International Journal of Advance Research in Science and Engineering
Volume No.07, Special Issue No.03, February 2018
www.ijarse.com
IJARSE
ISSN: 2319-8354

SMART PUBLIC GARDEN BY USING ARDUINO

Prof.R.B.Thombare[1], Sawakhande Pranita[2], Dinde Swati[3], Patil Swati[4]

[1,2,3,4]*Electronics &Telecommunication Eng.*

Nanasaheb Mahadik Collage Of Engineering Peth,

Islampur, Tal-Walwa, Dist- Sangli (India)

ABSTRACT

In many city some times we observed problem of garbage bins or dustbin. At some time bad smell is also spread. Another problem is wastage of water and electricity.Because India is the largest freshwater user in the world.Automation makes an efficient use of electricity and water. To avoid this situation in this paper we have to use garbage collection by using GSM. To control wastage of electricity we have to use LDR and wastage of water for that we have to use soil moisture sensor.

Keywords-GSM, IR sensor, LDR, Soil moisture sensor.

I.INTRODUCTION

Water is required for the basic growth and maintenance of grass or plant . the sensor have adjustable moisture content set point[1]. When the sufficient amount of water is not present for plant needs, The stress can accour and ultimately lead to reduced quality or death. al the Water Valve automatically controls the existing water system based on data collected by the Garden Sensor and adapts to every change in the plant‘s requirements. Soil moisture sensor measure the volumetric water content in soil indirectly by using some other property of soil such as electrical resistance, dielectric constant. The dielectric constant can be throw of the soils ability to transmit electricity. For controlling wastage of water here we use soil moisture sensor. To control wastage of electricity we use LDR for turning on and off the lamp automatically without the need of human interventions. It senses the light intensity from surrounding and find whether it's day or night. and it automatically turns on when the surrounding is dark and it turns off. When it receive light from surrounding.LDR is to detect the light intensity. LDR is a device whose sensitivity depends upon the intensity of light falling on it. When the strength of the light falling on LDR increases the LDR resistance decreases, while if the strength of the light falls on LDR is decreased resistance increased [3]. This is mostly used to outdoor application in Street garden and public places where it find difficulty to appoint a person to operate the light.[2] Sometimes dustbin placed at the public places are overflowing .It creates unhygienic condition and may provoke several disease to the surrounding people. When the garbage reaches the threshold level the LED will be on once the garbage is full it will automatically send to the authorized person indicating the garbage is overloaded via GSM. The authority person clears the garbage [3]. The Garden Sensors gather and analyze data about changing weather and soil moisture conditions and then connects to the user’s Android phone with timely alerts.

II.LITERATURE SURVY

1.Goran Kitić and Vesna Crnojević- Bengin,"A Sensor for the Measurement of the Moisture of Undisturbed Soil Samples," Sensors 2013et al The main aim of this paper is to illustrate the technology that can be used for automation of gardens. The most important problems faced are the misusage of electricity and its wastage. Sometimes due to carelessness of the authorities and the workers lamps are left ON which results in wastage of electricity. Water wastage is another problem which needs to be dealt with. Our project helps to overcome all these problems.

2.Source: www.electronicshub.org/automatic-street-light-controller-circuit-using-relays-and-ldr et at Basic Feature, "Solid waste Management Project by MCGM et al how the street lights automatically turn ON in the night and turn OFF automatically at morning? Is there any person who comes to ON/OFF these light. That described below which perform this job automatically. This circuit employed the output from an uncomplicated light/dark activated circuit and oblige a relay in its output which can be further attached to switch ON/OFF a street light and electrical application in a household also.

3. P. Parwekar (2011). From Internet of Things towards cloud of things. In Computer and Communication Technology (ICCCT), 2011 2nd International Conference on, pages 329–333. IEEE, 2011 et al The Garden Sensors gather and analyze data about changing weather and soil moisture conditions and then connects to the user's Android phone with timely alerts. Also, the system includes a .Net Application which runs on a Microsoft Windows Computer which can be used to monitor the plant's conditions at user's workplace.

4. Rajeev Piyare Internet of Things: Ubiquitous Home Control and Monitoring System using Android based Smart Phone, International Journal of Internet of Things 2013, 2(1): 5-11. Et at The system used Android application is used to control and monitor the appliances and Wi-Fi technology as a communication protocol to connect system components. Depending upon the moisture level of garden land and daylight intensity, the system can detect the appropriate time of water supply to the plants and trees in the garden.

5.Deepak Mehetre Deepak Mehetre "An Autom atic Irrigation System using ZigBee in Wireless Sensor Network," 2015 International Conference on Pervasive Computing (ICPC) .et al the Water Valve automatically controls the existing water system based on data collected by the Garden Sensor and adapts to every change in the plant's requirements. This saves water, lowers utility bills, and the user needs never to worry about thirsty plants again

III. DESIGN AND DEVELOPMENT

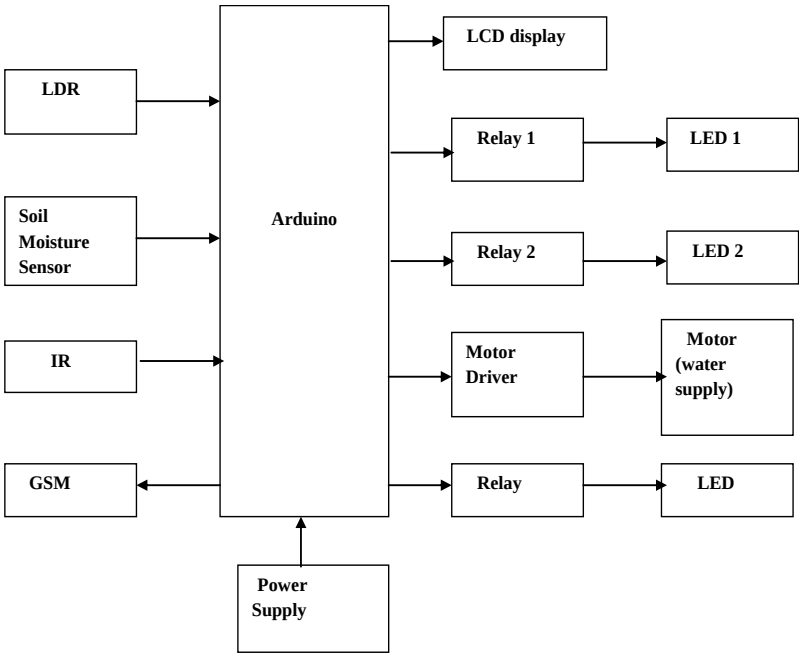

Fig.1 SMART PUBLIC GARDEN

When the garbage reaches the threshold level the led will be on. Once the garbage is full it will automatically send to the authorized person indicating that garbage is overloaded via GSM.. Once the garbage is cleared it will send a message to the authority indicating that garbage had cleared. In case of any fire accidents in the garbage bin then the fire alert message is sent to authority via GSM.[4] Hence, these sensors are covered properly in order to reduce the light effect on the sensor. The LCD display is used to display the overflow of garbage in the bin .If the level of IR sensor reaches the threshold level the garbage overloaded message will be sent to the authorized person via GSM[4]. In street light when LDR Needs no manual operation for switching ON and OFF. By using this system energy consumption is also reduced because the manually operated street lights are not switched off even the sunlight comes and also switched on earlier before sunset.

When there is a need of light it automatically switches ON. When darkness rises to a certain level then sensor circuit gets activated and switches ON and when there is other source of light i.e. daytime, the street light gets OFF. For controlling the wastage of water Soil moisture sensor checks the level of moisture content and the sensor value is amplified which will be the input for Arduino board. A customized soil water content threshold is set[5]. if the level of soil is dry then Arduino board triggers the solenoid valve to open and turn the Motor ON and it waits for the condition to go normal and automatically switches off the and motor. LCD will display the soil moisture sensor number and its reading correspondingly[6].

International Journal of Advance Research in Science and Engineering
Volume No.07, Special Issue No.03, February 2018
www.ijarse.com
IJARSE
ISSN: 2319-8354

IV.RESULT

Fig. when Dustbin is full message is Displayed on LCD display.

Fig. Screenshot of Message on registered number.

Fig. When dustbin is empty displayed

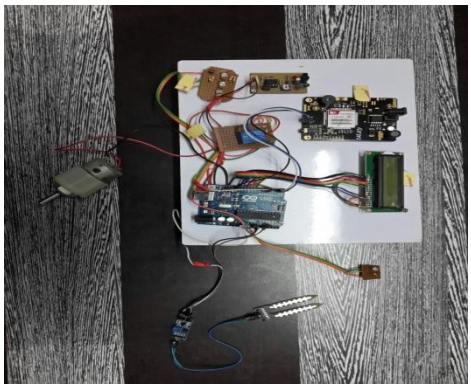

Fig. Overall circuit of project on LCD display

V. CONCLUSION

In this system the disposal of garbage is done efficiently because once waste is thrown it is immediately send message that the dustbin is started to collect the waste. With the help of GSM technology Also control the wastage of water by using soil moisture sensor and control the wastage of electricity by using LDR.

REFERENCES

[1] Goran Kitić and Vesna Crnojević- Bengin,"A Sensor for the Measurement of the Moisture of Undisturbed Soil Samples," Sensors 2013

[2] Source: www.electronicshub.org/automatic-street-light-controller-circuit-using-relays-and-ldr/

[3] Design and implementation of advanced ARM Based Surveillance System Using Wireless Communication Ms. Jadhav Gauri J. International Journal Of Engineering Research And General Science Volume2,Issue6,OCT-NOV 2014.

[4] P. Parwekar (2011). From Internet of Things towards cloud of things. In Computer and Communication Technology (ICCCT), 2011 2nd International Conference on, pages 329–333. IEEE, 2011

[5] Rajeev Piyare Internet of Things: Ubiquitous Home Control and Monitoring System using Android based Smart Phone, International Journal of Internet of Things 2013, 2(1): 5-11.

[6] Deepak Mehetre "An Autom atic Irrigation System using ZigBee in Wireless Sensor Network," 2015 International Conference on Pervasive Computing (ICPC) .