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Digital Voting Machine

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Abstract: This is an interesting project which uses 8051 microcontrollers as its brain. The project is designed for four participants. Voters can poll their vote to any one of the participant. In this project, one port is dedicated for 4 push-button switches for four participants, and a master switch for polling officer.
It is also powerful program is written in assembly language and is burnt onto the microcontroller to accept votes and to keep counting the total votes polled. Vote count is stored in EEPROM and an LCD display is provided to display the total number of votes polled and individual participant-vise votes polled. A reset button is also provided restart the program.
Keywords: Electronic voting machine, Finger print recognization, voting, counting.

I. INTRODUCTION

Digital Voting Machine is one of the important technique used for voting. In old system, the election commission has to print individual ballot paper for each and every voter. A voter uses that ballot paper voting system by ”seal and ink” to vote their chosen candidate. In that system lack of transparency in counting are the deficiency of the old system and it was a time consuming process for the counting the votes. Digital Voting Machine is a alternative method for ballet voting system which work on microcontroller. Using this system, reducing the voting time and speed up counting procedure.
The complete Digital voting machine consists mainly of three units are Control Unit, Voting Unit, Display Unit. When voter is just to press push button to make a vote unit and the pulse is generated in voting unit and Digital voting machine counts and displays the total votes sequentially for each and every candidates separately. Digital voting machine is simply to handle, easily portable, required less manpower, due to its compact size saved transportation cost and it is not time consuming machine.

A. Block diagram

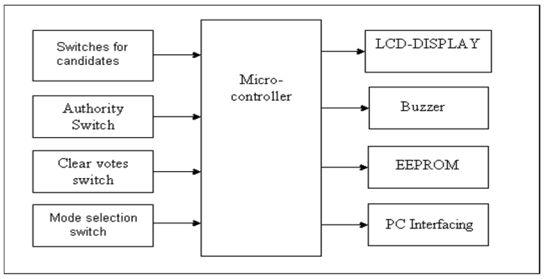


Fig.(1)

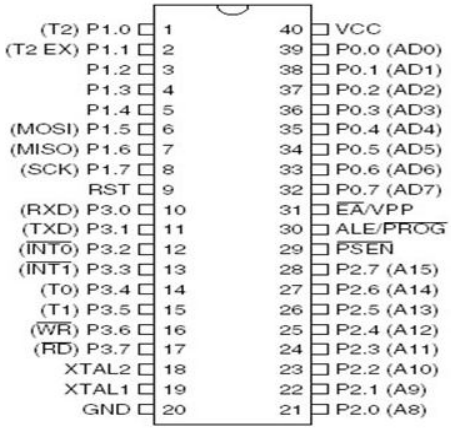
The “Electronic Voting Machine” basically consists
of four main blocks. These blocks are Keypad,
Microcontroller, LCD Display and Control switches**.**
Keypad There are 4 keys on the keypad. In this way it has one key specified for one candidate. Keypad block is used in both voting and counting mode. In voting mode, the respective candidate is pressed, the corresponding signal is sensed by micro controller. And in the counting mode this mode is used to check the votes of respective candidate.

B. Microcontroller

Micro controller senses the signal given from switches and decides the mode of operation in voting mode it increments the data for corresponding key i.e. it sends signal to display block to indicate one key is pressed for respective candidate. The microcontrollers fetches data from memory location and send it to display devices in counting mode

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C. LCD display

Liquid Crystal Display which is commonly known as LCD is an Alphanumeric Display it means that it can display Alphabets, Numbers as well as special symbols thus LCD is a user friendly Display device which can be used for displaying various messages unlike seven segment display which can display only numbers and some of the alphabets. The only disadvantage of LCD over seven segment is that seven segment is robust display and be visualized from a longer distance as compared to LCD. Here we have used 16 x 2 Alphanumeric Display which means it can display two lines with maximum of 16 characters in one line. . This device can be use to display any message status or also can be use for debugging purpose.



Fig.a

D. Control switches

There are three control switches:
Controller switch.
Mode selection switch.

E. EEPROM memory

EEPROM or E2PROM memory is used to store the voting count. Advantage of electrical erasable programmable random access memory is that it stores data in memory even after power is cut off. I2C bus protocol interfacing is used for communication with EEPROM.

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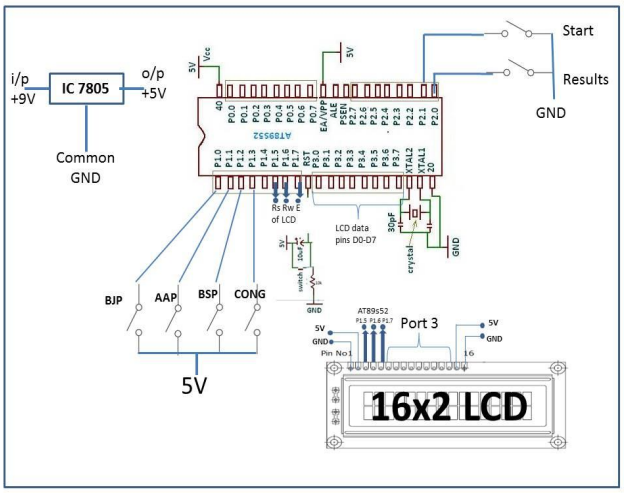


Fig.(2) Circuit diagram of DVM

II. OPERATION OF DIGITAL VOTING MACHINE

When power supply is turned on RED LED glows.

A. Mode selection

Voting mode: In voting mode toggle switch on VCC. When toggle switch is in voting mode "Voting mode" is displayed followed by "Please vote". After that a vote being given, "Please wait for authority switch" is displayed. Again that enable for voting after Control switch being pressed by the voting Authority.

Counting mode: In counting mode toggle switch on GND. When toggle switch is in counting mode "Counting mode" in displayed on the screen, for respective candidate the total no. of votes can be displayed on the screen by pressing the respective key assigned to hem.

Clear mode: Press clear switch when required all entries are to be erased. Before voting procedure should be pressed clear switch.

Buzzer indication: In voting mode, pressing of key is indicated by a buzzer sound.



Fig.b

Controller switch In voting mode this switch is provided for enabling the keypad. Controller switch is under the control of voting authority.

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B. PCB Layout of Digital Voting Machine

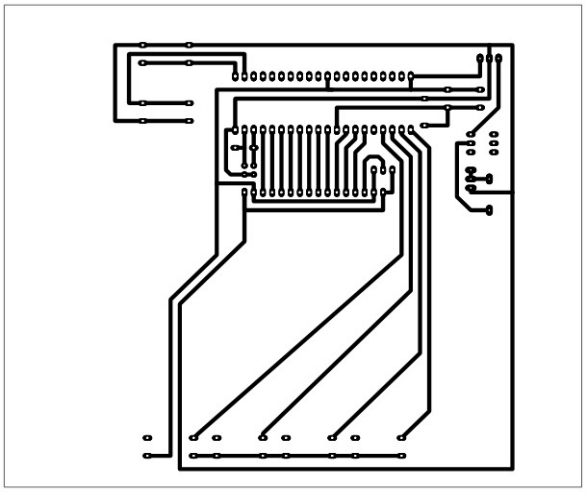


Fig.(3)

C. Future Scope of Digital Voting Machine

We can implement GSM technology in this project.

A timer could be included, which could automatically end the voting after specified duration of time.

Biometric verification of voters, so that automatically it can be insure that one person is voting only once.

EEPROM can be used to stored the data permanently.

If we make more than one EVM, each to be used at different locations and the final result is the addition of result of all, we could think of connecting them to communicate with each other an final result can be shown on the LCD.

Develop a standard for the evaluation of election voting equipment.

III. CONCLUSION

Voters trust comes from combination of the mechanisms and procedures we used to record and tally votes. Use of the E-Voting also based on the perception of the people. Result of the Election also based on the ballot design. Voter Verifiability is used to increase the trust of voter.

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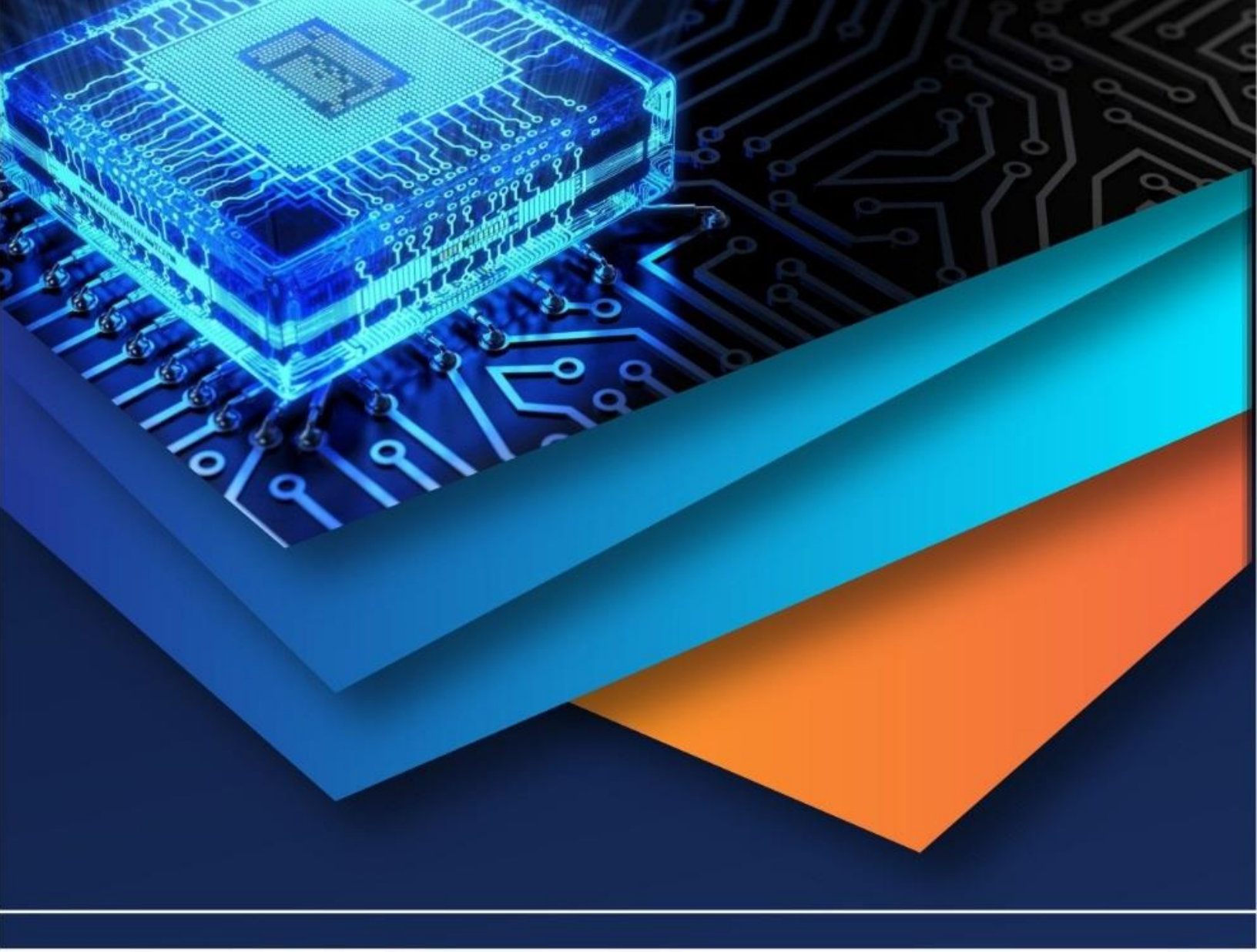
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