Automatic Classroom Light / Fan Control System

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Abstract*: A microcontroller is used to obtain values of physical conditions through sensors connected to it. In the automatic lamp system required sensors to detect the classroom light of the PIR (classroom PIR) sensor. This is because the classroom light intensity received by the existing PIR sensor in the room is blocked by the wall of the house or by other objects. Then for the fan, it can also turn on automatically when the temperature is greater than 27°c,28°C, and the fan speed can also be adjusted. The fan may also turn off automatically when the temperature is less than equal to 27°C,28°C it also can be used automatically fire detector and automatically visitor PIR shown in the LCD display controlling by the sensor.*

Keywords: Microcontroller

I. INTRODUCTION

The principle behind this is very simple that is to turn manually high and to turn off the fan when temperature is low this is achieved which increases or decreases the resistance value. This method is innovative saves most of the time and energy control is and this way of using becomes inefficient when the temperature has to be monitored over longtime ranges. So a new method of automatic control of fan speed using the wastage temperature sensors on the fan when temperature can be achieved conventionally used fans speed can be controlled by using the regulators which is the old and burdensome method. Develop a product that can control the speed of the fan based on temperature the room. IR and photo diode and LCD.IR sensor is continuously emit the signal and photo diode is observes.

The microcontroller one and when any one leaves the room then the PIR is decremented by does the above job it receives the signals from the sensors and photo diode is observes the signal if any obstacles comes in between the IR and PHOTO diode This project consists of micro controller, IR and photo diode and LCD.IR sensor is continuously emits the signal the output of the photo diode is given to the microcontroller the count value is shown on LCD

Goal:

Automatic classroom lights control and we started our project, our first target was to fix the goal we have been attracted to this project that contribute to the modern society there are many classroom lights in Bangladesh where electricity is wasted manual ways as the classroom lights are on but there is no man on the other hand the fans are control by temperature. the fans are automatic on temperature control fan visitor PIR lcd display fire detector in a classroom light based such and also used fire detector for fire safety .This project is low cost with effective and on the other hand we used digital visitor PIR which is used for counting present visitor shown LCD display competitive usage to be further this system is designed to be more users friendly and automatic to operate these systems are directed at specific applications is made to rotate at a speed proportional to the power. The project has also been designed working vision using minimum hardware at the lower level of processing.

Scope:

The smart classroom auto lights with bidirectional automatically turn on the classroom lights ina room when a person enters the room and turn it when the integral part of the automatic room classroom light circuit. We modified the project with LEDs man leaves the classroom light. Dubbed the project as a bidirectional visitor PIR it is an and as increase the person than the classroom light brightness is increase. Then used an LCD screen to monitor the temperature visitor counting the coding was design in microcontroller. The reading of microcontroller will be compared to other monitoring system

ISSN 2581-9429 IJARSCT

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II. OVERALL DESCRIPTION

Product Perspective:

Carefully, automatic classroom light microcontroller based project automatic classroom light on and off system and the fan, classroom light .By using this on or off the classroom lights in a classroom light electricity, being one of the most important resources must system, we can intentionally forget about the classroom lights as the system will automatically take care of perform certain tasks and fans. The most essential electronic device at home or classroom light or any other place automatically reducing human efforts, improving standard of living etc. the classroom light where there is a chance of fire accident is a fire alarm circuit. Where by using the fire alarm circuit, we can avoid financial loss and also save people from dangerous fire accidents.

Automatic Classroom Light Control

Is important as it will determine the functioning of the project. The sensor placed on the row- 1 of the sensors is named as sensor 1 and the sensor, which is placed on the row 2 is named sensor 2. And IR sensor and we have used three of them. The placement of the 1 detects the sensor classroom light. The main person first and then sensor 2 and then sensor 3 .This action will indicate the OP-Amplifier that the person is entering in the row 1,2,and 3. The sensor, which is placed on the row-3 is named sensor 3 when a person tries to enter the room.

Automatic Temperature Controlled Fan Using Thermistor

A type of transducer. In a broader in this paper for sensing the temperature thermistor has been used. Here also described that be controlled, based on temperature sensor.

A sensor is sense, a transducer is sometimes how the speed of a fan can defined as any devicethat converts energy from one form to another. Besides that, the component that made up the temperature. It can also be used to control the classroom light temperature, depending on the property of thermistor sensor is known as thermistor.

Thermistor is a kind of temperature dependent resistor and its resistance varies depending onthe temperature.

Automatic Fan Speed Control System Using Microcontroller ARDUINO

Controlling system are main part of the microcontroller LM35 sensor has been used for sensing. Microcontroller has been used instead of hard wiring a number of logic gates together to perform some function use instructions to wire the gates electronically. The list of these instructions microcontroller has been used instead of hard wiring a number of logic gatestogether to perform given to the microcontroller is called a program

Fire Detector.

Thermister we can used the simple fire alarm circuit can development on your own a solderless breadboard by following simple steps .fire alarm project is made for developing atemperature control system using thermister.
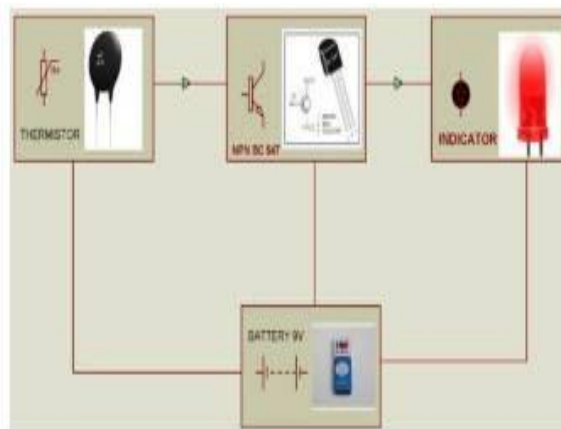

Fig 2.5: Fire Alarm System Block Diagram

Automatic Visitor PIR.

is Decremented by When somebody enters into the Room then the PIR is Incremented by one and when any One.Digital over the task of counting one leaves the room then the PIR visitor PIR is a reliable circuit that takes Number of Persons/ Visitors in the Room very accurately.The total number of Persons inside the Room is displayed on liquid crystal displays.. This project consists of micro controller, IR and photo diode and LCD.IR sensor is continuously emits the signal and photo diode is observes the signal if any obstacles comes in between the IR and PHOTO diode the output of the photo diode is given to the microcontroller the count value is shown on LCD.

III. SYSTEM ANALYSIS

System analysis involves examining the system's components, design, and functionality to optimize its performance and meet user needs. For the E-Shop System, the focus is on defining requirements, designing the system, and ensuring efficient operations.

IV. REQUIREMENT SPECIFICATIONS

Features Requirements: The E-Shop System offers a range of features to make online shopping easy for customers and manageable for admins. Customers can register, log in, and enjoy a personalized shopping experience. They can browse products by category, filter items based on different attributes, and search for specific products. The system also allows users to add products to their shopping cart, change quantities, or remove items. When ready, customers can go through the checkout process, enter dummy payment details, and complete their orders.

For administrators, there's a special dashboard that allows them to manage product listings, track orders, update inventory, and review sales reports. Additionally, automated email notifications keep customers informed about their registration, order status, and shipping updates.

- Reliability: The system's reliability is essential for smooth operation. If the server or database faces any issues, the system will temporarily stop processing orders. However, once the issue is fixed, it will resume its normal operations with minimal data loss. There will also be backup systems in place to recover data if anything unexpected happens.

- Availability: The system is available to authorized users only. Customers can browse and place orders after registering and logging in, while administrators have exclusive access to the admin panel to manage products and monitor orders. To keep the system always accessible, regular server maintenance and monitoring are carried out to ensure everything works smoothly.

- Portability: Since the E-Shop System is web-based, it can be accessed on any device with a modern web browser, such as Chrome, Firefox, or Safari. It works across different operating systems like Windows, MacOS, and Linux, as long as the necessary software (Java, MySQL, and Apache Tomcat) is installed. This ensures the system is flexible and can run on different platforms.

V. PROJECT DESCRIPTION

Problem Definition:

Carefully, automatic classroom light microcontroller based project automatic classroom light on and off system and the fan, classroom light .By using this on or off the classroom lights in a classroom light electricity, being one of the most important resources must system, we can intentionally forget about the classroom lights as the system will automatically take care of perform certain tasks and fans. The most essential electronic device at home or classroom light or any other place automatically reducing human efforts, improving standard of living etc. the classroom light where there is a chance of fire accident is a fire alarm circuit. Where by using the fire alarm circuit, we can avoid financial loss and also save people from dangerous fire accidents.

VI. CONCLUSION

In this project, we develop a general purpose of electronic circuit design that can Show the automatic CLASSROOM LIGHT intensity control and fan control temperature based LCD display shown the temperature and visitor PIR it can

be also used fire detector and alarm circuit This project is the overview of smart CLASSROOM LIGHT system The project is successfully developed and met the stated objectives.

Scope of Future Development:

The smart classroom auto lights with bidirectional automatically turn on the classroom lights in a room when a person enters the room and turn it when the integral part of the automatic room classroom light circuit. We modified the project with LEDs man leaves the classroom light. Dubbed the project as a bidirectional visitor PIR it is an and as increase the person than the classroom light brightness is increase. Then used an LCD screen to monitor the temperature visitor counting the coding was design in microcontroller. The reading of microcontroller will be compared to other monitoring system

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