

Introduction to Public Garden Automation using Microcontroller

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Abstract

*This project the idea of **Public Garden Automation** technology has been presented. Avoid wastage of water and electricity. This project is a fine combination of analog and digital electronics. As a part of our fourth year circular activity we are making the project whose title is "Public Garden Automation". We have used Microcontroller as a main component of the project. Now a Microcontroller has become a main component of many of the electronic circuits. Also Liquid Crystal Display (LCD) is used on major basis for the display purpose.*

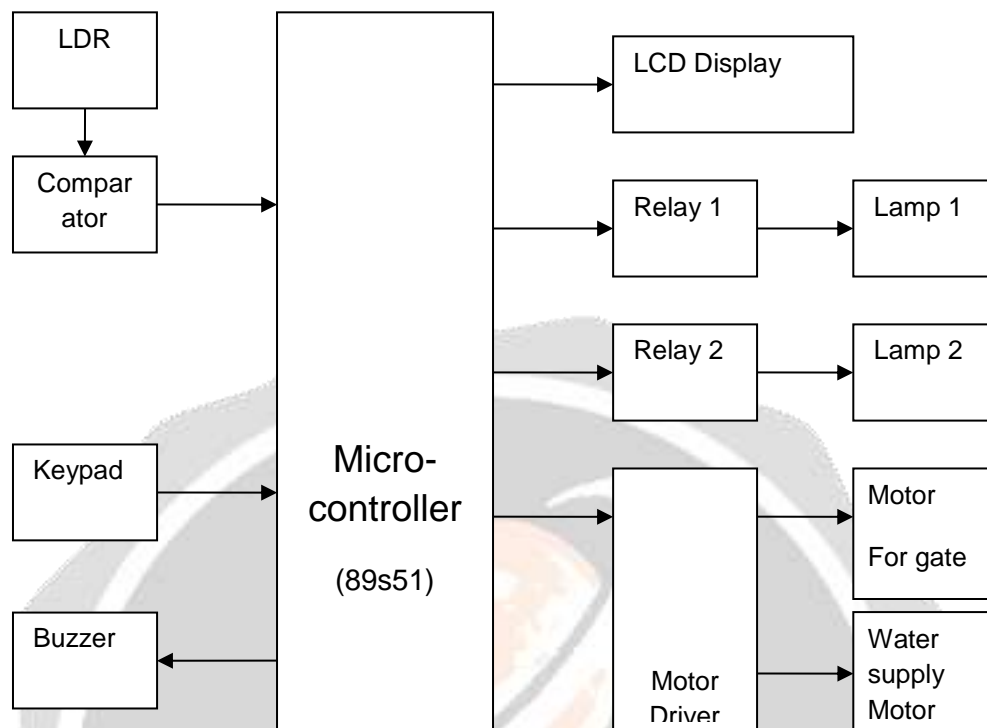
Key Words : *Microcontroller & LED, Keyboard, Relay.*

I. INTRODUCTION

The present life system of human beings is becoming fast and accurate. Society, now a days is moving at blazing speeds. To cope up with the twenty-first century i.e. with the speeds and accuracy, people seem to take the path of the electronic automation. From adding two numbers to solving complex calculations, from opening a door to launching a rocket, everywhere you find the dominance of electronic controllers. With the increase in the positivism the balance has to maintain. Natural as well as human abnormalities leading to a disaster can be stopped or at least taken care of before there is much damage. This project is aimed to fulfil, not fully though, the requirements of a user.

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Figure 1 : Block Diagram



II. MICROCONTROLLER:

1. The first & foremost criterion in choosing a Micro controller is that it must meet the task at hand efficiently & cost effectively. In analyzing the needs of a Micro controller based project, we must first see whether an 8-bit, or 16-bit, or 32-bit Micro controller can best handle the computing needs of the task most effectively. Among other considerations in the category are:
 - Speed: What is the highest speed that the Micro controller supports?
 - Packaging: Does it come in 40-pin DIP (dual in line package) or a QFP (quad flat package) or some other packaging format? This is important in terms of space, assembling & prototyping the end product.
 - Power consumption: This is especially critical for battery-powered products.
 - The amount of RAM & ROM on chip.
 - The number of I/O pins & the timer on the chip.
 - How easy it is to upgrade to higher-performance or lower power consumption versions.
 - Cost per unit: This is important in terms of the final cost of the product in which a Micro controller is used. For example, there are Micro controllers that cost 50 cents per unit when purchased 100,000 units at a time.
2. The second criterion in choosing a micro controller is how easy it is to develop products around it. Key considerations include the availability of an assembler, debugger, a code – efficient C language compiler, emulator, technical support, and both in-house and outside expertise.

III. Description of Microcontroller

Firstly the microcontroller around 4.00pm 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. At around 6.00pm the lights are switched on depending upon the output of the LDR and the lights remain functional till the garden remains open for visitors.

The garden remains open for about three hours and so around 8.50 pm a buzzer is sounded to indicate closure of the garden and alert the visitors. The gate is then closed at 9.00pm and three of the four lamps are switched off. One lamp is kept on throughout the night. In the morning the remaining lamp is switched off as the depending upon the signal sent by the light dependent resistor to the microcontroller. These are the step involved in the operation of the circuit and the public garden automation. Microcontroller is used to supervise the actions of all other devices and to control the entire set of operations.

IV. Conclusion

With the knowledge of new techniques in 'Electronics' we are able to make our life more comfortable. One such application of electronics is used in "Public Garden Automation" The approach we followed and which is explained in this project report is novel and has achieved the target of "Public Garden Automation" satisfying user needs and requirements.

The same circuit finds its use in many more applications. By this the light bulbs can be controlled with respect to intensity of light in the environment. Devices can be turned on/off with respect to desired time.

