IMPLEMENTATION OF IOT-BASED HOME AUTOMATION USING BLYNK APP

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ABSTRACT

One of the topic which is growing very popular now a days is HOME AUTOMATION SYSTEM using IOT. Because it has a various advantages so that people can do their work very easily and effectively. Home Automation system refers to the checking and maintaining and controlling all the home applications and allowances from our hand without any help of human power and without any help of any other machines. This paper deal with discussion of different home application techniques how manually we can control all the applications using remote by remote controls. This techniques plays a very important role in the society for every humans and specially for the physically challenged people. In this paper we are also discussing the wide range of the home automation techniques with common hub known as Arduino and with different LAN networks like blue-tooth , Wi-Fi and with network friendly.

Keywords— Home controller, artificial intelligence, wi-fi, sms , Bluetooth .

1. INTRODUCTION

Iot refers to the enhanced network services. Nowadays everything is despond on the network and IOT based. Home automation refers to the smart connectivity of the home applications and allowances. It also refers to the remotely monitoring the applications of the home and performing through it. Household devices such as, fans, TV, bulb, buzzers, etc.. are assigned as a unique addresses and applications that are connected to the common gateway and common home application product.Not only controlling the home applications and allowances it also controls PC, laptops, mobiles etc.Which results in the Automated systems.[1] This implementation of IOT refers to the flexible and low cost budget of using the internet standards of Wi- Fi, Bluetooth, zigbee, etc… In this paper not only the home automation system are controlled and monitoring but the home environment are also controlled and monitoring continuously for tracking of energy consumption and which results in the save of the electricity bills. Different methods are used in this paper such as on and off the lights, fans, ac, bulbs, buzzers, etc.. Wherever we want by using remote control based on the wifi, and bluetooth based techniques. Some require home automation system will provide a great satisfaction of the physically challenged people. It will provide a great assistant for them. There have been a great and several researches and developments are going on the home automation system. New techniques are also introduced with finger-print sensor, voice assistant, etc.. Home automation system refers to main two components.., the first part is android application which we give a great sufficient needs for the people needs. Second part is Arduino It is the main part of the whole implementation and give a sufficient and relevant output. To develop a system which would be very useful for all the persons needs in doing works on their own without seeking anyone help From this we had developing a Home controller system that uses wired connection and help of WI-FI module, blue tooth as well the internet. Other important sources of this system is mobile phone and cloud connection. We are using the cloud page as a main references from the help of the cloud page we are assessing and controlling all the applications. In other way also it can be used such as wireless- connection without any internet or WI-FI module only with the short range of the blue tooth. It can be very useful for the employee people as well the physically challenged people without getting anyone's help or without depending on any person. From wherever we can able to control the applications we want.

2. RELATED WORK

The home applications are viewed by the wireless connection through this system . this wireless connection are made through the 4-relay micro controller and made the connection through the Arduino broad. This broad will give the entire connection through the system and made the home as smart home. This system is controlled by the C program program at high level so it can be very manipulated and give the best results. And home will be smart as we imagine. Though it is wireless connection the implementation will be easy and the results will be efficient as we imagine.

To control and handle the system of the home materials and allowances new techniques is used called Zig-bee smart home. Using this technique we can able to do and administrate the applications and things in the home. Using the password security we can able to influence the products and mainly for the elder-age people. For this implementation internet is required and also the WIFI is required so only with that parameters we can able to do implementation and

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influence the product in our home. As well the security system is also introduced in this system in order to keep the home products and implementation very safety in generic manner. The home mechanization is the popular method is growing in today's world. To make it as more sufficient we can also many methods we want. Now we can see about RF module using that we can able to regulate the home things etc..and this is the main method which is growing very popular in now a days because every people are busy with their own work so they cannot able to concentrate on their works and homes. So this method is introduced to mechanization, and governance all the articles in the home. It will be the best technique to govern all the amount of the home as well the privacy system are also introduced with this system. Using the network module and as well the without network module like wireless communication we can easily ownership of the brand of the home. This technique will be very useful for the physically challenged people as employee persons.

Home computerizing and keep the product as well authorized and well organized format new approach is introduced called Raspberry home control system. Using this new approach we can able to centralized the product as per the user wish. Using with the phone and internet module we can able to command of the things of the home. Using the cloud page we can able to access the link on the android or internet module with the help of the link we can able to access and buy the one cloud page as example as the g mail page. After we are buying the cloud page using that page we can able to govern all the goods of the system. Only with that cloud page and that cloud page and that page will associate the particular link for that specific goods or implementation only with the help of that link we can able to influence all the products and using the username and passwords we can able to develop the security system of that module. The specific username and passwords are generated by the cloud page we just want to buy it ans user by login and sign up that page.

This method will be more sufficient and efficient as compared to other systems. The another important procedure of home mechanism is wireless based approach. Without using any wire based task or operation we can able to easily arm all the goods of the home. Example using the blue tooth connections as well any wireless connection is improved in this system. Example like car parking system in home control system we can able to park the vehicles in smart home we cannot use any type of wired or any type of connection is required. Only with the smart range sensor modules we can able to park the vehicles. Same like using the smart range sensor and Android ADK sensor we can able to monitor and influence the goods of the product. This system will be very easy and it will be gainful in any field. In this paper author presents the broadcast Home mechanization module with the support of powerful speech module , do us to install a applications and executing the module of the system will be more easier. Cost effectiveness and handle them in moderate way Person Footers numerical addition of count is the another important task in this paper which talks and give challenge with the mechanism generating of simple home applications and allowances. The need of this system is non-physical challenged people. In this busy schedule people are flying like birds and there is no time for them to look after all those things like switch on and offing the application. For that it will be the best system for their people with their foot step counter from the door to the specific range the lights and fans and other application will automatically off. And also with their voice recognition we can easily manipulate all the applications .In the above module, we have find out the range of powerful speech module applications system to be 1.5m. So that we can able to manipulate and use it very effectively.

In this paper author presents the ground work system that can able to generate any of the electrical home allowances and applications for also to save on the future work status. In this paper we are discussing and concentrating on home automation system using the advanced cell phones and desktops. It deals with about two accurate approach in this specific paper home mechanistic like controlling all the basic home automation system and applications using the Bluetooth it will have only the short range distance to communicate . (2) Usage of cloud it will give the correct and accurate results of the products with the help of the cloud page. In this paper A privacy module is also added as that any unknown people cannot rule it by which when the user are able to close or terminate the door only by giving the correct passwords to the system only with their known people.

In this paper, author presents the intelligent energy sources home automate system are taking place they are able to do functions manipulate and control all the home automated applications and allowances from wherever we want. For this proposed system the internet connectivity plays an important role. We need internet connection to facilitate the functions and manipulate them. Its depends upon the internet WI-FI connections. In another hand For non wire applications, the predefined IP address is used to use this functions . This Home automate is depends on various stage modules so that they are able to manipulate and utilized by use of powerful speech of user and foot counter and voice process to the persons using the Google voice controller or through a any other android depends application. So that the main aim of this proposed system is to make our home controller system more privacy and brilliant and efficient.

In this paper author presents that today's world many people are busy with their works and respective jobs. And moreover all are worried about the rise of the electricity and the electricities bill. Not only rise of electricity bill and people are also facing many difficulties and they don't have time to look after the household applications and allowances. Here come with best solution for those problems it covers with the protect and reserving its a new model to home operationalization and money collecting process. It deals with the simple household applications and electricity bill of their respective applications. Here this paper deals with the new approach of electricity bill to overcome the people financial effort and basic household applications. This paper has many modules deals with variety of household applications. The main aim of this paper is to have Android applications. With the android application we can able to control all the application wherever we want and pay the electricity bill from the android application of the respective household applications. Using that android application we can make use of household applications and allowances can able to control and manipulate them and which results in the low cost of electricity bills.

In this paper author presents the weather bureau model is used for govern and influence various weather signals. This system supports with the joining of two central idea and to control and facilitate and utilize automate the environment around us as well as the user and it will make and change the surroundings pleasant and comfortable conditions according to our wish even when the weather is not good and it is not comfortable for us. This paper and system is used to come up with the full satisfaction of the user. And this paper deals with the weather forecasting techniques. This system gives the new idea and with the user comfortable surroundings status and change the house pleasant and as per the user wishes. And also make the home chill or cold or hot according to the user wishes. This techniques is done by just switching on through the Android application which should be installed in the Android/IOS phone. This system also deals and operated by with the physically challenged people those who are blind or disabled people can use and control this system through voice recognition techniques.
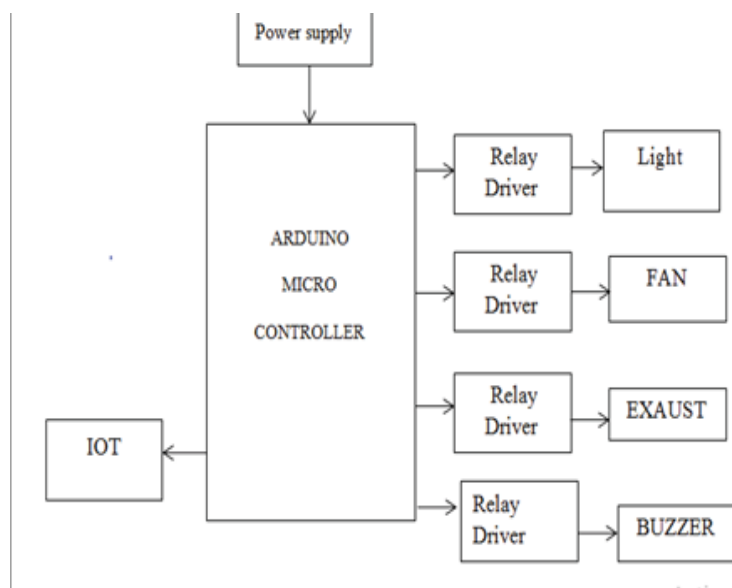
3. BLOCK DIAGRAM

Fig.1: Block diagram

4. COMPONENTS

MICROCONTROLLER

Micro-controllers are used in consequently controlled items and gadgets. In-here we have planned a confined PCB for 4 transfers to work 4 AC requirements at a same time. We have put a three stick screw terminal squares (NC, Neutral, NO) for associating machines.

Fig 2 Micro Controller

RELAY : Relay or Transfers are often used in our applications extraordinarily when we have to drive high loads from micro-controller circuits. So in this DIY venture, we make a 4-Channel Relay Driver Circuit to be utilized in hand-off-based applications.
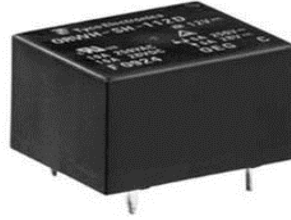

Fig 3 Relay

EXPERIMENTATION

We have made a 4 home applications data set with 4- relay controller and micro-controller and the arduino broad. The 4-realy micro controller has a connection to the wires of , DC-motors fans etc. the connection such as 2, 4 are made to the Alarms. That is indicating the switch on and off. Once the switch is on the alarm will glow and indicate us the light is glowing while the switch of 4-relay circuit 2 is on the alarm will not glow it will remain silent as it is indicating that the light is not on. DC Motor as the 4- relay connection has a made to the Dc-motor. The connection such as 1 and 3. If you want to on the Dc- motor the 4-relay circuit connection has been done so we can easily use the connection and the Dc- MOTOR on and off, If circuit 1 has on then the DC- motor will run, and it can be circulated,then the circuit 3 has been on it will automatically off the DC- motor The device-1 is DC motor had made the connection to the 4- relay circuit and the micro- controller and using the mobile phone and PC"s we can retain the value such as 0 and 1. Using the cloud URL we can enter into the login page of mobile phone and PC"S once we entered the username and password of the cloud connection it will entered into the cloud page and show the history and the digital output of the 4 devices and the analog output such as 0 and 1. As the cloud value indicates 0- is off stage and 1 is on stage.

5. COMPARISION AND ANALYSIS

We have saw many types of home automation system techniques in different stages in various paper. Now we can compare one technique with another by comparison table so that we can able to identify which techniques is efficient to use.

Table 1: Comparison and Analysis

TITLE	AUTHO R	TECHNIQUE	FUTURE WORK
Smart Home Automation System Using GSM and Android App	Shubam magar[1]	Using gsm module	Efficient for physically disables peoples
Voice dependant structure on personsfootstep	Gudipati Sravanthi	WHAS voice module	More systematic step count
Surviving of homae controllance withcellphones	Kranthi kumar	Via bluetooth	Using cloud storage
Power Based Controllance	Satyendra K Viswakar ma	Wifi based	Wireless technologie s
Vaireties of frameworks with networks	Mshahiyar kabir rafil	Android app	With electrical surviellance
Raspberry pi home automation system using sensors.	Yogita bodwade[1]	Using android app	Network connections
Using wireless Technologies	Yogita bodwade[1]	BT board	Using python scripts
Common hub maintanaence	Yogita bodwade[1]	ADSL board	with low cost
Home automation using rf module.	Yogita bodwade[1]	RF module	Low cost
Specification of weather	Bikram banarjee	Based on climatic condition	Under any climate

6. RESULT ANALYSIS

In this paper we have implemented and compare the results with other papers of home automation system. In our work we have used the cloud of single page instead of using a whole cloud. In other paper home automation system is implemented by using cloud but it will be more complex and high cost. By using the single page of cloud buying and registering through it we can able to implement in a better manner and time saving. Cost will be very low when we are going for using a single page of cloud. So that number of operation will be very less by using 0 and 1's. 0 for indicating off state and 1 for indicating on state of applications and allowances of the home automation system.

7. CONCLUSION

Home computerized system is nothing but a controller mechanism by which we can control our home gadgets anywhere and anytime at whenever we want. As it is a automatic controller it performs a specific role in our day to day life. It also known that it gives permission to users to remote the different types of gadgets at anywhere in the continent. The technologies used in this framework are cellphones, laptops, tabs in their own. According to this paper it is divided into varieties of choices to personalize their security system.Study of the home mechanization gives many advantages and gives more support in all the fields as well for many people like employee persons and the physically challenged people so that they do they own work without depending upon any other system or people. In the recent years the IOT play vital role moreover home mechanization gives much contribution in that so that homes are becoming smart home in upcoming days.

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8. REFERENCES

[1] M. N. N. A. Asghar, M.H., "Principle application and vision in internet of things (iot)," in Communication Technologies (GCCT), 2015 Global Conference on, may 2015.

[2] A. R. C. Y. . O. K. Withanage, C., "A comparison of the popular home automation technologies," pp. 1 – 11, may 2014.

[3] B. R. Pavithra, D., "Iot based monitoring and control system for home automation," pp. 169 – 173, April 2015.

[4] M. J. H. B. T. A. M. K. T. Baig, M.Q., "Artificial intelligence, modeling and simulation (aims), 2014 2nd international conference on," pp. 109–114, November 2014.

[5] B.S. S. Tharaniya soundhari, M., "Intelligent interface based speech recognition for home automation using android application,"pp. 1 –11, march 2015.

[6] F. M. G. K. D. Sukmana, Husni Teja, "Wireless and mobile (apwimob),2015 ieee asia pacific conference on," pp. 183 – 187, august 2015.

[7] S.E.T.B.C.A.Urfaliglu,O.,"Signalprocessing, communication   and applications conference, 2008. siu 2008. ieee 16th," pp. 1–4, april 2008.

[8] E. A. Elkamchouchi, H., "Design and prototype implementation of sms based home automation system," pp. 162 – 167, november 2012.

[9] O.N.C.S.A.P.B.Sahani,M," Circuit, powerandcomputing technologies (iccpct), 2015 international conference on," pp. 1–6, March 2015.

[10] Kim Baraka, Marc Ghobril, Sami Malek, RouwaidaKanj, AymanKayssi," SmartPower Management System For Home Appliances And Wellness Based On Wireless Sensors Network And Mobile Technology", ,2015.