

A Result on A Residential or Commercial Automation using Arduino

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ABSTRACT:

This paper is review on “” Home automation system is indeed a system that offers a mobile application to monitor it through the smartphone or tablet. It controls home appliances like lights, fans, air conditions, and smart security locks, Smart home is essentially how it looks: automating with such an easy touch of a button or a voice command the ability to manage things across the home etc .Bluetooth has always been a popular technology to be used in combination with mobile devices such as phones. Several operations were both simple and extremely low-cost, such as setting up a light to turn on and off at the time of your moment. Others need much more money and resources, including advanced spy cameras. Some people thought that technology is taking a really huge part of our lives. It does! we're living in a modern generation where smart and intelligent systems are necessary to be there wherever we are to make our lives easier and much better, for example, we can do many things faster, better, and more accurate.

KEYWORDS: Smart Home, Internet of Things(IOT), Smart Cities, Arduino, Mobile App

I. INTRODUCTION

Wireless communication and mobile technology are already well known or modified in modern

surveillance systems such as surveillance, intruder control, access control, fire detection, etc . A smart home is one that is equipped with lighting, heating, and electronic devices that

can be controlled remotely by the smartphone or via the internet. An bluetooth based home automation system are focused on controlling the home electronic devices if you are inside or outside your home Home automation gives an individual ability to remotely or automatically control things in a home. A home appliance is a device or instrument designed to perform a specific function, especially an electrical device, such as a refrigerator, for home purpose. Words appliance and devices are used interchangeably. Automation is today's invention, in which things are being controlled by automatically, and usually basic tasks of turning ON&OFF certain devices and beyond, either remotely or in close proximity [Automation lowers the human judgment to the lowest degree possible but does not completely remove it. this paper is about controlling home appliances smartly using new technology or Android enabled Smartphone. These applications can either be created according to the need of the user or pre-developed apps can be used. The Wi-Fi shield needs connection to the internet from a wireless router or wireless hotspot and this would act as the gateway for the Arduino to communicate with internet. With this in mind, an internet based home automation system for remote control of home appliances are designed.

II PROPOSED SYSTEM DEVELOPEMENT

A.Arduino Uno:-

Arduino Uno is a microcontroller chip depends on Atmega328(datasheet) with 14 computerized I/o pins, in which 6 pins can be utilized as yields, 6 pins are utilized as simple information sources .It has 16 MHz clay resonator , USB association, a power jack and a reset button. Microcontroller contains 32kB of ISP flash memory, 2kB RAM & 1kB EEPROM. Board provides serial communication capability via UART, SPI & I2C. Because of well design in form of arduino it is easy to understand. In Arduino we use high level of programming languages like C language, C++ language ect. It is easier to understand and user friendly language. It has more advantage like multitasking, automation, time domain etc. Arduino Uno fig3 (a) is given below.

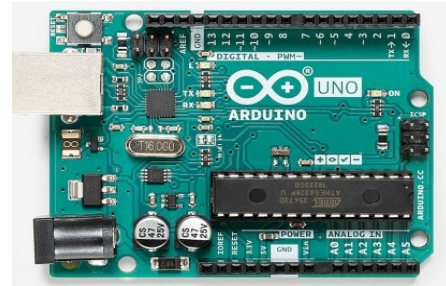


Fig 3(a)- Arduino Uno

B.Relay Module

Relay module are separate hardware device which is use for a remote device switching. By using it you can remotely control devices over a network or the Internet. Devices can be remotely powered by a a commands on or off coming from Clockwatch Enterprise delivered over a local or wide area network. You can control computers, peripherals or other powered devices which is acrossed office or across world. Relay module can be used to sense external On&Off conditions and to control a variety of external devices. PC interface connection are made through serial port. Relay module houses two SPDT relays and one wide voltage range, optically isolated input. These are brought out to screw-type terminal blocks for an easy field wiring. Individual LED's on front panel monitor input and two relay lines. Module is powered with an AC adapter.

The figure 3(d) of relay is given below.

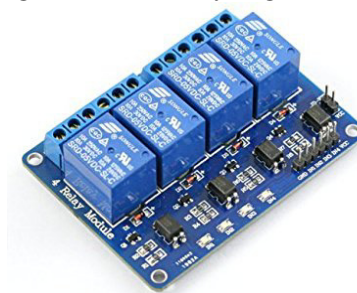


Fig 3(b) Relay module

C.Temperature sensor(LM35)

We connected LM35 as temp sensing device It outputs an analog signal which is proportional the instantaneous temperature.IT

is used for fan control for on/off We set some fixed amount of temp and if room temp reaches more then set value fan get on and room temp reaches value less then set value fan will off 5v supply is given to its vcc



Fig 3(c) Temperature Sensor(LM35)

D.Motion Sensor

A motion sensor (or motion detector) is an electronic device which detect movement. Sensitivity range: up to 20 feet (6 meters) 110° x 70° detection range 5V-12V input voltage for most modules It is used for making tubelight automatically on when motion happen near blackboard

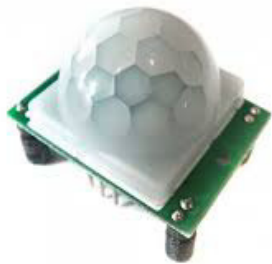
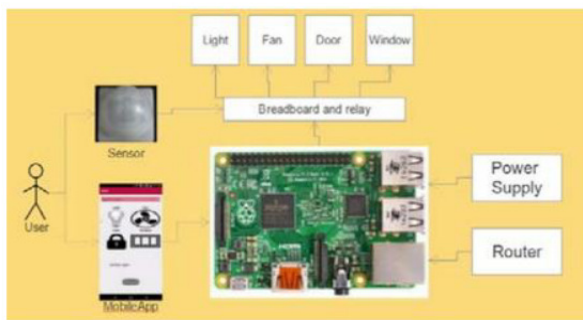


Fig 3(d) .Motion Sensor

E. Architecture of the system



Fig(e) Architecture of the system

IV.FUTURE SCOPE

By using arduino you can also make Automatic plant watering system for watering plant automatically when no one are at home or near that plant As the number of crimes are increasing every day, this will keep our home safe so we can also make Security alarm using arduino Automatic Pet Watering System it gives water by simple just read the water level in the water bowl and make our pet happier its also possible Smart Energy Saver for Your Home our aim is to minimize the loss of electricity there is when people forget to switch off their fans or lights, through smart home solution.

V.RESULT

Pir Sensor With Ardiuno For Auto Light On & Off

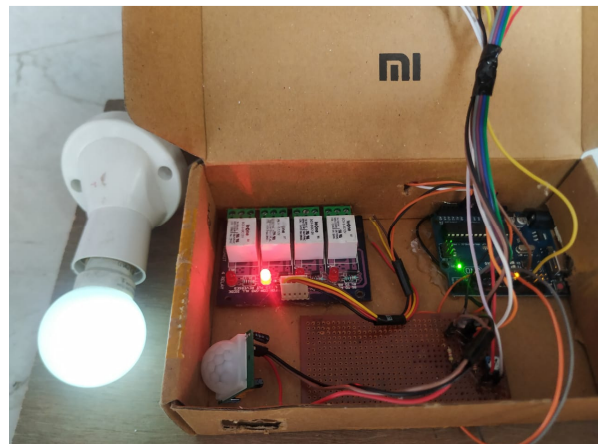


Fig (a) Pir Sensor With Ardiuno For Auto Light On & Off

Temp Sensor With Ardiuno For Auto Fan On &Off

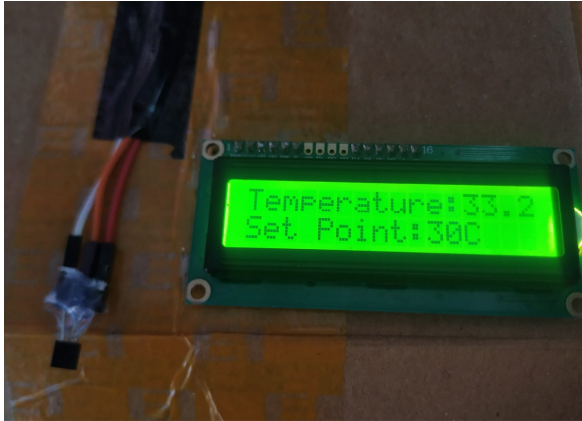


Fig (b)Temp Sensor With Ardiuno For Auto Fan On & Off

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VI.CONCLUSION

We have created a that type of device which are compact in size, low cost, & more capacity, long life & more distant signal receivers

In the future, on new technology can be included which reduces the efforts of humen which is being researched, we also talked about itThe need of this is to create a device which save energy and improves human life style

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