

# GSM BASED ELECTRONIC VOTING SYSTEM

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## ABSTRACT

*In this project “GSM based electronic voting system” by providing additional benefits and flexibility to the voter. Now a days GSM technology is developed greatly, so GSM technology can be used to reduce faults which will happen in voting process. So many electronic voting methods have been proposed in the past, but most of them have failed to produce voter proof in an efficient and transparent way. Voters can utilize their voting under the supervision of election committee. The votes are then counted manually once the election has finished. Here switches are used for manual voting and GSM is used for sending message, voter can utilize their voting facility then buzzer will ON for indication purpose.*

**Key Words- AT89S52 Micro Controller, GSM, Buzzer Driver Circuit.**

## I. INTRODUCTION

Voting is the most pivotal process which is carried out to reveal the opinion of the people in selecting government or in any issue that is under consideration. So the conventional voting systems based on paper voting are being replaced by electronic voting machines. The crucial role in determining the result of an election, electronic voting systems should be developed with the greatest responsibility and security. Electronic voting machines aid blind users by reading off the instructions using headphones and also provide essential tools to help people with disabilities. Voting machines are the combination of mechanical and electronic equipments which are needed for casting votes and displaying the election results. The main proposal for using the voting machines was given in 1838. There are large number of smart systems present which employ microcontrollers for their operation and several other voting systems have been developed for ensuring a secured vote casting process. The design presented in incorporates voter information facility for getting the information about the number of voters at a place. In this paper, GSM based design of an electronic voting machine has been presented for sending the polling results to a monitoring station via mobile network and also voters can utilize their votes through GSM by simply sending a message. This system is fully secured and chances of digital tampering are also avoided. Number of voters at the polling place can be tracked by using infrared sensors.

### 1.1 Existing System

In existing system, if switch is pressed voters counting can be increased and also buzzer will ON if voting is completed. And also additionally cancelation option also available in the existing system. In this system, there is

no facility for people who are not able to attend the polling booths they didn't utilize their votes, so polling utilization percentage will decrease.

### 1.2 Proposed System

In proposed system, Voters can utilize their voting through GSM by sending message to the polling booth and also manual option also present in the proposed system for voters how are utilize their voting in polling booths. Buzzers will ON, when voting process of a single person is completed

## II. BLOCK DIAGRAM

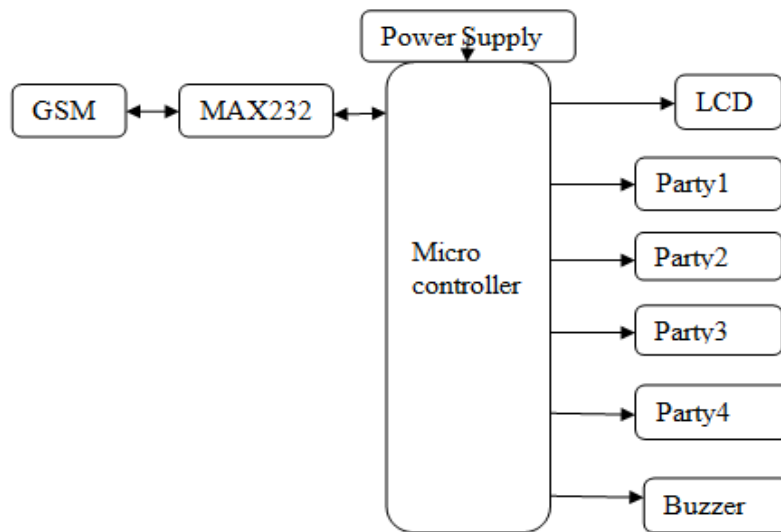


Fig: Block diagram of the project

### 2.1 8051 Microcontroller

8051 is an 8bit micro controller and it consists of 40 pins. 8051 consists of 4 ports, in those pins 32 pins are I/O pins and remaining 8 pins are used for specific task. In 8051 40<sup>th</sup> and 20<sup>th</sup> pins are Vcc and GND, without power supply and ground electricity is not passed through the controller. RESET pin is used for initialize microcontroller to default/desired values and to make a new start. XTAL 1 and XTAL 2 are for the system clock inputs from crystal clock circuit. In 8051 micro controller block diagram consist of RAM, ROM, interrupts, timers, I/O pins, serial port and CPU.

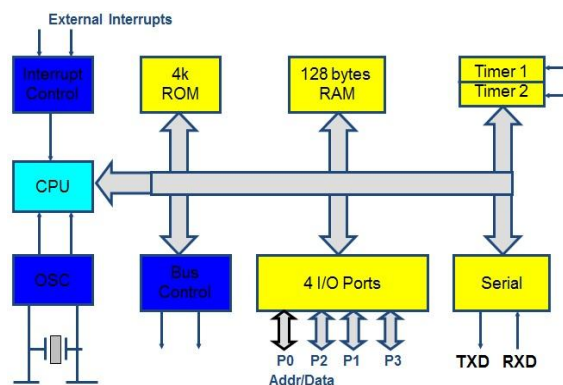


Fig: Block diagram of 8051

## **2.2 Liquid Crystal Display**

A sixteenx2 fluid precious stone alphanumeric showcase, implies that it will show 16 characters for every line and there are a couple of such lines. Amid this LCD each character is shown in 5x7 part grid. This LCD has 2 registers, to be specific, Command and data register i.e. information register. The order register stores the charge headings given to the LCD. A summon is partner degree direction given to LCD to attempt and do a predefined undertaking like introducing it, clearing its screen, setting the marker position, prevailing show and so on the information register stores the data to be shown on the LCD. The data is that the ASCII worth of the character to be shown on the LCD.

## **2.3 GSM Modem**

A GSM modem is a modulator-demodulator in which a SIM card is accepted. GSM module is used when a communication between a computer and a GSM system is required. It is used as architecture for mobile communication in many countries. GSM module consists of a GSM modem and communication interfaces like RS-232, USB along with a power supply circuit for computer. GSM modem communicates over the mobile network when connected to a computer. GSM modems are also used to send and receive SMS and MMS messages. A GSM can be easily interfaced with the microcontroller system and uses serial communication for data transfer.

## **2.4 Polling Switches**

Polling Switches are used in the system to cast votes to the candidates. By pressing the switch, vote can be given to the desired candidate. Four switches have been used in modeled system to cast votes and four switches represent the four parties.

## **2.5 MAX232**

MAX232 IC is widely used in communication systems. MAX232 is defined as it is used to convert the voltage levels of TTL to RS232 and vice versa. Firstly MAX232 is used in Serial communication. Problem arises when we have to communicate between TTL logic and CMOS logic based systems. RS232 is internationally defined standard named as EIA/TIA-232-E and in this standard logic 0 is the voltage between +3 to +15 and logic 1 is defined as the voltage between -3 to -15. In TTL logic 0 is defined as 0 volt and 1 is defined as 5 volt so in this scenario this is a very handy IC to be incorporated.

## **III. SOFTWARE DESIGN**

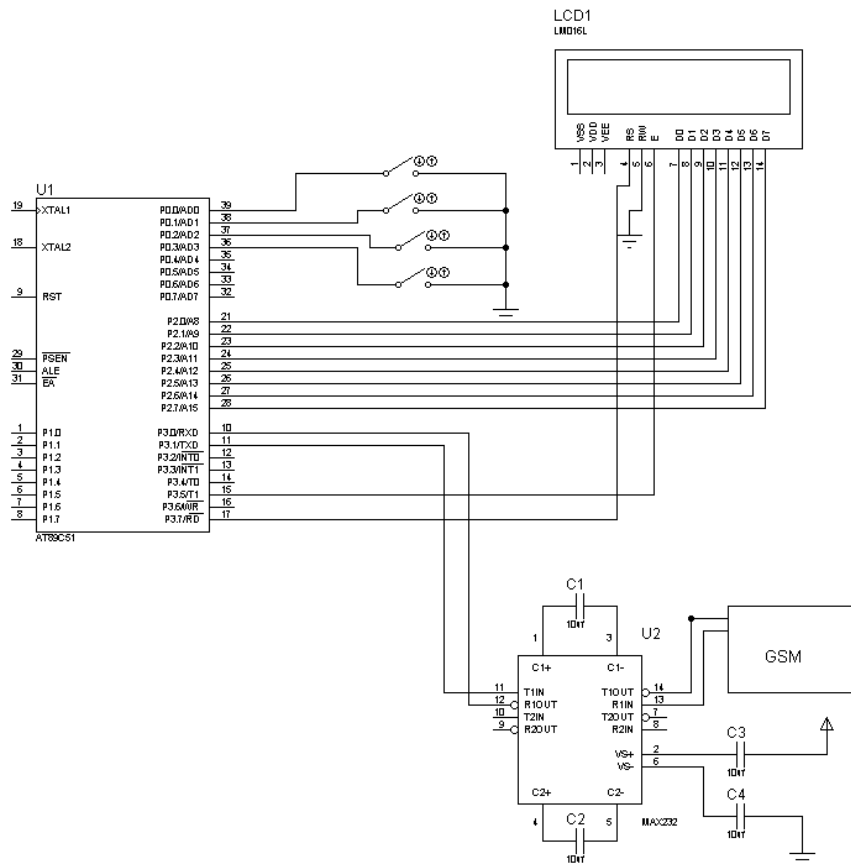
To finish the undertaking on equipment need to installed programming on to the controller utilized as a part of this venture for that reason we need programming's similar to Keil u vision and glimmer enchantment those are examined in given beneath

Compiler that keeps running on one pc however delivers PC code for an unmistakable sort of pc. Cross compilers square measure usual produce PC code which will keep running on PCs with a substitution plan or on exceptional reason gadgets that can't have their own compilers. Cross compilers square measure extremely in vogue for implanted improvement, wherever the objective more likely than not couldn't run a compiler. Normally relate degree inserted stage has limited RAM, no plate, and confined I/O ability. Code are frequently

adjusted and accumulated on a brisk host machine, (for example, a tablet or working framework workstation) and in this way the resulting feasible code will then be downloaded to the objective to be tried. Cross compilers square measure helpful at whatever point the host machine has a ton of assets (memory, circle, I/O and so on) than the objective. Keil compiler is one such compiler that backings a gigantic assortment of host and target blends. It underpins as an objective to eight piece microcontrollers like Atmel and Motorola and so forth. Streak Magic is partner application created by Embedded Systems Academy to allow you to just get to the choices of a microcontroller gadget. With this project you'll have the capacity to delete individual squares or the entire nonvolatile stockpiling of the microcontroller.

**IV. WORKING DESCRIPTION**

Here we are using AT89C51 (8051) MICRO-controller. The LCD is connected to the PORT-2. We are using 8-bit LCD. So we used 8-data lines. The register select is connected to the P3.7 and enable is connected to P3.6. So whatever the data we want we can display it on LCD. We are using UART0 for the GSM interfacing through serial communication for the purpose of to send a message to counting voter’s votes. Switches are used for manual voting these are connected to respective port pins. Buzzer can be used for completed votes of each person and it can be connected to port pin.



**Fig: Schematic diagram of the project**

Here the results are shown our project “GSM based electronic voting system” in this paper polling switches are used to count the votes and these can be displayed in LCD. If someone is not able to utilize the vote in his polling place just send a message to the respective number. So voters can utilize their voting facility through GSM.

## **VI. CONCLUSION**

In this project “ GSM based electronic voting machine” we have security by using single mobile number we can vote one time only, if any one wants to utilize the vote just send a message from their mobile, single voter can utilize their voting option one time only. If anyone sends their vote from mobile then he receive one OTP. If OTP is matched then voting is completed. Switches are used for manual voting.

## **VII. FUTURE SCOPE**

The design of the GSM based electronic voting machine in this paper is accurate and it can be further improved in terms of power consumption using advanced VLSI applications.

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