e-ISSN: 2582-5208
International Research Journal of Modernization in Engineering Technology and Science
(Peer-Reviewed, Open Access, Fully Refereed International Journal)
Volume:04/Issue:04/April-2022 Impact Factor- 6.752 www.irjmets.com

CONTROLLING DEVICES USING IOT

Shubham Kulkarni*1, Saurabh Dighe*2, Nimisha Salunke*3

*1,2,3Department Of Electronics And Telecommunication, Maratha Vidya Prasarak Samaj's Karmaveer Baburao Ganpatrao Thakare College Of Engineering, Nashik, India.

ABSTRACT

In today's world automation are being introduced in various applications, so industries are switching more towards automatic system rather performing certain task manually to control the devices such as bulbs, fans, tube lights, etc. at offices, factory, home etc. smart classroom automation based on IOT on 2020 [2] controls lights, fans, & detect classroom temperature & humidity where as in proposed system in addition to control lights, fans, temperature & humidity system also provides information of power consumption. It is implemented using ESP32 WROOM microcontroller. This paper will present the compete variation of the new technology and modern automation system.

Keywords: Internet Of Things, ESP32 WROOM, Power Consumption, Temperature, Etc.

I. INTRODUCTION

The Internet of Thing (IOT) describes the network of physical objects, things that are embedded with sensors, actuators and software. It links or connects the object to object, objects to machines, machines to infrastructures, person to objects and so on. The world suffers from shortage of electricity to overcome this problem optimize ways of energy consumption are needed that save the energy. Automation focusses primarily on monitoring and controlling fans, lights. Now in this article focused on efficient automation in terms of energy process. IN this article radar senor, DHT11 are connected with ESP32 WROOM. By using mobile application we can also control this system. We can save the energy using this system.

Figure 1: Conference Room [8]

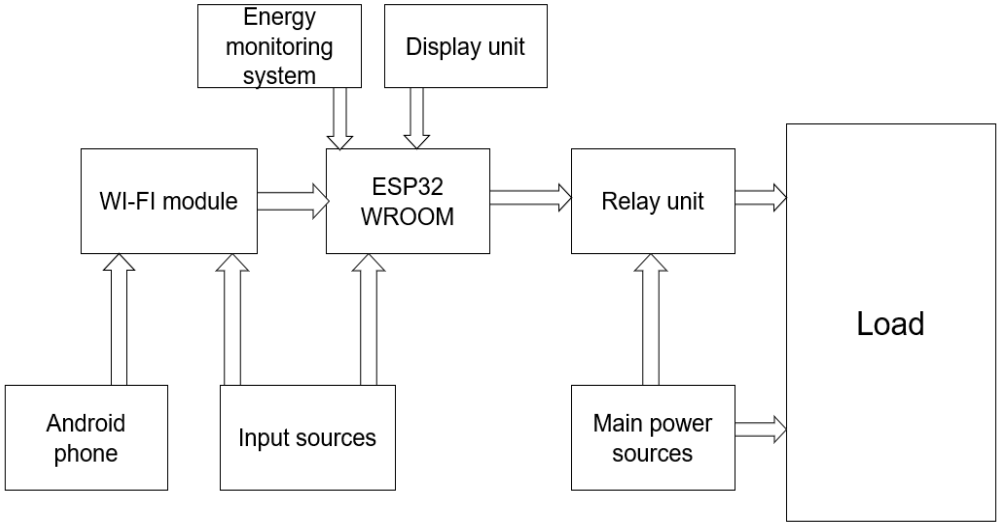

Figure 2: Block Diagram of System

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II. METHODOLOGY

In this proposed system we are using ESP32 WROOM as a main microcontroller, this microcontroller extract data from temperature, light, radar sensors. Controller receives the various input from different sensor and send this this signal to sever. Server receive this data of sensors and this update into data base. Whenever any one or multiple number of persons is entered in room the radar sensor detects it and send signal which is generated from this sensors and send it to microcontroller. According on that condition microcontroller will turn ON & OFF the various appliances like tube lights and fans. Also the fan speed is controlled depending upon room temperature. WI-FI module further expands the system to connect the software part of this project. This system monitors the live activities and on that motions device are controlled. And also here we are use the energy monitoring system that will show the total power consumption and how much energy is saved by using this system.

III. MODELING AND ANALYSIS

COMPONENTS	SPECIFICATIONS
1] ESP32 WROOM	Operating Voltage: 3.3V, I/O pins: 39, 12-bit controller
2] DHT11	Rated voltage: 3.3 - 5VDC & rated for full 0 – 50^C
3] I2C convertor	Resolution :8-bit, update rate: 188kbps, operating range: 2.7V to 5.5V
4] WI-FI module (ESP8266)	Power: 3.3V, 32-bit microcontroller

- ESP32-WROOM-32 is a powerful, generic Wi-Fi + Bluetooth + Bluetooth LE MCU module that targets a wide variety of applications, ranging from low-power sensor networks to the most demanding tasks, such as voice encoding, music streaming and MP3 decoding.
- The DHT11 is digital temperature and humidity sensor. It uses a capacitive humidity sensor and a thermistor to measure the surrounding temperature and spits out a digital signal on the data pin (no analog input pins needed).
- ESP8266 is Wi-Fi enabled system on chip (SoC) module developed by Espress if system. It is mostly used for development of IoT (Internet of Things) embedded applications.

IV. RESULTS AND DISCUSSION

Features of Proposed Results are:

1. The IOT provide great convenience for handling the devices
2. Time Saving Technology and energy saving technology

Input (temperature)	Output (fan speed)
21	Low(300RPM)
26	Medium(350RPM)
30+	High(390RPM)

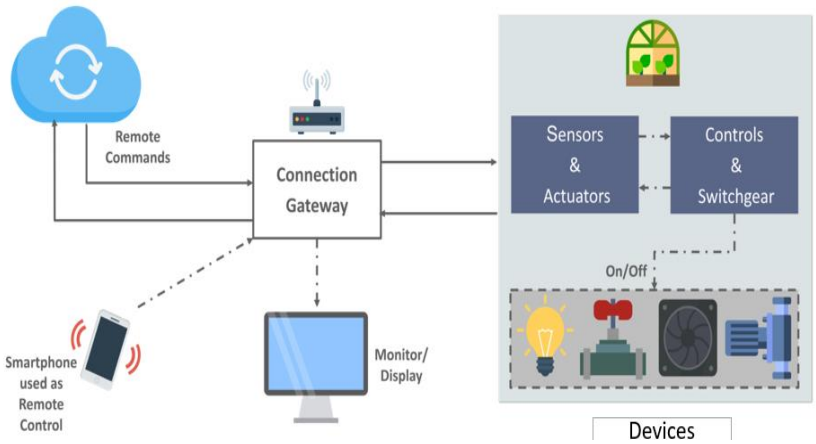

Figure 3: System diagram [7]

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V. CONCLUSION

IOT will become a reality in the near future, IOT in education is about the skill of leaning new things especially. The smart classroom concept described from a completely new perspective i.e., real time feedback on activity around environment using internet of things (IOT). Now a days using mobile phones which are connected with our PC and we can access it anywhere and anytime is contributing a IOT towards smart learning. It has experimentally proven that classroom automation using internet of things is working satisfactorily by linking simple devices plus devices being effectively controlled. Our proposed system Manly focused on use of the monitoring of energy and sensing technology to save the energy.

VI. REFERENCES

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