

IOT Based Smart City Management

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ABSTRACT: In the present field technologies like automation, power consumption, and cost-effectiveness should be mainly considered. To reduce manpower with the help of intelligent systems automation was intended. The utilization of inexhaustible wellsprings of energy is significant in light of the fact that wellsprings of energy are restricted though energy utilization has increments. By utilizing the renewable power, it can encourage the high power demand. The main aim of this project is to describe a method of modifying the street light and smart irrigation system controller. The massive deployment internet of things is allowing Smart city project and initiatives all over the world. The IoT is modular approach to merge various sensors with all ICT solution. With over 50 billion objects will be connected and deployed in smart cities operation is the IoT communications. IoT is designed to support Smart city concept, which aims at utilizing the most advanced communication technologies to promote services administration of the city and the citizens.

Keywords: - Smart Irrigation, Sensors, Lights, IoT

I. INTRODUCTION

Our city is so simple and the usage of automated technology is very less. So that's why the people are facing more problems like water supply, road side light (street light), accidents, traffic, garbage etc., to overcome this problem we try to developed the Smart City. A smart city (aren't just concept of dream of the future.) is a municipality that use information and commutations technology (ICT) efficiently. To increase operational efficiency, shares information with the public and improve both the quality of government services and citizen welfare. Also smart city is an urban area that uses different types of electronic internet of things (IOT) sensors to collect data to manage assets, resources and services. The IoT allows thing to be sensed or

controlled remotely. Resulting in improved efficiency. Accuracy and economic benefit in addition to reduced human intervention. According to survey which is a global networking solution company, the number of things using IoT technology will increase in 50.1 billion devices by year 2020.

The project aim is the movement of vehicle is detect street light and is on/off the light is also detect the moisture of soil and provide the water and using the sensor accident location is send to the hospital and hospital immediately to provide help to that person. In addition to the city we use of the small solar panels, LED, sensors, we are interested in evaluating the model to preventing and managing the local threats. In initiation of the concept of smart cities, a set of objectives has been set to boost the cities that provides core infrastructure and give a suitable quality of life to its citizens, a clean and sustainable environment and application of „Smart“ Solutions. To improve efficiency of public utility in transportation, communication, water/gas/electricity supply and subsequently realize modern lifestyle for the citizens. To improve safety and security in the living environment by utilizing technological innovations which subsequently adds to the inclusive growth prospects of these cities as well as smartness of the cities. Utilizing information technology to its best to habilitate the migrant population with e-management systems being the major backbone of infrastructure.

II. LITERATURE SURVEY

Improvement of a framework which can screen temperature, mugginess, dampness and even the development of animals which may crush the yields in agrarian field through sensors utilizing Arduino board and if there should be an occurrence of any disparity send a SMS warning just as a notice on the application created for the equivalent

to the rancher's cell phone utilizing Wi-Fi/3G/4G. The framework has a duplex correspondence connect dependent on a cell Internet interface that takes into consideration information review and water system planning to be modified through an android application. In light of its energy independence and ease, the framework can possibly be helpful in water restricted topographically secluded areas.

The mechanized water system framework created demonstrates that the utilization of water can be lessened for a given measure of new biomass production. The utilization of solar power in this water system framework is relevant and essentially significant for natural harvests and other agrarian items that are topographically disengaged. The Internet interface permits the oversight through versatile media transmission gadgets, for example, a Smartphone. The programmed water system and framework that has been actualized at moderately minimal effort. In this venture ZIGBEE network is utilized. The recreation is finished with the help of Keil C μ vision programming. In this framework ZIGBEE conventions replaces the wired water system framework. This framework ends up being a constant input control framework which screens and controls all the exercises of water system framework effectively. Inserted System Design for Irrigating Field with Different Yields Using Soil Moisture Sensor be utilized to actualize proficient water system plot for the field having extraordinary crops. The framework can be additionally improved by utilizing fluffy rationale regulator. The fluffy rationale conspire is utilized to increment the precision of the deliberate worth and aids choice making. Programmable Irrigation Control System Using Li-Fi created demonstrates that it has minimal effort. Moreover other

applications, for example, temperature checking in fertilizer creation can be effortlessly executed. The LI-FI correspondence and Internet association permits the information assessment progressively on a site.

III. OBJECTIVES OF SYSTEM

The objective of the smart cities mission is to promote cities that provide core infrastructure and give a decent quality of life to its citizens, a clean and sustainable environment and application of environment and application of 'smart' solutions. There are large sets of objectives for Smart city, which includes:

- Improving the citizen's services.
- Improving the infrastructure and services.
- Housing and basic sanitation facilities for all.
- To reduce the overall wastage of electricity by controlling street lights.
- Controlling the wastage of water by using smart Irrigation System control.
- Using face detector we can count how many people check in or check out in a day.
- By using traffic control system we can detect vehicles that are coming from wrong side.

IV. IMPLEMENTATION DETAILS OF MODULE

The system is designed to monitor the status of the plants and provide required amount of water to the plant. Also this system includes counting of vehicles passing. For vehicle counting we are using IR sensor and LED, which will be there to display the status. Soil Moisture sensor are used to monitor the water level in soil and separate water pumps if needed.

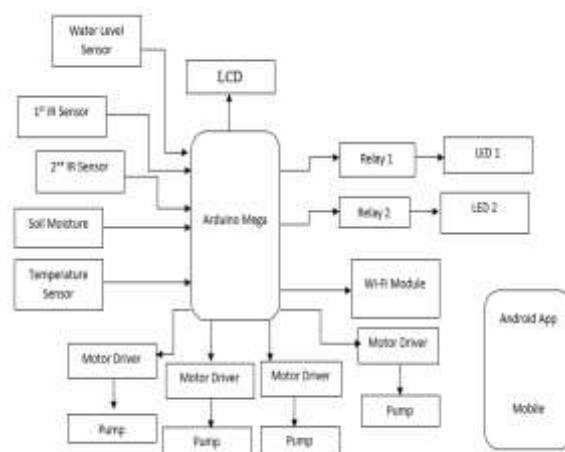


Fig: - System Architecture

Temperature sensor are used to monitor environment temperature . All these Parameters are updated on IoT platform. Android application will be used to get the current status of the system. When vehicle is arrived lights will be turned on through relay. Count of vehicle will be displayed on LED and Android app also.

DC pumps are operated using motor drivers module. The motor driver module used is L293D which can operate these pumps. Wi-Fi module ESP8266 used to provide connectivity to the android and system. Level Sensor are used to check the level of water in tank

Hardware Required

Moisture sensor: The Moisture sensor is used to measure the water content of soil. When the soil is having water shortage, the module output is at high level, else the output is at low level. This sensor reminds the user to water their plants and also monitor the moisture content of soil. Has been widely used in agriculture, land irrigation and botanical gardening.

Solar panel: The solar panel or module is a series of silicon cells that interconnect to form a circuit. In larger amounts the amount of power generated by these interconnected cells can be increased and used as an electricity production system. Besides that, solar panels are devices that convert sunlight into electricity. They come in various rectangular shapes and are usually assembled in combination to produce electricity.

SENSORS: The sensors are used to collect data from surrounding. They provide the environmental parameters like temperature, humidity, vibrations, noise/sound, light intensity etc. They require very less power for working. The accuracy and reliability of sensors plays vital role in selecting a proper sensor for particular application.

LDR: LDR is made of high resistance semiconductor when light falls on such semiconductor; bound electrons get light energy from incident photons. Due to this extra power, this electron becomes free and jumps to the conduction band. Electron hole pairs are produced because these charges carry the LDR's increased conductivity, its durability. The light dependent resistor as the name suggest depends on light for the variation of resistance. Light dependent resistors are available as discs of 0.5 cm to 2.5 cm.

Arduino: Arduino is an open source electronics platform based on microcontroller board based on

the Microchip Atmega2560 microcontroller and developed by Arduino.cc.

ESP8266 wifi module: The ESP8266 wifi module is a self-contained SOC with integrated TCP/IP protocol stack that can give any microcontroller access to your Wi-Fi network. The ESP8266 is capable of either hosting an application or offloading all wifi networking functions from another application process.

Software Used: -

- Python

V. CONCLUSION

A smart irrigation system that optimizes water usage is developed. This system guarantees the longevity of irrigation pumps; prevents water wastage through water recycling and prioritizes pump operations based on the level of water in reservoir. This way, it ensures that different plants are irrigated in relation to their varying water needs for effective growth. It would be useful in places where water scarcity is a challenge to the practice of irrigation.

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