International Journal on Applications in Engineering and Technology
Volume 7 : Issue 3 : October 2021, pp 1 – 5 www.aetsjournal.com ISSN (Online) : 2455 - 0523

Smart Gardan Management System Using IOT

Mr. P.ARUNKUMAR , Ms. SWETHA V
Assistant Professor, Department Of ECE, Sir Issac Newton College of Engineering and Technology, Nagapattinam, 611102. Emailid: kumarpece12@gmail.com
Assistant Professor, Department of ECE, Dhanalakshmi Srinivasan College of Engineering and Technology, Mamallapuram, Chennai 603104 Emailid: swethavijayan07@gmail.com

***Abstract*—** This project focuses on design and implementation of an IOT based smart city using ARDUINO. Aim of project is to create an urban IOT system that helps to achieve the smart city and also solving the domestic problem using cloud-computing. Now a day's automation plays important role in implemented system three parameters are atomized which are Wastage maintenance, garden automation and Street Light management .such type of atomized system can work more efficiently as compare to manually operated system which saves human efforts and increases accuracy of system.

***Keywords*—** Cloud computing, IOT, Wastage maintenance, Garden automation and Street light etc

I. INTRODUCTION

Machine learning is an area with a huge potential for the transformation of many areas of life and science including industrial informatics. In order to hasten the application of machine learning to real-world problems, the automated machine learning (AutoML) approach has been proposed. This article extends the AutoML approach with the data-driven methodology applied to industrial problems with existing (e.g., model-based) solutions. The methodology includes five steps: Collection of data, which can be used during the development and evaluation of solutions;

- The collected data are used to evaluate the existing solution to the problem;
- Parameters of the existing solution are optimized and evaluated based on the data;
- Conventional machine learning algorithms can be applied to the problem;
- The feature engineering methods are used to find if additional features could improve the results of the machine learning algorithms

A. INTERNET OF THINGS

The Internet of Things (IoT) is the network of devices such as vehicles, and home appliances that contain electronics, software, actuators, and connectivity which allows these things to connect, interact and exchange data. The IoT involves extending Internet connectivity beyond standard devices, such as desktops, laptops, smart phones and tablets, to any range of traditionally dumb or non-internet-enabled physical devices and everyday objects. Embedded with technology, these devices can communicate and interact over the Internet, and they can be remotely monitored and controlled.

B. EMBEDDED SYSTEM

A system is an arrangement in which all its unit assemble work together according to a set of rules. It can also be defined as a way of working, organizing or doing one or many tasks according to a fixed plan. For example, a watch is a time displaying system. Its components follow a set of rules to show time. If one of its parts fails, the watch will stop working. So we can say, in a system, all its subcomponents depend on each other.

II. LITERATURE SURVEY

A. Lien-Wu Chen, and Jun-Xian Liu,, Time-Efficient Indoor Navigation and Evacuation With Fastest Path Planning Based on Internet of Things Technologies-2018: A time-efficient indoor navigation and evacuation (TINE) framework to minimize moving time for mobile users based on Internet of Things (IoT) technologies. In normal time, the proposed TINE framework can estimate the density of mobile users in each area and determine the moving speeds to pass through different areas. Based on the determined moving speed of each area, an indoor navigation path can be planned to provide the shortest moving time for a mobile user.

B. Lien-Wu Chen and Jun-Xian Liu, Easy Find: A Mobile Crowd sourced Guiding System with Lost Item Finding Based on IoT Technologies- 2017: A mobile crowd sourced guiding system, called Easy Find, using smart phones to guide indoor people and find lost items through Internet of Things (IoT) technologies. In normal time, the Easy Find system can provide the fastest guiding path with the shortest moving time to a destination place based on the density of indoor people in each area.

C. Jiangtao Wang, Yasha Wang, Daqing Zhang, and SumiHelal, Energy Saving Techniques in Mobile Crowd Sensing: Current State and Future Opportunities- 2017:An emerging paradigm to perform urban sensing tasks in recent years. In MCS systems, it is important to minimize the energy

Mr. P.Arunkumar , Assistant Professor, Department Of ECE, Sir Issac Newton College of Engineering and Technology, Nagapattinam, 611102. Emailid: kumarpece12@gmail.com

Ms. Swetha V , Assistant Professor, Department of ECE, Dhanalakshmi Srinivasan College of Engineering and Technology, Mamallapuram, Chennai 603104 Emailid: swethavijayan07@gmail.com

consumption on devices of mobile users, as high energy consumption severely reduces their participation willingness. In this article, we provide a comprehensive review of energy saving techniques in MCS and identify future research opportunities. Specifically, we analyse the main causes of energy consumption in MCS and present a general energy saving framework named ES Crowd that we use to describe the different detailed MCS energy saving techniques.

III. EXISTING SYSTEM

The basic monitoring system majorly includes various terminals of information collection and the wireless sensor network. Wi-Fi, GPRS, 3G and Zigbee are the commonly-used wireless sensor technologies, which all possess their own pros and cons. For example, though GPRS and 3G could spread in a fast speed with a low maintenance fee, they are faced with the issues of instability.

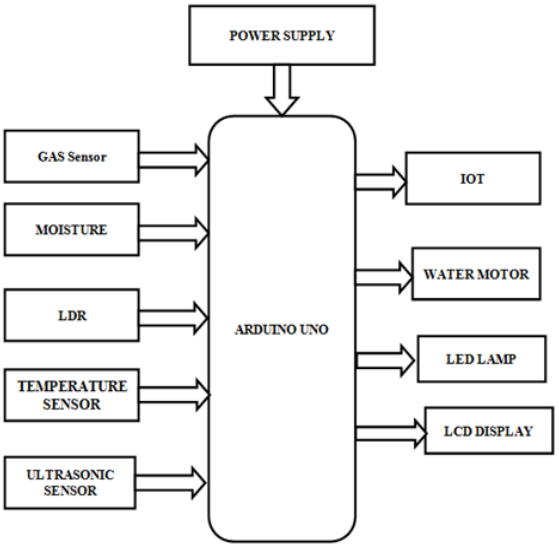
A. DRAWBACKS

- Requires computerized infrastructure
- Rarely implemented and monitored rigorously.

IV. PROPOSED SYSTEM

Smart waste collection is necessary step of smart waste management to smart our cities. Dustbins are the first step of any WMS. To make smart waste management system we should have smart Dustbins. The emerging technology of Internet of things can be used to improve our waste collection system. In this paper, we are proposing a smart waste bin to make the smart waste collection system.

A. BLOCK DIAGRAM



B. WORKING

A smart waste bin to make the smart waste collection system. Here we use ultrasonic sensor, to monitoring waste level in the bin and updated to IOT server. Temperature and Moisture sensor will use to detect the environment temperature and moisture. Based on this condition water motor will execute automatically for garden plants. This temperature and moisture will detect by DHT11 Sensor. The Street light controlling system implemented using LDR Sensor. This LDR sensor work based on light intensity. Based on lighting the street light will on & off. It will indicate as led lamp. MQ6 used as a Gas Detecting sensor. This sensor will detect any harmful gases are released in dustbin. If any harmful gas released details will updated to IOT Application. This IOT Application is made by caynee application. For internet connectivity we used Node MCU ESP8266 Module. Dustbin level, street light Conditions, Gas detection these details will update to IOT APP as well as it will indicate in the LCD also.

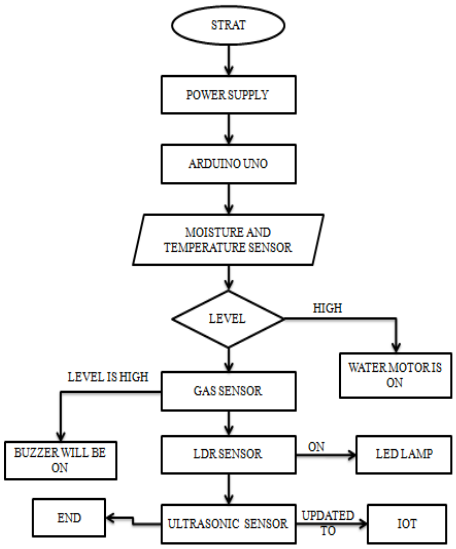
C. SMART LIGHTING SYSTEM

The street lighting is one of the largest energy expenses for a city. An intelligent street lighting system can cut municipal street lighting costs as much as 50% - 70%. An intelligent street lighting system is a system that adjusts light output based on usage and occupancy, i.e., automating classification of pedestrian versus cyclist, versus automotive. An intelligent street light management proposes the installation of the wireless based system to remotely track and control the actual energy consumption of the street lights and take appropriate energy consumption reduction measures through power conditioning and control.

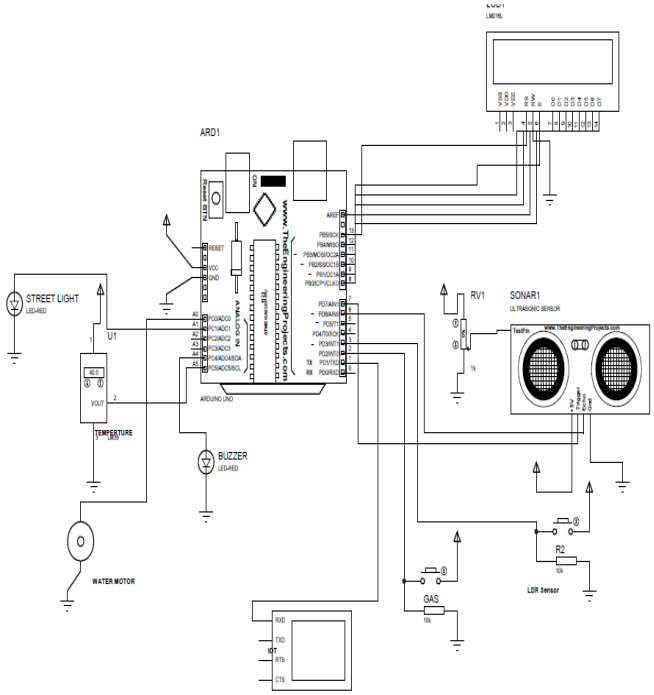
D. SMART PUBLIC GARDEN

In the management of public garden there is solid moisture sensor is place in the soil. It detects the moisture of soil and on that basis it turns on & off the water flow for garden. The gate is automatically open & closes through servo motor on given time period or user can operate it using web page. The light lamps will on & off on time user can operate it using web page. This smart garden system is advantages because it not has human resource to operate & control it.

E. FLOW CHART



F. CIRCUIT DIAGRAM



G.ADVANTAGE

- Automatically works as
  - 24x7 Monitoring the field
  - Control motor
- Low cost
- User friendly
- Easy to install

H.USAGE

SOFTWARE USED

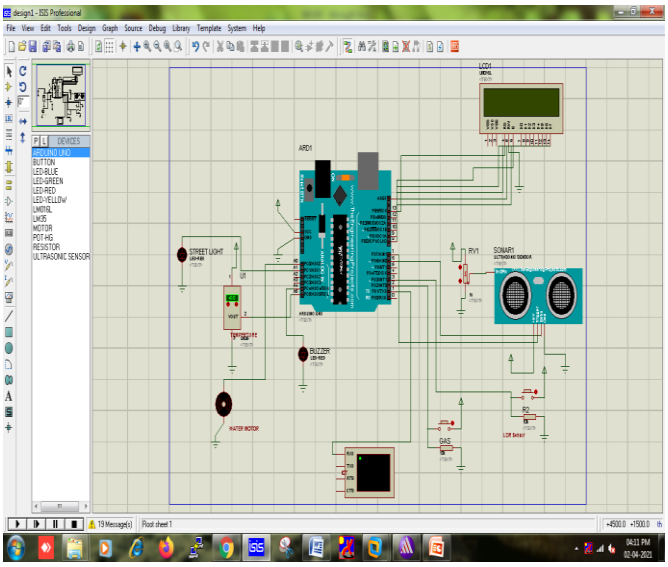
- Arduino ide
- Proteus

HARDWARE USED

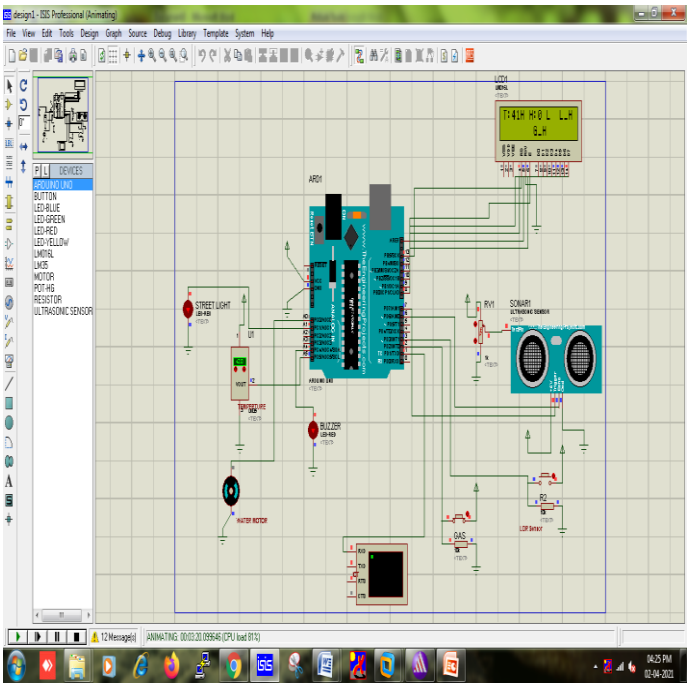
- Arduino Uno
- Power supply
- Temperature sensor
- Moisture sensor
- Ultrasonic sensor
- Gas sensor
- LDR
- IOT Module
- Water motor
- Lcd display
- LED Lamp

V.SIMULATION RESULTS

A. WITHOUT RESULTS

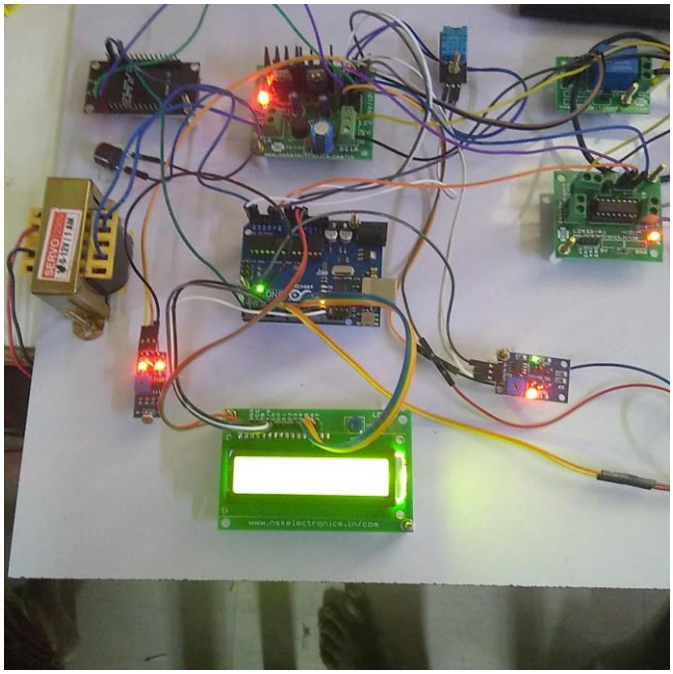


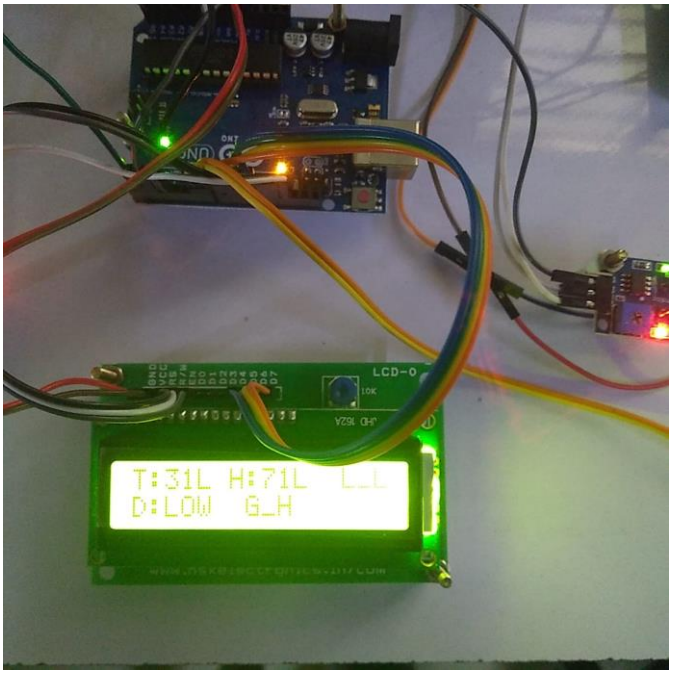
B. WITH RESULTS



C.APP DISPLAY

D.HARDWARE RESULTS





VI. CONCLUSION

The study introduces a city smart environment intranet of things based on taxis and streetlights, upon which other sensors are added to form a more multifunctional smart city intranet of things, such as the real-time traffic information and the real-time weather monitoring information like storms. Since the network of taxis and streetlights cover a wide range and is orderly distributed and easy to be managed, the ZigBee wireless sensor network based on the taxis and streetlights could offer a new idea for the construction of smart city's infrastructure. A new window to various smart city applications and services could be opened through this network, to build a smarter and more comfortable city in the big data context.

VII. REFERENCE

[1] Jain, A., Fujimoto, R., Kim, J., Liu, M., Crittenden, J., & Lu, Z. (2015). Towards automating the development of federated distributed simulations for modeling sustainable urban infrastructures. Winter Simulation Conference (pp.2668-2679).
[2] Giffinger, R. (2015). Smart city concepts: chances and risks of energy efficient urban development.
[3] Monzon, A. (2015). Smart cities concept and challenges: Bases for the assessment of smart city projects. International Conference on Smart Cities and Green ICT Systems. IEEE.
[4] Zhang, H., Li, S., & Jin, H. (2015). Guangzhou smart city construction and big data research. International Conference on Behavioral, Economic and Socio-Cultural Computing. IEEE.
[5] Jiang, L. (2015). Smart City, Smart Transportation:

Recommendations of the Logistics Platform Construction. International Conference on Intelligent Transportation, Big Data and Smart City (pp.729-732). IEEE.

[6] Zhao, L. (2014). On the policies of mechanism promotion of Ningbo intelligent city construction based on researched analysis. Advanced Research and Technology in Industry Applications (pp.583-586). IEEE.

[7] Lin, X., Quan, H., Zhang, H., & Huang, Y. (2015). The 5I Model of Smart City: A Case of Shanghai, china. IEEE First International Conference on Big Data Computing Service and Applications (pp.329-332). IEEE Computer Society.

[8] Lavric, A., & Popa, V. (2015). Performance evaluation of WSN topology control algorithms that can be used in the Smart City concept. International Conference on Electronics, Computers and Artificial Intelligence.

[9] Augustus Ehiremen Ibhaze, Simeon Olumide Ajose, Aderemi Aaron-Anthony Atayero, & Francis Enejo Idachaba. (2016). Developing smart cities through optimal wireless mobile network. 2016 IEEE International Conference on Emerging Technologies and Innovative Business Practices for the Transformation of Societies (EmergiTech).

[10] Shen, C., Choi, H., Chakraborty, S., & Srivastava, M. (2014). Towards a rich sensing stack for IoT devices. Ieee/acm International Conference on Computer-Aided Design (pp.424-427). IEEE.