

Aadhar Based Electronic Voting System

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Abstract:- This paper includes the overall technical idea behind using Aadhar card for voting. At the time of voting in the elections, the Barcode-Scanner will be used to decode the Enrollment ID printed on the Aadhar card in which our database is already stored/registered. Then it drives the next finger authentication stage. The authentication can be done using finger vein sensing with the help of fingerprint module, which allows the authenticated voters to vote on electronic ballot. Through this voting system we can see the result whenever we want either immediately or later as per our requirement.

Keywords:- AADHAR database, Barcode Scanner for Id Enrollment, Fingerprint Authentication and Electronic Voting Machine.

I INTRODUCTION

The objective of voting is to allow voters to exercise their right to express their choices regarding specific issues, pieces of legislation, citizen initiatives, constitutional amendments, recalls and/or to choose their government and political representatives. Technology is being used more and more as a tool to assist voters to cast their votes. To allow the exercise of this right, almost all voting systems around the world include the following steps: voter identification and authentication, voting and recording of votes cast, vote counting, publication of election results. Voter identification is required during two phases of the electoral process: first for voter registration in order to establish the right to vote and afterwards, at voting time, to allow a citizen to exercise their right to vote by verifying if the person satisfies all the requirements needed to vote (authentication). Security is a heart of e-voting process.

Therefore the necessity of designing a secure e-voting system is very important. Usually, mechanisms that ensure the security and privacy of an election can be time consuming, expensive for election administrators, and inconvenient for voters. There are different levels of e-voting security. Therefore serious measures must be taken to keep it out of public domain. Also, security must be applied to hide votes from publicity. There is no measurement for acceptable security level, because the level depends on type of the information. An acceptable security level is always a compromise between usability and strength of security method.

II EXISTING METHODOLOGY

An electronic voting system is a voting system in which the election data is recorded, stored and processed primarily as

digital information. E-voting is referred as “electronic voting” and defined as any voting process where an electronic means is used for votes casting and results counting. E-voting is an election system that allows a voter to record their ballots in an electrically secured method. A number of electronic voting systems are used in large applications like optical scanners which read manually marked ballots to entirely electronic touch screen voting systems. Specialized voting systems like DRE (direct recording electronic) voting systems, RFID, national IDs, the Internet, computer networks, and cellular systems are also used in voting process.

In this method, the details of the voter will get from the AADHAR card database. It was a newly developed database which is having all the information about the people. By using this database we took the voter’s information will be stored in the Personal Computer. At the time of elections, for finger print accessing we use finger sensing module.

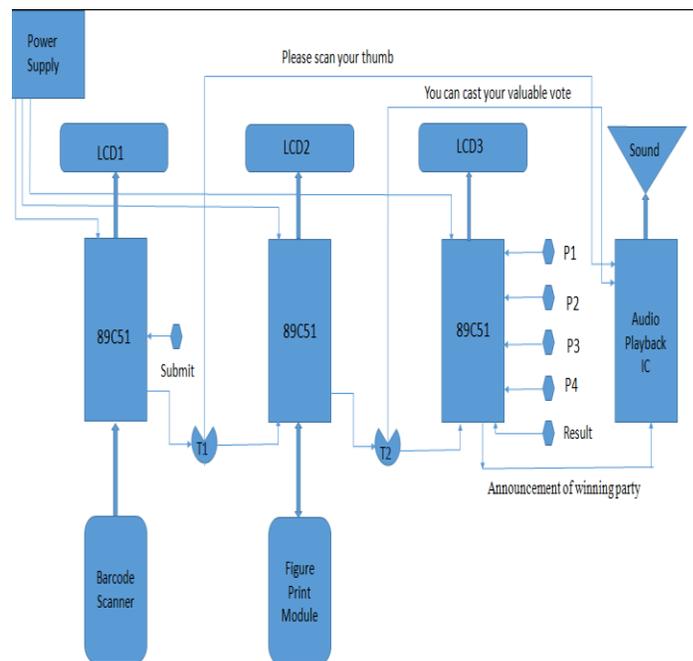


Figure : Proposed Model

Fingerprint recognition or fingerprint authentication refers to the automated method of verifying a match between two human fingerprints. Fingerprints are one of many forms of biometrics used to identify individuals and verify their identity. A

fingerprint looks at the patterns found on a fingertip. There are a variety of approaches to fingerprint verification. Some emulate the traditional police method of matching pattern; others use straight minutiae matching devices and still others are a bit more unique, including things like moiré fringe patterns and ultrasonic. A greater variety of fingerprint devices are available than for any other biometric. Fingerprint verification may be a good choice for in e-voting systems, where you can give users adequate explanation and training, and where the system operates in a controlled environment. It is not surprising that the work-station access application area seems to be based almost exclusively on fingerprints, due to the relatively low cost, small size, and ease of integration of fingerprint authentication devices. Capture the finger vein image and compare or match to database, capture finger vein and database finger vein matched means this person will be valid for polling section and if condition is satisfied automatically, E-voting machine buttons will be activate otherwise deactivate buttons. After the E-voting machine buttons are activated, the voter cast his/her vote. After completion of his/her voting process, a “voting process completed” message will be displayed on the screen. The number of votes is counted by the E-Voting machine and the information will be sent to the local electrical administrator by using Zigbee wireless communication technology.

Securities of the E-voting systems:

The main goal of a secure e-voting is to ensure the privacy of the voters and of the votes. A secure e-voting system are satisfies the following requirements, *Eligibility*: only votes of legitimate voters shall be taken into account; *Unreusability*: each voter is allowed to cast one vote; *Anonymity*: votes are set secret; *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; *Fairness*: partial tabulation is impossible; *Vote and go*: once a voter has casted their vote, no further action prior to the end of the election; *Public verifiability*: anyone should be able to readily check the validity of the whole voting process.

Issues of Present Voting System:

There have been several studies on using computer technologies to improve elections these studies caution against the risks of moving too quickly to adopt electronic voting system, because of the software engineering challenges, insider threats, network vulnerabilities, and the challenges of auditing. *Accuracy*: It is not possible for a vote to be altered eliminated the invalid vote cannot be counted from the finally tally. *Democracy*: It permits only eligible voters to vote and, it ensures that eligible voters vote only once. *Privacy*: Neither authority nor anyone else can link any ballot to the voter. *verifiability*: Independently verification of that all votes have been counted correctly. *Resistance*: No electoral entity (any server participating in the election) or group of entities, running the election can work in a conspiracy to introduce votes or to prevent voters from voting. *Availability*: The system works properly as long as the poll stands and any voter can have access to it from the beginning to the end of the poll. *Resume Ability*:

The system allows any voter to interrupt the voting process to resume it or restart it while the poll stands. The existing elections were done in traditional way, using ballot, ink and tallying the votes later. But the proposed system prevents the election from being accurate. Problems encountered during the usual elections are as follows: • It requires human participation, in tallying the votes that makes the elections time consuming and prone to human error. • The voter finds the event boring resulting to a small number of voters. • Deceitful election mechanism. • Constant spending funds for the elections staff are provided

III CONCLUSION AND FUTURE ENHANCEMENT

The Electronic Voting Machine using Fingerprint and Hex keypad has been designed successfully. Database consisting of the details like name, address, age, gender, fingerprint of the people should be updated every time before election. This system affords additional security by allowing voter to vote only once by imparting unique identification. It is very difficult to design an ideal e- voting system which allows perfect security and privacy with no compromise. Our future work is to interlink all the polling booths within a state with proper internet security so that voter can vote from any booth belonging to the same state.

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