

Aadhar Based Electronic Voting Machine

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ABSTRACT

Voting is the opportunity given to the people it is one of the political process, and the system is created to work best with everyone's participation. Electronic Voting Machines (EVM) are being used by Indian election commission to conduct elections for the past decade. In Aadhar based electronic voting machine voters have to register their fingerprint. Based on the features of fingerprint it gets matched with the person who will cast the vote. Finger print matching will be done using the Aadhar card data base. The efficiency of a fingerprint is based on biometric system and is relatively high in comparison to other biometric based authentication systems like iris recognition, face readers, retina scanning, voice recognitions or hand geometry. With the help of keypad matrix voter can select the candidate to whom they wish to cast their vote and a message is displayed in LCD confirming the vote casted.

Keywords: Finger print, Aadhar based voting and LCD display.

1. INTRODUCTION

Election is a day where people elect their representatives, who are able to fulfil their needs. Election takes place once in five years. Voting is the opportunity given to the public to elect a leader, it is their democratic rights. The vote of each person actually matters a lot and the nation wants to hear people opinion. The EVMs reduce the time in both casting a vote and declaring the results compared to the old paper ballot system.

1.1 Existing Systems

1. Paper Ballot
2. Electronic Voting Machine



Fig.1. Paper Ballot

1. Paper Ballot

A ballot is a device used to cast votes in an election. In that method they may used a piece of paper or a small ball for secret voting. It was originally a small ball- see blackball – that is used to record decisions made by voters. Each one of the voter uses one ballot, and that ballots are not shared. In simplest elections ballot may be a simple scrap of paper on which each voter writes in the name of a candidate. In general body or governmental elections use pre -printed to protect the secrecy of the votes. The person who votes they can casts

his/her ballot in a box at a polling station. The word "ballot" is used for an election process within an organization. Such as a trade union "holding a ballot" of its members.

Drawbacks

- Need more paper to vote
- Need more time to vote
- Need more time for counting
- Need more man power

2. Electronic Voting Machine

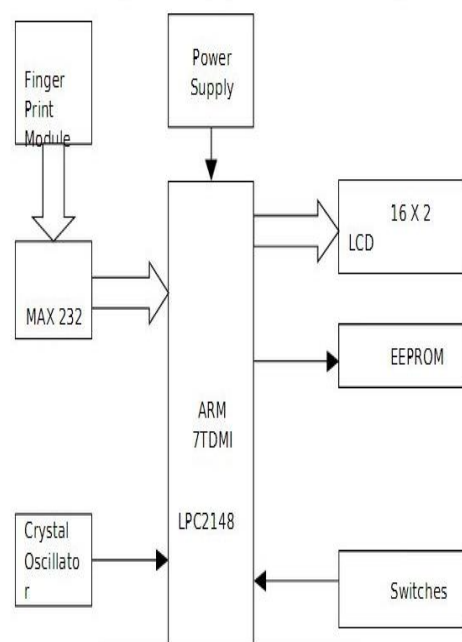


Fig.2. Block diagram of Electronic voting machine

As soon as the last voter has voted, the Polling Officer in-charge of the Control Unit will press the 'Close' Button. Thereafter, the EVM will not accept any votes. Further, after the close of poll, the Balloting Unit is disconnected from the Control Unit and kept separately. Votes can be recorded only through the Balloting Unit.

During the counting of votes, the results are displayed by pressing the 'Result' button. The result button cannot be pressed till the 'Close' button is pressed by the Polling Officer in-charge at the end of the voting process in the polling booth and the button is hidden and sealed; this can be broken only at the counting centre in the presence of designated office.



Fig.3. Electronic voting machine

Drawbacks

- Pregnant women and women with kids face great difficulty for the lack of various facilities; as a result a great percentage of these women do not come to the booths to cast their votes.
- Do not guarantee transparency: A voter could not check what happened to his/her vote i.e., whether it has been properly recorded in the system database or not.
- Inefficient process of identity checking: Here valid voters are just checked by polling officers by their photos on the voter card therefore more or less similar looking persons can give the vote on behalf of another.

1.2 Proposed System

In this system Voters have to register their fingerprint. Based on the features of fingerprint it gets matched with the person who is caste his/her vote. Finger print matching will be done using the Aadhar card data base. The efficiency of a fingerprint based biometric system is relatively high in comparison to other biometric based authentication systems like iris recognition, face readers, retina scanning, voice recognitions or hand geometry. After the comparison of fingerprints occurrence the area which is relevant to the voter will be displayed the candidates with their party names and symbols. With the help of keypad matrix voter can select the candidate depends on his/her decision and a message is displayed in LCD confirming the vote casted.

The important aspect of our project revolves around the concept of monitoring the machines utilized in the textile industry. It is aimed at continuously examining the components and machineries in the industry. It also helps in

doing an automatic and sequential power on and power off of certain components with the results of the monitoring. The set up consists of two LCD displays one at the controller level and the other at the recipient machinery. They are focused on directing the controls on either ways and vice versa. The machineries will be linked via RF. This enables communication link between the controlling device and the connected recipient devices. Using this connectivity the device's parameters will be monitored and necessary changes will be updated.

2. BLOCK DIAGRAM

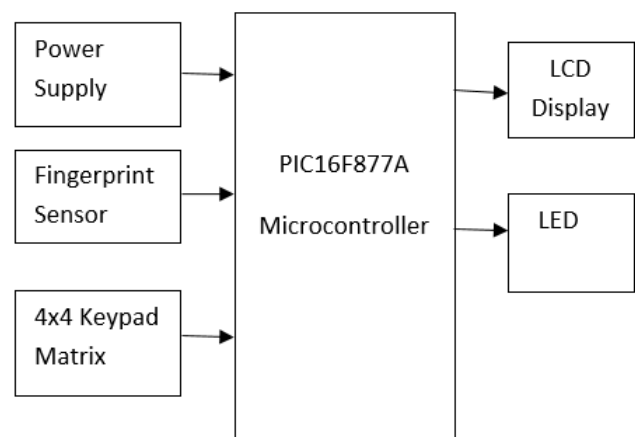


Fig.4. Block diagram of Aadhar based electronic voting machine

Advantages

- Tamper-free & assures authentication: The system will be completely centralized and valid voters will be checked through biometric (unique) characteristics such as finger prints therefore not a single invalid vote could be casted
- Public verifiability: anyone should be able to readily check the validity of the whole voting process
- Accuracy: cast ballot cannot be altered. Therefore, it must not be possible to delete ballots nor to add ballots, once the election has been closed

HARDWARE DESCRIPTION

Power Supply

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.

Fingerprint Sensor (R305)

Finger print scanning technology uses a fingerprint scanner to identify people and provide a high level of security. Finger scanning technology is now being used to provide security for a wide range of applications, including computers. An optic based sensor uses light to capture and read the fingerprint.

Keypad

Keypads are a part of HMI or Human Machine Interface and play really important role in a small embedded system where

human interaction or human input is needed. Matrix keypads are well known for their simple architecture and ease of interfacing with any microcontroller. Keypad is a widely used input device the program to interface keypad with controller is written in C language which is very easy to understand. Matrix keypad is used here.

PIC16F877A microcontroller

PIC microcontroller is the smallest microcontrollers that can be programmed to carry out a huge range of tasks. PIC16F877 has 5 basic input/output ports. They are usually denoted by PORT A (RA), PORT B (RB), PORT C (RC), PORT D (RD), and PORT E (RE). These ports are used for input/output interfacing. All these ports are bi-directional. The direction of the port is controlled by using TRIS(X) registers. Setting a TRIS(X) bit '1' will set the corresponding PORT(X) bit as input. Clearing a TRIS(X) bit '0' will set the corresponding PORT(X) bit as output.

LCD Display (16*2)

Liquid crystal cell displays (LCDs) used to display of numeric and alphanumeric characters in dot matrix and segmental displays. LCDs consume much less power than LED.

3. RESULT

After verification of fingerprint the list of candidates with their party symbol is displayed then the voters are allowed to select the candidate of their wish and cast their vote the acknowledgement of vote is displayed in the LCD.

4. CONCLUSION

The Aadhar based electronic voting machine is based on the current scenario of making Aadhar mandatory in all aspects. It can be used as a real time application instead of using EVM in polling booths because it avoids consecutive verification of voter, provides greater security and avoid false casting of votes. By the end of Election Day, the ratio of polling obtained is calculated automatically when compared to old system of voting.

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