



IoT BASED ELECTRONIC VOTING MACHINE

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Abstract

In present days in the entire world mobiles are using very vastly so the people are expecting some new technologies in mobiles as we know android is an open source. The application we are developing is about “IoT Based Electronic Voting Machine”. It is an IoT application This paper focuses on simple, low cost fingerprint based electronic voting machine using microcontroller. An electronic voting system is a voting system in which the voters’ and voting data is recorded, stored and processed digitally. The proposed system consists of controller hardware and software. The hardware is implemented with microcontroller along with R303 finger-print module. The software code is developed in web and android development environment for interfacing the microcontroller with finger-print module. The proposed system gives the best solution for minimizing the time taken for identifying the voter. The design implemented in the microcontroller is portable, flexible and with minimum power consumption. The designed system is user friendly, easily adaptable and cost-effective. Further, the designed system has simple architecture, fast response time and scope for further expansion

Introduction

It is fair to say that Democracy and voting go hand in hand. Enabling maximum voters to take part in the election process is our primary goal. Electronic Voting Machines (EVM) have become a part of India’s election system since 1999, having replaced paper ballots and manual counting of votes. The application we are developing is about IoT Based Electronic Voting Machine using Cloud databasel. It is an IoT application This paper focuses on simple, low cost fingerprint based electronic voting machine using microcontroller. An electronic voting system is a voting system in which the voters’ and voting data is recorded, stored and processed digitally. The proposed system consists of controller hardware and software. The hardware is implemented with microcontroller along with R303 finger-print module. The software code is developed in web and android development environment for interfacing the microcontroller with finger-print module. The proposed system gives the best solution for minimizing the time taken for identifying the voter. The design implemented in the microcontroller is portable, flexible and with minimum power consumption

Literature Survey

[1] D.Ashok Kumar and T.Ummal Sariba Begum (2012)’Electronic voting machine’ (march 2012).

International conference on Electronic voting machine. This is long time consuming process and very much prone to error. This situation continued till election scene was completely changed by electronic voting machine. No more ballot paper,boxes, stamping etc. All the condensed into a simple box called ballot unit of electronic voting machine.



[2] Rahil Rezwan, Huzaifa Ahmed, M. R. N. Biplob, S.M. Shuvo, Md. Abdur Rahman ‘Biometrically Secured Electronic Voting Machine’ (Dec 2017).

IEEE region 10 humanitarian technology conference (R10- HTC) 21-23 DEC 2017,dhaka Bangladesh. In this project, They have developed a system which will be suitable for elections in countries like Bangladesh. The proposed system is more digital, technology-based and secured system.

[3] Taban Habibu, konde sharif sebwato Nicholas ‘Implementation of Electronic voting machine’ (2017).

Electronic voting comprises the use of a computer rather the traditional use of ballot at polling centers or by postal mail. Several security measures were integrated into the E-Voting system in order to achieve an enhanced, speedy and accurate performance.

[4] Yekini, N.A, Oyeyinka I.K, Oludipe O.O, Lawal O.N ‘Automated Voting Machine for election in nigeria’ (2012).

Paper- based voting system originated as a system where votes are casted and counted by hand, using paper ballots. This paper then proposed a computer based E-Voting system for future election in Nigeria. The system imitates the ATM machine used by financial institutions for financial transaccations.

Existing System:

Manual Process of this requires a lot of records to maintain all pole election data and candidate information. Existing System is manual process. Data Security is not provided in this system. Integrating data is also a problem in this system. It is not user friendly system. Its time consuming. The main objective of IoT Based Electronic Voting Machine is to provide very flexible environment to the mobile users. Now a days each and every person having a android mobile and it is easy to carry so that it is gaining the more popularity compared to the other electronic gadgets. In this competitive world we have different types of mobiles and in these mobiles also we are having different types of applications.

Proposed System:

Proposed system is IoT based electronic voting machine using cloud database in this application user can vote and vote will be store in the database and election admin can view the voted result. This has an enhanced facility. It is a fast, affordable, low risk solution with easy implementation and lower maintence and operational Costs.

Objectives:

- This project intends to speed up the counting of ballots, reduce the cost of paying staff to count votes manually.
- Results can be reported and published faster. Adapting new methods to reduce human effort .
- To implement biometric verification for the voting process .
- Efficient and accurate calculations of voting results .

Methodology

A. Block Diagram of Proposed System

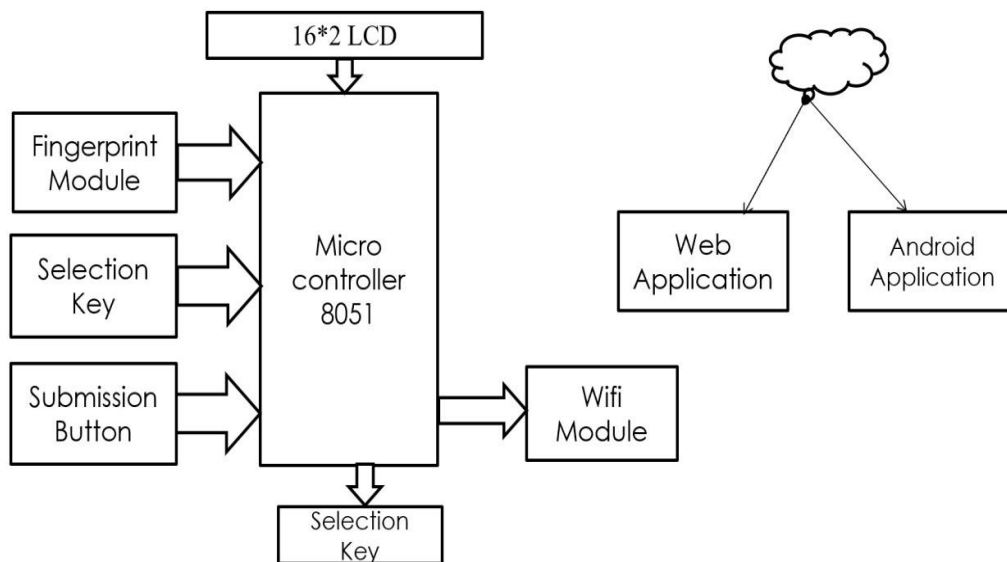


Fig:1 Block Diagram

The methodology of our proposed model is as follows:

- We are designing a Electronic Voting Machine where there is no need for the user to carry his Identity cards which contains required details for voting at the polling booth.
- The person at the polling booth just needs to place his Finger on finger print module at the counter of the polling booth, thus allowing the acquisition of an on-spot Fingerprint from the voter which serves as an identification.
- Proposed system is IoT based electronic voting machine using cloud database in this application user can vote and vote will be store in the database and election admin can view the voted result.

B. System Components

MCU 8051:

In this IC 89C51 is used, which is also an MCU 8051 family package. In our project a microcontroller IC plays a very important role. In which it is used as intermediating device between human and machine. All the input devices are connected to output through this microcontroller.

PORT P1 (Pins 1 to 8):

The port P1 is a general purpose input/output port which can be used for a variety of interfacing tasks. The other ports P0, P2 and P3 have dual roles or additional functions associated with them based upon the context of their usage.

PORT P3 (Pins 10 to 17):

PORT P3 acts as a normal IO port, but Port P3 has additional functions such as, serial transmit and receive pins, 2 external interrupt pins, 2 external counter inputs, read and write pins for memory access.

PORT P2 (pins 21 to 28):

PORT P2 can also be used as a general purpose 8 bit port when no external memory is present, but if external memory access is required then PORT P2 will act as an address bus in conjunction with PORT P0 to access external memory. PORT P2 acts as A8-A15.

PORT P0 (pins 32 to 39):

PORT P0 can be used as a general purpose 8 bit port when no external memory is present, but if external memory access is required then PORT P0 acts as a multiplexed address and data bus that can be used to access external memory in conjunction with PORT P2. P0 acts as AD0-AD7.

Power supply circuit

Power supply is a reference to a source of electrical power. A device or system that supplies electrical or other types of energy to an output load or group of loads is called a power supply unit or PSU. In this project, a +5 V DC regulated power supply is derived from the power supply unit designed and implemented. The Figure shows the circuit diagram designed to get the +5 V DC regulated power supply for the project. A full-wave rectifier is a device that has two or more diodes arranged so that load current flows in the same direction during each half cycle of the ac supply.

LCD DISPLAY

LCD (Liquid Crystal Display) screen is an electronic display module and find a wide range of applications. A 16x2 LCD display is very basic module and is very commonly used in various devices and circuits. These modules are preferred over seven segments and other multi segment LEDs. The reasons being LCDs are economical, easily programmable, have no limitation of displaying special & even custom characters (unlike in seven segments), animations and so on.

Result:

1. Existing voting system have flaws as well as requirement of huge manpower. In order to provide better security and enable safe voting, we have biometric authentication, namely fingerprint authentication.
2. This application user can vote and vote will be store in the database and election admin can view the voted result.

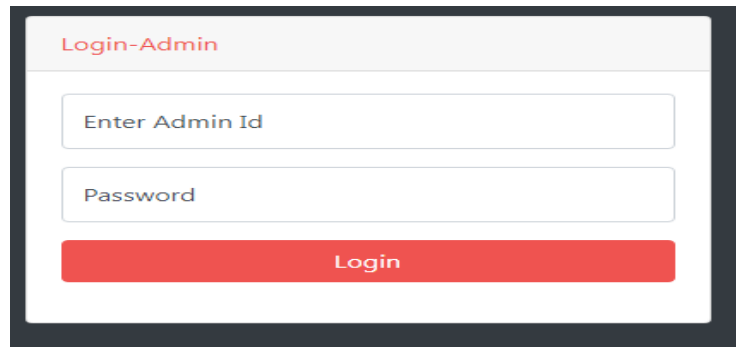


Fig:2 Login Page

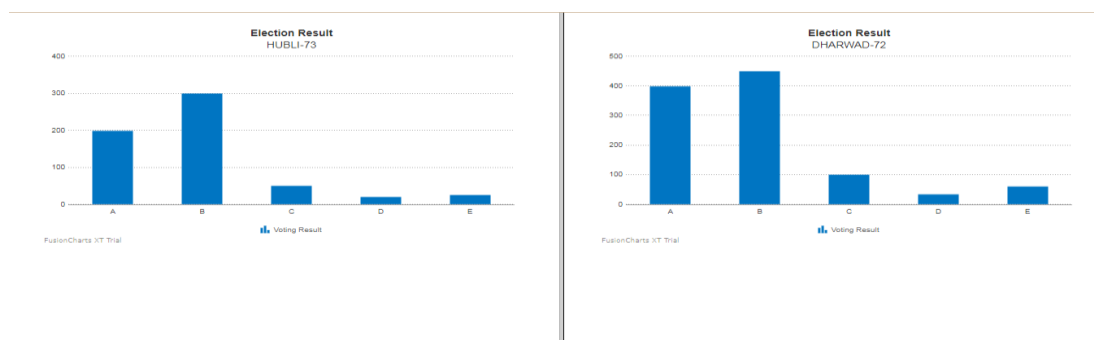


Fig:3 Voting Result

CONCLUSION

An IoT-based electronic voting machine (EVM) has the potential to address many of the issues associated with traditional paper-based voting systems, such as voter fraud and ballot manipulation. The use of Internet of Things (IoT) technology in an Electronic Voting Machine (EVM) is a promising approach towards enhancing the integrity and transparency of the voting process. The inclusion of phone number and biometric verification can further strengthen the security and accuracy of the system. user can vote and vote will be store in the database and election admin can view the voted results.

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