ajay Kumar Reddy, “An IOT based Home Automation Using Android Application”, Department of ECE,Kuppam Engineering College, Kuppam, Chittoor, A.P, India 2016