2019 5th International Conference on Advanced Computing & Communication Systems (ICACCS 2019)

Iot Based Smart Window using Sensor Dht11

Ms. Margret Sharmila.F
Assistant Professor,
Department of Computer Science and Engineering
SNS College of Engineering
margretsharmilait@gmail.com

Suryaganesh P
Department of Computer Science and Engineering
SNS College of Engineering
klpsuryaganesh@gmail.com

M. Abishek
Department of Computer Science and Engineering
SNS College of Engineering
abishekabbi555@gmail.com

Ullas Benny
Department of Computer Science and Engineering
SNS College of Engineering
ullasbenny519@gmail.com

Abstract - In India, Smart City is a mission started by our P.M, Which aims to develop the infrastructure digitally of India's cities and rural areas. Focusing towards the mission, we have provided an efficient solution for operation of the window in a smart way by monitoring the temperature level inside the closed environment on the real time basis. Whole system is IOT based. The sensors in the windows detect the temperature level continuously and accordingly the system will be performed by iot. This will helps to maintain the temperature level in our surrounding and also provides an smart window operation without the help of manpower.

Keywords- window, temperature level, DHT11 sensor, etc.

I. Introduction

The Smart Window is an investigation into supportable advancement. It plans to make a prevalent indoor atmosphere for building tenants and decidedly impact mankind's capacity to profit by sustainable assets. Because of rising vitality costs, propelled vitality sparing advancements, for example, Smart window, are picking up market advantage by setting aside some cash and mitigating weight on an undeniably risky vitality segment.

The Smart window fits into new development, for example, the test structure that has been planned in parallel with it, yet it is likewise being intended to adjust to existing structures. This structure is intended to limit the danger of monetarily supporting emotional, vitality sparing innovation by growing the potential market to incorporate all mortgage holders. The Smart window accomplishes vitality funds by amplifying helpful warmth exchange and normal lighting through the window and limiting utilization of fake lighting and the customary HVAC framework. The window works by providing ventilation through two substantial vents in the casing and by picking between various movies with an assortment of optical transmittances.

II. Internet of Things (IoT)

Internet of Things, essentially named as 'IoT' is a trend setting innovation which the enterprises are beginning to adjust into their task. IoT is just a UI that a client can incorporate into practically all the electrical/electronic gadgets to change them into a more intelligent one. This innovation is additionally favored by numerous enterprises for the assortment of uses it offers for a client like continuous investigation, examination of gathered information, cloud information stockpiling, trigger an activity dependent on an esteem a client sets, remote notice and so forth.

Internet of Things (IoT) discovers its application in ventures that inclines toward mechanization, vitality effective frameworks, savvy gadgets and so on. Indeed, even reports express that in excess of 50 Billion gadgets will be associated with IoT by 2020. Be that as it may, learning IoT isn't exceptionally straightforward, as the framework deals with complex methods and modules. The most ideal approach to learn IoT is by building tasks and learning while at the same time doing it. As it isn't been incorporated into your educational modules you ought to likely search for preparing programs/courses that you can take up to gain proficiency with this stunning innovation.

A. Existing System

In the existing system, the window is operated manually by using mobile phones or some remotes operations. In this the man-power is required to handle the window mechanism. Some times there may occur any failures because of the improper signals from the operating devices and it also cannot be performed in good condition when the devices are at the distance. So the human need to be at the working distance from the window to operate it by the devices. To overcome this we have designed an improved mechanism for operating window in a smart manner.

B. Proposed System

Our proposed system operates the window automatically without any help from the man-power.

It uses temperature sensor which senses the room temperature and operates the window automatically.

The sensor used is DHT11 sensor that helps to measure the room temperature and if the temperature is low or high than the standard temperature the window closes.

978-1-5386-9533-3/19/$31.00 ©2019 IEEE

It will provide the improved window operation smartly and reduces the man-power.

III. WORKING

IoT based Smart Window using sensor DHT11 is a simple and real time product. Basically the project includes the temperature sensor, arduino and the stepping motor.

Arduino is an open-source hardware and software electronics platform. It is a microcontroller kits used to interact, sense and control both physically and digitally. It uses the Arduino programming language and the Arduino IDE Software. Arduino sheets can peruse sources of info and transform it into a yield that actuates a venturing engine and we can control the engine by passing a lot of directions to the microcontroller on the board.

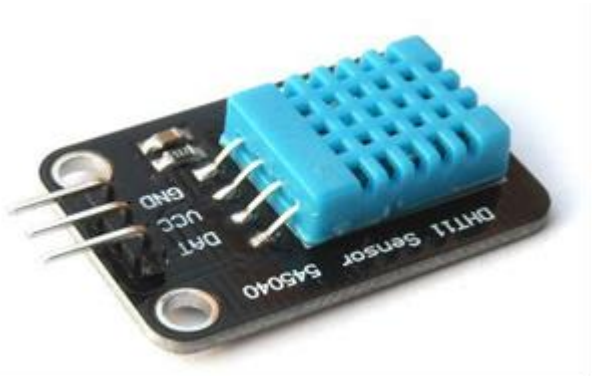
The temperature sensor utilized is DHT11. The DHT11 is a Humidity and Temperature Sensor, It produces aligned advanced yield. DHT11 can be associated with microcontrollers like Arduino, Raspberry Pi, and so on., DHT11 is a minimal effort temperature and dampness sensor. It gives high unwavering quality and long haul dependability.

Stepper motors are DC motors that convert the electrical impules to machine moments. Brushed DC motors rotates and give the input pules. Those pulse move the shaft through affixed angle. The electromagnetical moments takes place to rotate. A servo motor is unique that only rotate 180 or 270 degrees although there are modified servos that can spin a full 360 degrees. This motor helps to move the window by a precise angle.

The window is attached with the stepping motor which inturn connected to the arduino board and inaddition the arduino borad is connected with temperature sensor DHT11. By using the sensor the temperature value is given to the arduino board. With the help of the arduino programming language and the setup standard temperature, the arduino instruct the rotating mechanism of the stepping motor. The impules are converted into mechanical moments to rotate the window.

FIG 1. ARDUINO WITH STEPPING MOTOR

FIG 2. TEMPERATURE SENSOR DHT11



IV. CONCLUSION

This paper introduced the IoT based Smart Window using sensor DHT11. It provide the efficient solution to the window operation. This will be very helpful in the Hospitals, Orphanages and smart buildings. It is responsible to maintain the room temperature in normal. Along with this we can also have the existing manual operation of the window by mobile devices. By addition so it can have both automatic and manual operations.

V. REFERENCES

[1] Sagar KN Vinay, S.M. Kusuma, "Home Automation Using Internet of Things" in International Research Journal of Engineering and Technology (IRJET), Bangalore, India, vol. 02, no. 03, June 2015.

[2] Shruti Deshinge, M. N. Kakatkar, "IoT based Smart Home System for Monitoring Surrounding Condition" in International Journal of Innovative Research in Computer and Communication Engineering, Pune, India, vol. 4, no. 6, June 2016.

[3] Vinod Choudhary, Aniket Parab, Satyajit Bhapkar, Neetesh Jha, Medha Kulkarni, "Desgin and Implementation of Wi-Fi based Smart Home System" in International Journal Of Engineering And Computer Science, Mumbai, 400022, India, vol. 5, no. 02, February 2016.

[4] M. Shobana, M. Amsaveni, S. Sugapriya, "Smart LED lighting system for street light", The International Journal of Engineering and Science (IJES), March 2015, ISSN 2319-1813.

[5] Gaurav Waradkar, Hitesh Ramina, Vinay Maitry, Tejasvi Ansurkar, Asha Rawat, Parth Das, "Automated room light controller with visitor counter", Imperial Journal of Interdisciplinary Research (IJIR), vol. 2, no. 4, 2016.

[6] Imran Ahmed Khan, Khushboo Gupta, "Design of rain detection system for power window", International Journal of Advanced Research in Computer Science and Software Engineering, vol. 5, no. 4, April 2015.

[7] S. Parameshwara, Manu S Manjunath, Suren Sharan Navalgi, Vinay Mahadev Hunachyal, "Power windows using touch screen", International Research Journal of Engineering and Technology (IRJET), vol. 03, no. 01, Jan 2016.

[8] Thillaiarasu N., Chenthur Pandian S., Naveen Balaji G., Benitha Shierly R.M., Divya A., Divya Prabha G. (2019) Enforcing Confidentiality and Authentication over Public Cloud Using Hybrid
Cryptosystems. In: Hemanth J., Fernando X., Lafata P., Baig Z. (eds) International Conference on Intelligent Data Communication Technologies and Internet of Things (ICICI) 2018. ICICI 2018. Lecture Notes on Data Engineering and Communications Technologies, vol 26. Springer, Cham.

[9]Thillaiarasu, N. and ChenthurPandian, S., 2017. A novel scheme fo safeguading confidentiality in public clouds fo sevice uses of cloud computing. Cluster Computing, pp.1-10.

[10]Shyamambika, N. and Thillaiarasu, N., 2016, January. A survey on acquiring integrity of shared data with effective user termination in the cloud. In Intelligent Systems and Control (ISCO), 2016 10th International Conference on (pp. 1-5). IEEE.

[11]Thillaiarasu, N. and ChenthurPandian, S., 2016, January. Enforcing security and privacy over multi-cloud framework using assessment techniques. In Intelligent Systems and Control (ISCO), 2016 10th International Conference on (pp. 1-5). IEEE .

[12]Shyamambika, N. and Thillaiarasu, N., 2016. Attaining integrity, secured data sharing and removal of misbehaving client in the public cloud using an external agent and secure encryption technique. Advances in Natural and Applied Sciences, 10(9 SE), pp.421-432.

[13]Ranjithkumar, S. and Thillaiarasu, N., 2015. A Survey of Secure Routing Protocols of Mobile AdHoc Network. SSRG International Journal of Computer Science and Engineering (SSRG-IJCSE)–volume, 2.