



Smart Home Automation using Iot

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Abstract: With the advancement of technology and more dependency of people on smart phone and increasing demands of easy and quick way of solving Daily life task, it has become very important to have a technology which can control over the domestic and industrial applications using IOT. Our work is to ‘Sensing and controlling the world around using Arduino and IOT ‘deals with embedded technologies along with internet of things (IOT) using Arduino which employs the embedded block and script programming for Arduino and sensors like Temperature sensor, LDR, Motion Sensor, WI-FI module.

In this work we present a home automation technique. The sensors will be interface with Arduino. The status of four home appliances will get uploaded to a cloud platform through wireless module. Our system and mobile should be connected over same wireless network. Our sensors will be able to enable or disable the sensors which will be in control of the user. This work will serve as an example of how IOT applications can make our life easier.

I. INTRODUCTION

Today, the increase in demand of service over the internet necessitated the data collection and exchange in efficient manner. In this sense internet of things (IOT) has promised the ability to provide the efficient data storage and exchange by connecting the physical devices via electronic sensor and internet. The IOT has created the revolution all over the world and fascinatingly it has become integral part of life.

Hence, this work utilizes Arduino fundamentals and some sensor to ease the way we control our homes appliances. This is achieved by interfacing sensors like Temperature sensor, LDR, Motion Sensor, with microcontroller-based system like Arduino UNO. The values from the sensor change the status of our appliances and the status of appliances can be seen on the cloud platform...

II. METHODOLOGY

Home automation is the process where the different sensors like Temperature sensor, LDR, Fire or smoke sensor will collect the data and depending on this data suitable action will take by itself Here whenever the temperature exceeds some threshold value the fan gets on whenever LDR sensors gets the data then lights will be off/on depending on the output of LDR depending on the output of the fire/smoke sensor data the buzzer will activate all this data all this data are uploaded to IoT cloud.

This system uses mobiles or computers to control basic home control and function automatically through internet from anywhere around the world globally, an automated home is sometimes called a smart home. It is meant to save the electric power and human energy. The proposed system is a distributed home automation system, consists of server i.e. Wi-Fi module, sensors. Server controls and monitors the various sensors, and can be easily configured to handle more hardware interface module (sensors).

The Arduino board, with built in Wi-Fi module acts as web server. Automation System can be accessed from the web browser of any local PC using server IP, or remotely from any PC or mobile handheld device connected to the internet with appropriate web browser through server real IP (internet IP). Wi-Fi technology is selected to be the network infrastructure that connects server and the sensors. Wi-Fi is chosen to improve system security (by using secure Wi-Fi connection), and to increase system mobility and scalability.

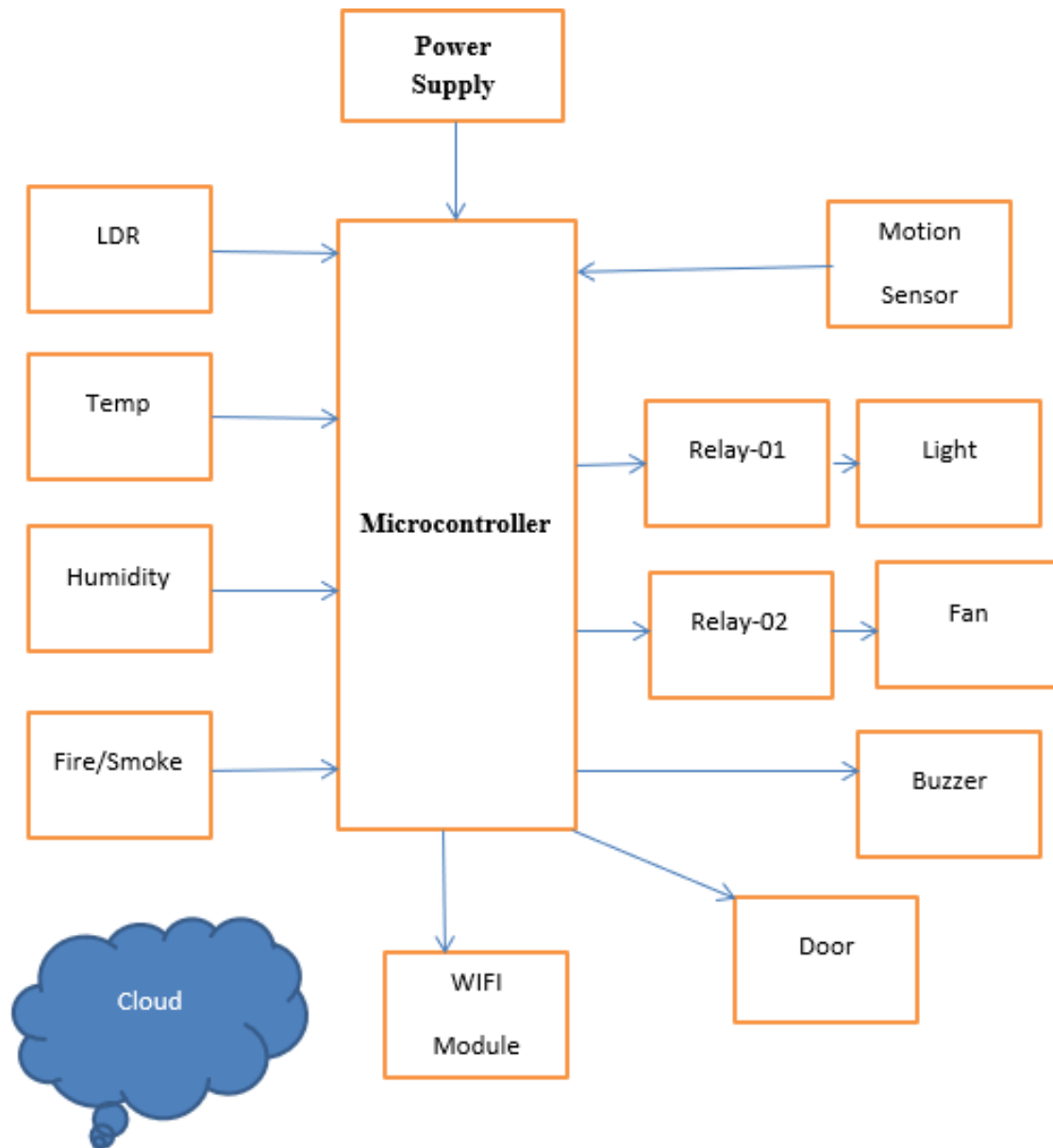


Figure 1: Block diagram of Home Automation

The important goal of Home Automation System is to build a home automation system using a RF controlled remote. Now technology is accelerating so homes are also getting smarter. Modern homes are deliberately relocating from current l switches to centralized control system, containing RF controlled switches. Today traditional wall switches situated in various parts of the home makes it laborious t for the end user to go near them to control and operate. Even further it turns into more problematic for the old persons or physically handicapped people to do so. Home Automation using remote implements an easier solution with RF technology. In order to accomplish this, a RF remote is combined to the microcontroller on transmitter side that sends ON/OFF signals to the receiver where devices are connected. By operating the stated remote switch on the transmitter, the loads can be turned ON/OFF globally using wireless technology.



III. RESULTS

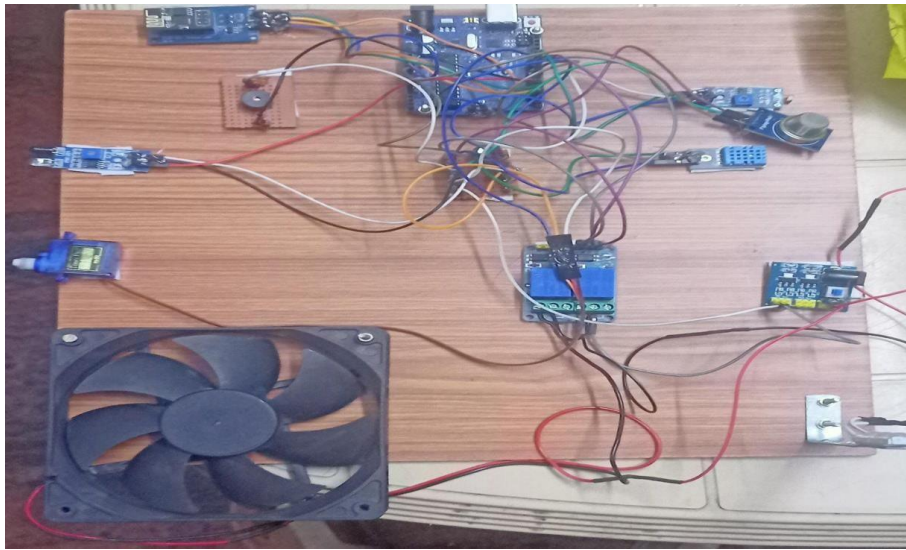


Figure 3:Components setup of home automation.

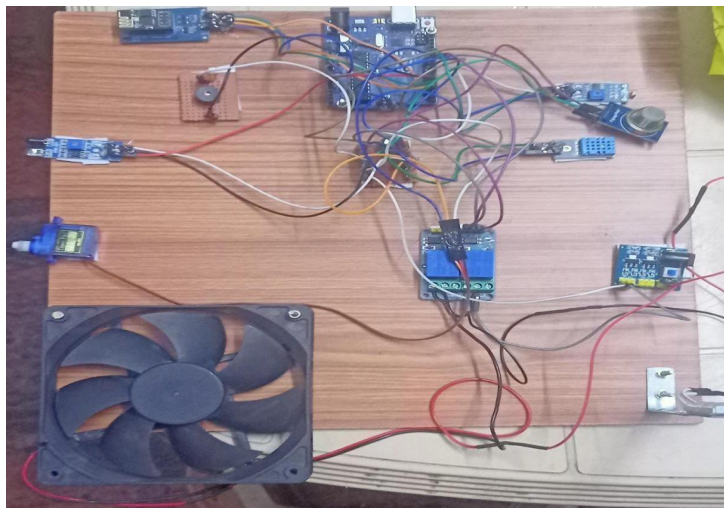


Figure 4: Initial condition of home automation



Figure 5: After process of home automation



IV. CONCLUSION

The IOT facilitates numerous benefits to the society and from our work we can provide and prove the strength of IOT that is capable to contribute the services for the purpose of building vast no. of applications and help to implement them on the public platform. This design provides moderate and less expensive way of sensing, monitoring and controlling system in the field of domestic and as well as industrial standard to implement IOT.

At a final note, we conclude that IOT leads to become universal in every aspect. This work will be very beneficial in our normal day to day life and will bring much needed innovation in his fast-changing world of technology where people prefer to have control over things using the smartphones which will bring ease to their routine life

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