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Review on Smart City of Improving Environment Using IoT Techniques

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Abstract: *Internet of Things has given us a new epoch of computing technology. Thoughts of creation that correlates a different means of considering the events with invented concepts that avail the possibilities proposed by new approaches in intelligent ways.In, The current scenario, asan air pollution is increasing, because of this pollution, we are going in open vehicle or in close vehicle such decision are taken.Most of the time, I identify, in red signal, People are not follow signals and vehicle not stop. And occur accident .so, for decreasing accident such point of view, project is decidedsome people are aware, some are not the engine on in red signal the fuel is waste in large amount when people are in red signal. But some people save fuel hence environment cost is decreasingToday, safety on roads, cleanliness in residential areas, has become an essential component in our daily life. So there is a necessity to avail new approach of innovative technologies based on Internet of Things to solve the environmental problems. In this paper I surveyed some of these problems and suggested various executable plans also. . This review paper has also shown that it is possible and affordable to construct these smart systems based on Internet of Things. In this review paper, I am designingvarious modules which can sense unforeseen happenings such as traffic jam, accidents, etc. using different sensors and demonstrate the facts accumulated on LCD display.*
Keywords: *IOT, Smart city, LM35,8051microcontroller,PIC , Pollution Sensor, Ultrasonic sensor, Zigbee.*

I. Introduction

Internet of thing (IoT) has changed people way of using technology. Devices operating using internet has evolved over the last few years. Due to the advancement of sensor technology the way of working has improved a lot that is speed, performance. In this project I am developing a system "SMART CITY" that is equipped with Internet of Things. It will also facilitate with different features like environmental parameter, accident detection, road signage, school/hospital. This system will help to improve the smart environment conditions and provide a better way of living. Thus this system will make the city better than the existing smart cities that are available.

Smart cities will incorporate information and communication technologies which enhance city functions and the quality of life of its citizens.And hence from these technologies it should minimize the use of resources, avoid wastage, and reduce overall costs. Some technologies used to make cities smart are sensors which help manage streetlights and traffic signals.

The Internet of Things (IoT) is a recent communication paradigm that aims at making the Internet even more immersive and pervasive. Furthermore, by enabling easy access and interaction with a wide range of devices such as, for instance, home appliances, surveillance cameras, monitoring sensors, actuators, displays, vehicles, and so on, the IoT will faster the development of a number of applications that make use of the potentially large amount and variety of data generated by such objects to provide new services to citizens, companies, and public administrations.

Environmental change is affecting cities and their inhabitants more regularly. This brings new challenges for city planners, such as the need to improve air and water quality, and control noise pollution to create a healthy and enjoyable environment for city inhabitants. In addition, the consequences of extreme weather on a city, such as flooding caused by typhoons or heavy snowfalls needs to be well managed to prevent adverse impacts to a cities citizens and businesses.

II. Literature Survey

[1]NehaFirdaushRaun "Smart environment using internet of things (IOTS) - a review"Published in 2016 IEEE 7th Annual Information Technology, Electronics and MobileCommunication Conference (IEMCON)This paper provides a broad overview on what is IOTS, different applications of IOTS, challenges and future scope of IOTS. A world where the real, digital and the virtual are converging to create smart

environments that make energy, transport, cities and many other areas more intelligent. [2] Madhvi A. Pradhan; SupriyaPatankar; AkshayShinde; VirendraShivarkar; PrashantPhadatare"IoT for smart city: Improvising smart environment" 2017 International Conference on Energy, Communication, Data Analytics and Soft Computing (ICECDS) In this project we have developed a system smart city that is equipped with Internet of Things. System is also facilitated with different features like water pollution detection, weather monitoring, accident detection and video surveillance. [3] C. Tejaswini Roy; D. Sri Lakshmi; G. Anirudh Kumar; H. N. Vishwas "International Conference On Smart Technologies For Smart Nation (Smart Tech Con)"2017.Smart environment using IoTThis paper describes an efficient pollution monitoring system which monitors the emissions from each vehicle on a daily basis and updates it to the web server so that respective action will be taken by the authorities. It uses Arduino, GPRS/GSM,RFID, AWS i.e. Amazon Web Server [4] AmanyAlnahdi; Shih-Hsi Liu "Mobile Internet of Things (MIoT) and Its Applications for Smart Environments" Published in: 2017 IEEE International Congress on Internet of Things (ICIOT): In this paper, we propose a new model for IoT that provides mobility in terms of location change. In addition, we propose our positional view of the components of Mobile IoT model. Moreover, we provide scenario applications for Mobile IoT uses.[5] NeeharikaCherukutota ;ShraddhaJadhav "Architectural framework of smart water meter reading system in IoT environment",2016 International Conference on Communication and Signal Processing (ICCSP)Internet of Things (IoT) has provided promising opportunities to create powerful industrial and domestic applications. One of its main applications is smart metering. Water is the most precious resource that must be used responsibly. Information about the usage of water can reduce the water wastage and will help in water management.[6] Jih-Wei Wu ; Ding-Wei Chou ; Jehn-Ruey Jiang The Virtual Environment of Things (VEoT): A Framework for Integrating Smart Things into Networked Virtual Environments, 2014 IEEE International Conference on Internet of Things and IEEE Green Computing and Communications (GreenCom) and IEEE Cyber, Physical and Social Computing (CPS Com)The key concept of the Internet of Things (IoT) is linking physical smart things to the Internet to make them active participants on the Internet. [7] JaganathanVenkatesh; BarisAksanli; Christine S. Chan; AlperSinanAkyurekTajanaSimunicRosing "Modular and Personalized Smart Health Application Design in a Smart City Environment" IEEE Internet of Things Journal, 2018 , Volume: 5 , Issue: 2In this paper, we apply our modular approach for IoT applications - the context engine - to smart health problems, enabling the ability to grow with available data, use general-purpose machine learning, and reduce compute redundancy and complexity. For smart health, this improves response times for critical situations, more efficient identification of health-related conditions and subsequent ac tuation in a smart city environment[8]A. Vimal Jerald; S. Albert Rabara; DaisyPremilaBai"SecureIoT architecture for integrated smart services environment",2016 3rd International Conference on Computing for Sustainable Global Development (INDIACom) This paper proposes a novel security architecture for integrated IoT Smart Services Environment which could resolve the security problems. The proposed security architecture has four levels of security namely user and device authentication, sensor network security, cloud and internet security, applications and services security[9] Jiang Lu ; Xingang Fu ; Ting Zhang "A smart system for face detection with spatial correlation improvement in IoT environment",2017 IEEE Smart World, Ubiquitous Intelligence & Computing, Advanced & Trusted Computed, Scalable Computing & Communications, Cloud & Big Data Computing, Internet of People and Smart City Innovation This paper presents an Internet of Things (IoT) based face detection system. The main objective is to build a fully automated human face detection system for images with complex backgrounds. Our system can capture images and run face detection algorithms on each IoT smart camera device, which is required to write face detection program code.[10]RajdeepKumarNath ; RajnishBajpai ; HimanshuThapliyal "IoT based indoor location detection system for smart home environment", 2018 IEEE International Conference on Consumer Electronics (ICCE) Smart home environment is expected to meet the requirements, essentially for the aging population, to support the concept of "aging in place", to provide reliable care and to ensure safety and proper diagnosis by keeping track of daily living, medical condition of the resident and providing feedback to the caregiver. In order to meet these requirements, smart home of today should support a number of functionalities.[11]A. Boubrima, W. Beackit, and H. Rivano, "A new WSNdeployment approach for air pollution monitoring," in 14thIEEE Annual Consumer Communication and NetworkingConference (CCNC), NV, USA, Jan. 2017, [12] P. Khunsongkiet, and E. 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quality measurements and virtualization in the city of things testbed," in IEEE International Smart Cities Conference

(ISC2), Trento, Italy, Sep. 2016,[15] K. Zheng, S. Zhoa, Z. Yang, X. Xiong, and W. Xiang,"Design and implementation of LPWA-based air quality
monitoring system," IEEE Access, vol. 4, 2017

III. Research Methodology

The objective of this project is to implement services that support the smart city. The services are going to address environmental parameter accident detection ,road signage, school/hospitalThese automated services will contribute in making a city smart.

The objective of project is to implement the services that support Smart City. The aim will be achieved by applying following objectives-

3.1. In suggested paper work, I will implement PICmicrocontroller and PIC Microcontroller whichwill operates on
64MHz.

3.2 Identify ultrasonic non contacts sensor.

3.3. To reduce sound pollution.

3.4 To reduce air pollution by monitoring physicalparameter (dust, humidity, gas sensor, temperature).

3.5 To convey all data toward vehicle driversthrough multimode communication.

IV. Existing System

4.1 In,The current scenario,as the air pollution is increasing,because of this pollution ,we are going in open vehicle or in close vehicle such decision are taken.

4.2 Most of the time,I identify, in red signal, People are not followsignals and vehicle not
stop. And occur accident .so, fordecreasingaccident such point of view, project is decided.

4.3 Even, in main area, the Road signage board is also not follow some people, in an over bridge area, the speed limit board, no horn sign board ,this board also not follow people, hence such concept also include in this project.

4.4 also ,driver in the vehicle according in electronics, system is follow, because of this accident is decreasing, speed is decreasing,

4.5Some people are aware ,some are not the engine keep on in red signal the fuel is waste in large amount when people are in signal. But some people save fuel hence environment cost is decreasing***

V. Conclusion

This paper designing various modules which can sense unforeseen happenings such as traffic jam, accidents, etc. using different sensors and demonstrate the facts accumulated on LCD display..It will help in better utilization of available infrastructure facilities and thus provide a decent environment through the smart solutions. So the use of IoT is the best option to make city smart.

Reference

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[10]. Rajdeep Kumar Nath ; RajnishBajpai ; HimanshuThapliyal"IoT based indoor location detection system for smart home environment" ,2018 IEEE International Conference on Consumer Electronics (ICCE) Smart home environment