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IoT Based Temperature Scanning Entry System

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ABSTRACT:

We propose a low-cost internet of things (IoT)-enabled COVID-19 standard operating procedure (SOP) compliance system that counts the number of people entering and leaving a vicinity, ensures physical distancing, monitors body temperature and warns attendees and managers of violations. The system comprises of multiple sensor nodes communicating with a centralized server. The data stored on the server can be used for compliance auditing, realtime monitoring, and planning purposes. The system does not record the personal information of attendees nor provide contact tracing information.

Keywords: Esp32, Web server, IOT, tool, time change.

1. INTRODUCTION

Nowadays, health monitoring is a global challenge in people life time. The comfort of life lies in a healthy condition which effected by environmental and surgical facts. The measurement of human body vital signs is an important to acknowledge the health status. The performance of any work or exercise in hot conditions disturbs the balanced thermal homeostasis state of human body (HB). This balance acknowledges the HB about physiological and cognitive performance of body [1][2][3]. The normal body temperature ranges by 36.50C to 37.50C [4]. The status of health below this limit is stated as hypothermia and the status above is referred as fever and hyperthermia conditions. The hyperthermia also referred as tumour conditional stage that ranges more than 38.50C [5][6]. The individual body temperature measurement is dependent of different aspects i.e. age, exertion, infection and place of body at which measurement made [7]. There are several methods to measure the HBT i.e. oral, retail and axillary through mercurial and contactless thermometers [8][9]. The measurement of HBT with mercurial thermometer is crucial than contactless like as broken of thermometer if bitten during oral measurement, injury of rectum during rectal measurement. Although, researcher are focusing to present digital and contactless thermometer for HBT measurement linearly. Therefore, this paper presents the contactless Infrared based HBT measurement prototype. The paper is organised as follows: in Section 2 a detailed description on the system importance is provided. In Section 3, implementation and demonstrate the hardware and software used for system design is discussed while Section 4 present the output results of experimental setup. This system is used for covid detection.

OBJECTIVES

The main objective of the system (temperature scanning gate) is to monitor the human body temperature when they passed through the gate. In normal situation the gate is always open. If the gate senses any high temperature (more than 99.0 degree Fahrenheit), the gates automatically rejects the entry by closing the gate. The gate also provides warning beeps while the body temperature of a person is high. Our world is effected by covid-19. Some health measurements are needed for preventing the covid-19 spreads. One of the early symptoms of covid-19 is high body temperature or fever. Our temperature monitoring gates able to detects high body temperature. This temperature screening gate is useful for bus stops, hospitals, restaurants, airports, grocery stores and shopping malls etc. The implementation cost of this gate is also cheap (compare with heat camera). Thermal cameras are also used to monitor the temperature.

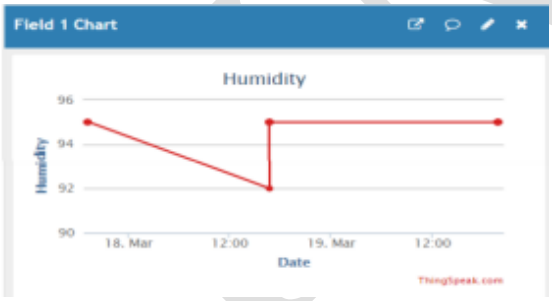
2. RELATED STUDY

Present day innovations in technology principally target dominant and observance of various devices over wirelessly over the web specified the web acts as a medium for communication between all the devices [10]. Most of this technology is targeted on economical observance and dominant of various. associate degree economical environmental observance system is needed to observe and assess the atmospheric condition just in case of surpassing the prescribed level of parameters (e.g., noise, CO and radiation levels) and for gathering knowledge for analysis functions (amount of downfall, wind speed etc.). A system is taken into account as a sensible system once the device equipped with sensors, microcontrollers and varied code applications becomes a self-protecting and self-monitoring system[11][12]. Event Detection based mostly and special method Estimation square measure the 2 classes to that applications square measure classified. at first the device devices square measure deployed in atmosphere to sight the parameters (e.g., Temperature, Humidity, Pressure, LDR, noise, CO and radiation levels etc.) whereas the info acquisition, computation and dominant action (e.g., the variations within the noise and CO levels with reference to the quantified levels). Devices square measure positioned at totally different locations to gather the info to forecast the behaviour of a specific space of interest [13]. the most aim of this paper is to style associate degreed implement an capable observance system through that the specified parameters square measure monitored remotely mistreatment web and therefore the knowledge gathered from the devices square measure hold on within the cloud and to project the sure trend on the net Environmental perceptive is a vital IoT application that occupies observance the neighbouring atmosphere and accounting this knowledge for economical short term measures like remotely dominant the devices and future knowledge analysis and measures [14]. This paper shows the belief details associate degree results of an environmental observance system. The system consists of a Node MCU ESP8266 Wi-Fi module that interfaces with DHT11 wetness and temperature observance device aspect in conjunction with beside at the aspect of together with} MQ-7 gas observance system at the input side and at the output side the perceived knowledge is distributed through web to an overseas cloud storage open IoT

API ThingSpeak. The web of Things (IoT) provides a promising resolution for online observance and connected activities, alongside wireless device networks (WSNs) and mobile web [15].

3. AN OVERVIEW OF PROPOSED SYSTEM

The projected embedded device is for observation Temperature, Humidity, Pressure, intensity, sound intensity levels and CO levels within the atmosphere to form the setting intelligent or interactive with the objects through wireless communication. The projected model is shown in figure two that is a lot of pliable and distributive in nature to watch the environmental parameters. The enforced system consists of a microcontroller (ESP8266) as a main process unit for the whole system and everyone the sensing element and devices may be connected with the microcontroller. The sensing elements may be operated by the microcontroller to retrieve information the info the information} from them and it processes the analysis with the sensor data and updates it to the web through Wi-Fi module connected with it. Our projected 'Smart weather observation system' in contrast to standard weather observation instruments is extremely tiny and compact permitting it to be put in simply on rooftops.It's light-weight and portable; this advantage permits North American country to simply carry it to remote location for installation. Because of its style it may be simply be carried by a weather balloon to live part changes at high altitudes. The power necessities for our system (sensors and boards) is far less compared to the prevailing instruments within the market thus facultative North American country to use star cells as power offer. This not solely cuts down on price however permits North American country to go away the observation system in remote, areas wherever power is not simply obtainable, for long periods of your time. Addition of star panels conjointly helps our style be eco-friendly.



The experimental results victimisation ThingSpeak Matlab shows that the analysis of weather information is incredibly easier and apprehensible. The temperature, humidness and CO worth may be monitored with net of Things (IoT) conception through an experiment tested for watching 3 parameters. It conjointly sent the device parameters to the cloud (Google unfold Sheets). This information is going to be useful for future analysis and it may be simply shared to alternative finish users. This model may be any dilated to watch the developing cities and industrial zones for weather watching. To safeguard the general public health from pollution, this model provides associate degree economical and low-price resolution for continuous watching of atmosphere.

4. CONCLUSION

In this paper we have successfully designed and implemented the gas leakage detection system for home safety and industrial applications. This system detects the leakage of the LPG/CNG and alerts the consumer about the leak by sending an SMS and as an emergency measure the system will turn off the valve of Gas supply Multiple SMS can be sent by changing programming GSM module. This project is implemented using the Atmel 89c51 Microcontroller. This system has great scope in the home automation industry this system can be added with extra features like automatic gas booking system and home fire safety system. This system can be modified to be used for industrial and household purpose especially in the industries where there is emulsion of harmful and flammable gases. The cost involved in developing the system is significantly low and it can be easily made available to the people and the usefulness of this device is immense.

References

[1] Jeong, Yuna, Hyuntae Joo, Gyeonghwan Hong, Dongkun Shin, and Sungkil Lee. "AVIoT: Webbased interactive authoring and visualization of indoor internet of things." IEEE Transactions on Consumer Electronics 61, no. 3 (2015): 295-301.

[2] Zhang, Feng, Min Liu, Zhuo Zhou, and Weiming Shen. "An IoT - based online monitoring system for continuous steel casting." IEEE Internet of Things Journal 3, no. 6 (2016): 1355-1363.

[3] G. Eason, B. Noble, and I. N. Sneddon, “On certain integrals of Lipschitz-Hankel type involving products of Bessel functions,” Phil. Trans. Roy. Soc. London, vol. A247, pp. 529– 551, April 1955.

[4] Zafar, Saima, Ghosia Miraj, Rajaa Baloch, Danish Murtaza, and Khadija Arshad. "An IoT Based Real-Time Environmental Monitoring System Using Arduino and Cloud Service." Engineering, Technology & Applied Science Research 8, no. 4 (2018): 3238-3242.

[5] Uma, K., M. Swetha, M. Manisha, S. Revathi, and Anand Kannan. "IOT based Environment Condition Monitoring System." Indian Journal of Science and Technology 10, no. 17 (2017).

[6] Jha, Ram Krishna, Santosh Kumar, Kireet Joshi, and Rajneesh Pandey. "Field monitoring using IoT in agriculture." In 2017 International Conference on Intelligent Computing, Instrumentation and Control Technologies (ICICICT), pp. 1417-1420. IEEE, 2017.

[7] Halder, Sourabh, and G. Sivakumar. "Embedded based remote monitoring station for live streaming of temperature and humidity." In 2017 International Conference on Electrical, Electronics, Communication, Computer, and Optimization Techniques (ICEECCOT), pp. 284- 287. IEEE, 2017.

[8] Balampanis, Stylianos, Stelios Sotiriadis, and Euripides GM Petrakis. "Internet of things architecture for enhanced living environments." IEEE Cloud Computing 3, no. 6 (2016): 28-34.

[9] Sung, Wen-Tsai, Jui-Ho Chen, and Ming-Han Tsai. "Applications of wireless sensor network for monitoring system based on IOT." In 2016 IEEE International Conference on Systems, Man, and Cybernetics (SMC), pp. 000613-000617. IEEE, 2016.

[10] Rajesh Tiwari et. al., “An Artificial Intelligence-Based Reactive Health Care System for Emotion Detections”, Computational Intelligence and Neuroscience, Volume 2022, Article ID 8787023, https://doi.org/10.1155/2022/8787023.

[11] Suriya Begum, Farooq Ahmed Siddique, Rajesh Tiwari, “A Study for Predicting Heart Disease using Machine Learning”, Turkish Journal of Computer and Mathematics Education, Vol. 12, Issue 10, 2021, pp 4584-4592, e-ISSN: 1309-4653.

[12] Jaspal Bagga, Latika Pinjarkar, Sumit Srivastava, Omprakash Dewangan, Rajesh Tiwari, “Latest Advancement in Automotive Embedded System Using IoT Computerization”, Green Computing and Its

Applications by Nova Publishers 2021, ISBN: 978-1-68507-357-2, pp 131 - 165. ,**DOI**: https://doi.org/10.52305/ENYH6923.

[13] Rajesh Tiwari, Deevesh Chaudhary, Tarun Dhar Diwan, Prakash Chandra Sharma, "Privacy and Security Solution in Wireless Sensor Network for IoT in Healthcare System", Next Generation Healthcare Systems Using Soft Computing Techniques, by CRC Boca Raton, FL 33487, U.S.A 2022, ISBN: 978-1-03210-797-4,pp 123 – 135, DOI: https://doi.org/10.1201/9781003217091-9.

[14] Secure Data Sharing Using Two Fold Cryptography Key Protection, Proxy Re-encryption and Key Separation Techniques Authors:D. Uma Vishweshwar, A. BalaRam & T. Kishore Babu in ICCCE-2020,.BookISBN:978-981-15-7960-8,Pageno:299.

[15] A. Zanella et al., "Internet of Things for Smart Cities," IEEE Internet of Things J., vol. 1, no. 1, Feb. 2014, pp. 22–32.