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Sub: IOT LAB - ITL504
Year :2023-2024

Experiment 1

Aim of the Experiment

Conduction of a survey of several available literatures in the IoT data analytics areas.

Software/Hardware Required

NIL

Summary of the IEEE papers

Paper 1

Title: Smart Crop Cultivation Monitoring System by Using IoT

Authors: 1. Savath Saypadith 2. Poutthasone Sibounnavong 3. Khampasith Chanthavong 4. Poutthasone Sibounnavong.

Year: 2019

Summary : Agricultural is an important field of economic development. Farming needs to be adapted in order to be able to satisfy consumers, so using IoT (Internet of Things) to help in this field is one of the preferred alternatives in the present. In this research, the system monitoring of soil moisture, temperature and water control has been proposed by using NodeMCU ESP8266, sensors and Cloud Computing.

In this research paper was propose the system for efficient crop monitoring for the agricultural fields. The system monitoring of soil moisture, temperature and water control has been proposed by using NodeMCU ESP8266, sensors and Cloud Computing. The proposed system was effective with growth rate, productivity and water saving, also farmer can monitoring and adjust some value in the system through the app. The proposed system is useful for a farmer who works on agriculture.

Paper 2

Title: Design and Development of a smart garage door system

Authors: 1. Mohamed Imran Mohamed Ariff 2. Farah Diyana Mohamad Fadzir 3. Noreen Izza Arshad 4. Samsiah Ahmad 5. Khairulliza Ahmad Salleh 6. Jufiza A.Wahab

Year: 2022

Summary : This paper presents the design and development of a smart garage door system, which is operated by an Arduino microcontroller via the use of a mobile application and the Blynk cloud sever. Further, this mobile application allows the smart garage door to be controlled and accessed from any remote location via the use of the Blynk cloud server which is connected to the Internet using Wi-Fi or 3G/4G network. The operations of this smart garage door also function using the Google assistant voice command. Finally, this smart garage door application has been tested and it is able to successfully perform the basic operations of a smart garage door as proposed in the initial design and development stage.

Paper 3

Title: IoT based Noise Detector with Automatic Recording System

Authors: 1. P.M.Benson Mansingh 2. Dr.T.Jobv Titus 3. Dr.G.Sekar AP(Sr.Gr) 4. A.Shankar

Year: 2020

Summary : Talking loudly is an infuriating habit in an office environment as well as in industry the machine noise is quiet annoying. The office environment with loud co-workers can distract the work and reduce the work efficiency. The machine noise in an industry environment above 85dBA affects the hearing capacity. To help and solve this issue, a noise detector with instinctive recording device is proposed. This device informs the user about the noise level and whenever the noise level exceeds the limit, it automatically records the sound and its duration. This system finds wide advantage for labors in industry, which provides frequent warning information to the user if the noise limit exceeds.

The advantage of this model is to develop a swarm architecture for data acquisition at sensor nodes. The architecture is modelled with a set of cluster nodes in which each cluster nodes includes a primary sensor node and the remaining sensor nodes within the cluster act as secondary nodes.

Paper 4

Title: An Implementation of High Efficient Smart Street Light Management System for Smart City

Authors: YU-SHENG YANG¹ , SHIH-HSIUNG LEE² , GUAN-SHENG CHEN³ , CHU-SING YANG³ , (Member, IEEE), YUEH-MIN HUANG¹ , (Senior Member, IEEE), AND TING-WEI HOU¹ , (

Year:2020

Summary : Street light are among the most common infrastructure in cities. Street lights and sensors can be combined to generate an interface of data collection. The analysis of massive data serves as an integral element of a smart city. This paper proposes a highly efficient system for the configuration, deployment, and management of smart street lights. The features of fast deployment and high scalability of the container-based system management result in virtual deployment. Additionally, for database design, NoSQL and in-memory databases are integrated to realize flexible data management. In terms of data transmission, this paper designs an asymmetric key and an SSH encrypted tunnel. Moreover, when all the services are connected, it conducts legitimacy validation via a token. Therefore, this system can help meet the demands for data throughput, lowlatency, configuration, and realization of a smart city. It boasts high efficiency and security. Besides, it offers a flexible data storage and management service to facilitate the massive data processing of a smart city. With respect to experiments, this paper designs a street lighting simulation system with edge computing devices (consisting of a micro-controller, a sensor, and an IP camera) and a street lighting function. The system collects real-time sensed environmental data, enables live streaming of images, and offers an API for historical data query. This paper utilizes container-based virtualization to deploy all edge computing devices on the server and validates the feasibility

of simultaneous operation of multiple container-based services on edge computing devices. This system has high commercial value.

Paper 5

Title: Analysis on IoT Based Smart Cradle System with an Android Application for Baby Monitoring

Authors: Kavitha S, Neela R R, Sowndarya M, Madhuchandra, Harshitha K.

Year: 2019

Summary : A system of interrelated computing devices, mechanical, and digital machines that are provided with the ability to transfer data over a network without requiring human interaction constitutes Internet of Things. This brings out automation of things. It is achieved through sensor and actuator devices. This paper brings out a survey on various sensors and actuator which is used in the implementation of Smart Cradle.

Internet of Things brings the smartness among the devices. This paper presents the various types of sensors and actuators which brings the automation to cradle. The study of various types of sensors helps to achieve the smartness of cradle with additional features to the cradle and these sensors can be used for securing toddler

Conclusion

Studied different IOT based researched paper and understand how to make the first moves also learn abstract and proposed system.

References

- [1] R. R, D. J. N, D. J, D. S and H. M, "A Novel IoT based Smart Garbage Monitoring System," 2022 *6th International Conference on Intelligent Computing and Control Systems (ICICCS)*, Madurai, India, 2022, pp. 513-518
- [2] K. Bounnady, P. Sibounnavong, K. Chanthavong and S. Saypadith, "Smart Crop Cultivation Monitoring System by Using IoT," 2019 *5th International Conference on*

Engineering, Applied Sciences and Technology (ICEAST), Luang Prabang, Laos, 2019, pp. 1-3, doi: 10.1109/ICEAST.2019.8802584.

[3] M. I. Mohamed Ariff, F. D. Mohamad Fadzir, N. I. Arshad, S. Ahmad, K. A. Salleh and J. A. Wahab, "Design and Development of a smart garage door system," 2022 IEEE International IOT, Electronics and Mechatronics Conference (IEMTRONICS), Toronto, ON, Canada, 2022, pp. 1-6, doi: 10.1109/IEMTRONICS55184.2022.9795768.

[4] P. M. B. Mansingh, T. J. Titus, G. Sekar and A. Shankar, "IoT based Noise Detector with Automatic Recording System," 2021 5th International Conference on Computing Methodologies and Communication (ICCMC), Erode, India, 2021, pp. 466-468, doi: 10.1109/ICCMC51019.2021.9418394.

[5] S. Kavitha, R. R. Neela, M. Sowndarya, Madhuchandra and K. Harshitha, "Analysis on IoT Based Smart Cradle System with an Android Application for Baby Monitoring," 2019 1st International Conference on Advanced Technologies in Intelligent Control, Environment, Computing & Communication Engineering (ICATIECE), Bangalore, India, 2019, pp. 136-139, doi: 10.1109/ICATIECE45860.2019.9063773.