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IOT BASED AUTOMATIC AIR CONDITIONER CONTROLLING SYSTEM

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ABSTRACT

The most of the energy consumption of the heating and cooling functions, are widely used in residential and commercial buildings. Therefore, the low power consumption of an air conditioner is essential in order to improve the energy efficiency of the global-energy-time. To improve this, an IOT based smart system that can control the AC to provide a suitable thermally comfortable environment is proposed. Meanwhile, it is able to monitor the real-time power consumption which are delivered to a cloud server. The sensor is used to detect the temperature, and the current mode will automatically be turned on or off. This system can be, on any server anywhere in the room, the smart one in the room, hungry, in which anyone can make use of the AC system, automatic on/off of the system. It can also be used in all areas, including the disabled, hospitals, private offices, conference rooms, classrooms, and transportation, where the manual of the AC control is not possible.

Keywords: Heating & Cooling Air Conditioner, IOT, AC Automatically Switched ON/OFF System

INTRODUCTION

Temperature prediction in Air Conditioners is exceedingly challenged in the present life. The automation of the air-conditioning is one of the most important issue on the internet of things (IoT territory of the country. It's really hard to change the temperature of his order, and physically weak, fragile hair, from groups of people, the sleep, the hours and hours of operations, and most of the time, where there is a countless number of people, there should be a problem, with a comfortable temperature for everyone.

A large number of the researchers work with room environment not with the object temperature, so the outcome what is found is might be more

productive if temperature prediction depends on object temperature. If there are one or two peoples in a place, there can be possible to give a comfort temperature for all but if there are huge peoples there is turmoil to give comfort temperature depend on room temperature. This system provides an automatic temperature of the circuit to reduce the power consumption automatically by changing the AC temperature, depending on the temperature in the room. At regular intervals, the temperature change, in order to avoid the alternative was working at lower temperatures, the values for a long period of time, and thus, in the republic of Azerbaijan, it is a little bit of energy.

LITERATURE REVIEW

Heating, ventilation, and air conditioning (HVAC) systems consume a large amount of energy in the business of buildings, mainly due to the lack of serious examination, which leads to low energy efficiency and / or the user. We offer a simple, HVAC management system, which automates the removal of PLUMBING and heating experience, in real time, taking into account the effect of policy management, and user settings. Our system is built on top of the internet of things IoT (Internet of Things) framework, in which the laboratory, the instrument is automated, according to the sensors, as well as the thermal parameters obtained from the sensors, and feedback, go to the processing in real-time to our distributed, Its researched by Dhanalakshmi [1]. Krishnaraj & Vishnupriya [2] developing the hardware and software for controlling speed of induction motor using android application. The demand for wireless devices is increasing, and they have more benefits when compared to a wired device. Here, we have to control the asynchronous execution speed, with the help of the software, wireless, Bluetooth, and Android devices.

A step-by-step process to experience the smart home automation controller. The use of the control unit of the device, the design of the home, the drive can be transformed into clever and intelligent by the internet of things (iot from a device. Experience, that is, the proposed model was experimentally demonstrated by combining the three methods. The proposed system has two advantages. First, the connection to the internet, you can easily monitor it and come back to our home at any time, which is no doubt going to be energy-efficient. On the other, it serves as a helping hand, for the old-age and, in contrast to the talented, it presented by Satyendra Vishwakarma [3]. Ginabel Otiang Okoth the Smart grid hybrid, cargo management system, which is based on the Android platform is a trustworthy, reliable, efficient, non-polluting, and eco-friendly system, with the help of the sun and the wind as the energy sources to generate electricity [4]. The system consists of solar panels and wind turbines to produce the electricity, and an adapter for the management of the contributions, the contributions to the backup battery, DC power, an inverter which converts the direct current, as an alternative, relay, switch, including the on / off of the load, as you are receiving a signal, the control, a phone, a Bluetooth module, which receives the signals, a direct dial telephone, a microwave signal to the module, Bluetooth connectivity, and to relay the master of the vessel and the load control, using an automatic

program, which is developed by the Android application.

Lot of techniques implemented to control the combination of cooling and heating element, which makes it more automated. The combination of heating and cooling unit in a single air conditioner makes our system more economical, its discussed by Alex Prabu [5]. Poonam Gaikwad & Yoginath Kal shetty the word automation is automatic control of operating devices with minimal or reduced human efforts. Influence of wireless technology is growing day by day [6]. In today's world, wireless technology play a substantial role in the automation of production. This means that the automation is technology with no human intervention. Home automation is a new technology in those days. In order to become more effective and efficient, the cost will be reduced with the use of low-cost communication technologies such as Bluetooth, Wi-Fi internet access. Bluetooth is a wireless communication technology that is used in home automation.

The Home automation system has been designed and implemented in order to use the Arduino mega 2560, micro -, and free Wi-Fi internet access, which is a method of monitoring, and home appliances, so that the user can access the system remotely, from anywhere in the world. The system is able to automate the operation of the drives, to analyze and use it on a regular basis, the user's device. This will not only save enormous human effort, but also save the energy., its discussed by Ritvik Iyer & Antara Sharma [7]. Nathan David suggestions and proposals for a new architecture of a low-cost and flexible home management and monitoring system using Android smartphone [8]. A proposal for the architecture, which uses a micro-web server, and Bluetooth, which is a collaborative application layer of the communication between the remote user and the home of the units.

Nirmala & Prasenjit Kumar Das PIR sensor is used to sense the human presence and it sends the signal to the relay module based on which it will switch on the light [9]. Also, temperature sensor measured the temperature in the room and the user is alerted through mail whenever increase in temperature beyond threshold. Rudrendu Mahindar the main purpose of the monitoring of electronic products in the modern world, with the help of the Internet of Things(IoT) is to be administered to them on the basis of the situational requirements [10]. With the development of technology, the need for effective management of growing, as this will optimize your productivity, saving unnecessary energy loss. Basic home appliances, there're a fan,

lights and the water pump which draws the maximum power. In this way, you can avoid wasting energy and resources, and the costs

EXISTING SYSTEM

Manual operations like ON/OFF are done in micro controller. The air conditioning is operated without the use of internet connectivity. Arduino UNO micro controller is used in which sketches and

incurred when the light is switched on during the day, a high-speed fans in the winter, or a water pump when the water tank is over-filled.

shields can be difficult to modify. LM35 sensor is used as a temperature sensor which is slower in operation and power supply is needed.

PROPOSED SYSTEM

- Existing system uses Arduino Uno has many disadvantages as seen. To overcome this advanced microcontroller called Node MCU
- The temperature sensor DHT11 is used to detect the temperature readings. This data is then given to Node MCU
- According to the program, Node MCU process the analog signal into digital and forms a

- particular voltage level for a particular temperature
- At the same time, it also sends the data to Relay, if the temperature becomes maximum from set point relay becomes activate and it switches on the cooling device
- A Resistor is used to reduce the current flow that offers resistance against the current flow.

BLOCK DIAGRAM

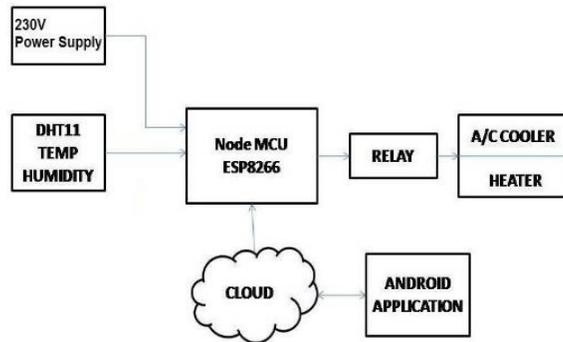


Fig. 1 Block Diagram

A flowchart is a type of diagram which represents the experience of a process, or a process. A flowchart can also be defined as a diagrammatic representation of an algorithm, which, in turn, as

part of its strategy to solve a problem. The flow chart shows the steps in the form of boxes of various kinds, and their order, in a box, the down arrow keys.

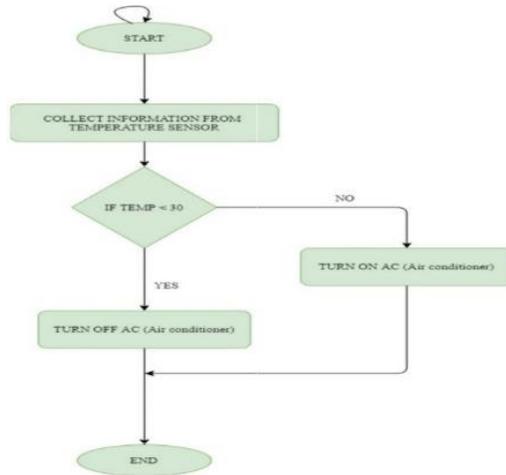


Fig. 2 Flow Chart

A schematic diagram is a graphical representation of an electrical circuit. Graphic diagram uses simple images of components in the

graph, the graph shows the component, and the interaction of the charts, with a standard symbolic representation.

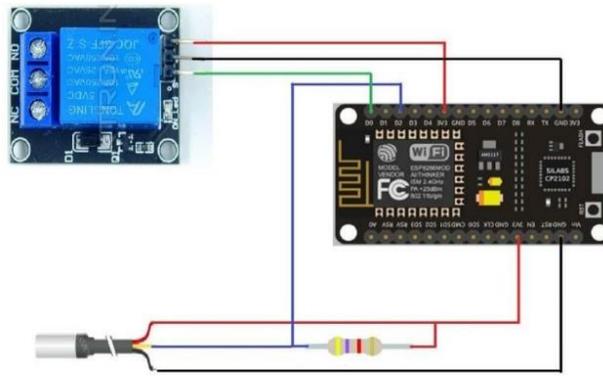


Fig. 3 Circuit Diagram

WORKING WITH NODE MCU

Node MCU receives the information from Arduino through JSON buffer, the received information processed based upon the condition and

the information transferred to authorize person (company owner/manager) mobile through blynk.

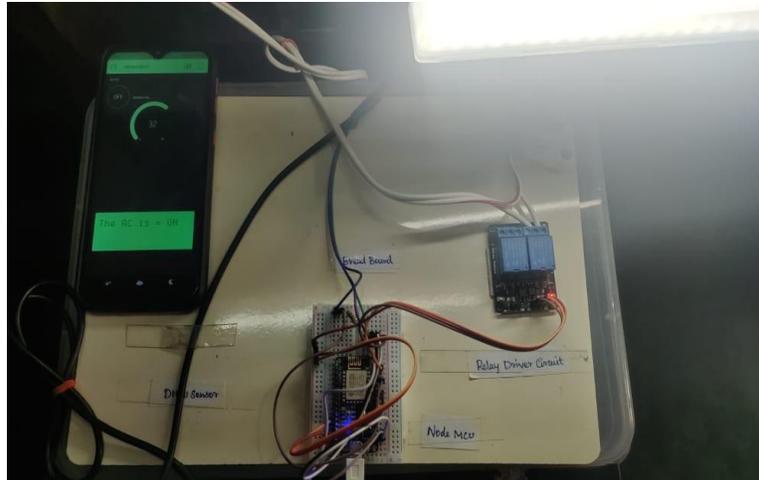


Fig. 4 Overall Arrangement

CONCLUSION

With growing technology development and urbanization, the energy consumption is one of the major problems. In home, school, college, hotels most of the electricity is occupied by the air conditioner. In this work, smart air conditioner control method is proposed. In this method cognitive IoT (Internet of things) are used to control the air conditioner. By using this method, we can control the air conditioner. We can automatically on

or off the temperature of the air conditioner according to our comfort. This helps to save the energy of the electricity and temperature of AC balances according to the room temperature.

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