

GSM BASED PUBLIC GARDEN

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Abstract- In this paper any electrical motor can be controlled through mobile¹ or landline from any part of the country. In this paper one base unit is connected to the basic landline in parallel with the land line/mobile phone. When electrical motor is to be controlled to open or close the gate of the public garden, then first the connected mobile no. is dialed, bell is ringing and after few bell phone is automatic on and switch on the base unit to operate. Now single digital excess code is pressed, if the excess code is ok then unit give a tone pulse and switch on the base unit. Now again the switch on/off code is pressed to on/off any electrical motor which in turn will open or close the gate of the public garden. In the same manner plants can be watered by switching on the pump, lights can be switched on or off by using the same technology. In this paper number of motors can be controlled and different electrical functions through mobile.

Firstly the Microcontroller switches on the water supply once to water the entire garden few hours before opening of the garden for public. Next the gate is opened by running the motor which is driven by a motor driver operated by the Microcontroller. Then the lights are switched on and the lights remain functional till the garden remains open for visitors.

The garden remains open for about three hours and then a buzzer is sounded to indicate closure of the garden and alert the visitors. The gate is then closed lamps are switched off. These are the step involved in the operation of the circuit. Microcontroller is used to supervise the actions of all other devices and to control the entire set of operations.

I INTRODUCTION

The objective of this paper is to design a simple, easy to install, microcontroller-based circuit to monitor and record the values of light, soil moisture and sunlight of the natural environment that are continuously modified and controlled in order optimize them to achieve maximum plant growth and

yield. The controller used is a low power, cost efficient chip manufactured by ATMEL 89s52 having 8K bytes of on-chip flash memory. It communicates with the various sensor modules in real-time in order to control the light, aeration and drainage process efficiently inside a greenhouse by actuating a cooler, fogger, dripper and lights respectively according to the necessary condition of the crops. An integrated Liquid crystal display (LCD) is also used for real time display of data acquired from the various sensors and the status of the various devices. Also, the use of easily available components reduces the manufacturing and maintenance costs. The design is quite flexible as the software can be changed any time. It can thus be tailor-made to the specific requirements of the user. This makes the proposed system to be an economical, portable and a low maintenance solution for greenhouse applications, especially in public gardens

II BLOCK DIAGRAM

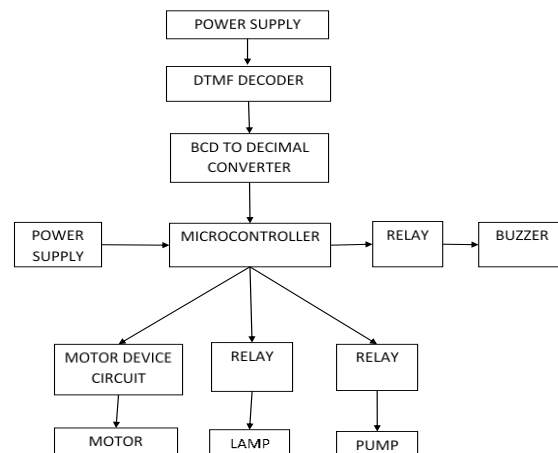


Fig 1.1 Block diagram of public garden automation

Firstly the power supply is given to the circuit and the corresponding dual tones are converted to binary output through dtmf decoder. Then the output of dtmf decoder is fed to the BCD to decimal converter which converts it into the decimal numbers. Then

microcontroller is operated and relays are drive to start the different functions of the circuit.

III CIRCUIT AND WORKING

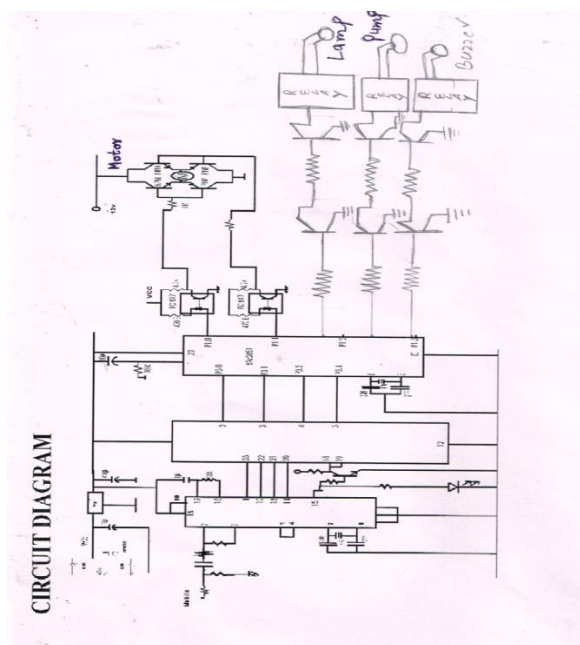


Fig 1.2 Circuit diagram of public garden automation

Supply Section of this circuit consists of a 12 volts adaptor, and an IC 7805 which the power supplies. The output of the second regulator(IC 7805) is +5 volts, which is used for all other digital applications. IC 8870(dtmf decoder) converts the dual tones to corresponding binary outputs. IC 74154 is a BCD to Decimal converter. This IC is a 24 pin IC. Then further, a microcontroller based circuit is set up and the output of the micro controller is giving negative that is further fed to the relays because relays works on the negative input². A relay is an electrically operated switch. The relay contacts can be made to operate in the pre-arranged fashion. For instance, normally open contacts close and normally closed contacts open. The output of the relay is connected to the lights, a motor regulating the opening and closing of garden gate, one connected to the gate and one connected to the buzzer. A mobile phone connected to the circuit with a sim installed and is set up on auto answering mode and another mobile phone is used to call on that phone and the circuit is so established so that after calling, pressing 1 on the phone in hand will initiate the switching on and off lights which can be used on proper timings to save time and electricity. Pressing[2] will start the water pump to water the soil and plants and water can be used efficiently by this process. Pressing 3 will initiate the starting of motor

to open the garden gate and further by pressing 4 will trigger an electric buzzer to warn everyone inside to the garden that the garden is closing after 10 minutes. All of these work together in an orderly way and make efficient use of the resources.

IV CONCLUSION

The prototype of GSM based public garden is efficiently designed. It facilitates the use of gsm to perform several mechanical functions. The phone connected to the prototype accepts the dtmf signals from the other phone. It converts the dtmf signals to binary output and it is given to the microcontroller which is further connected to the relay circuit to operate the pump, light, motor and bell.

Hence, the electrically operated instruments can be operated as per persons will and with this electricity and water and also other resource can be efficiently used and their wastage is considerably reduced to a large extent.

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