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Implementation of Rejecting Illegal Voting System using Biometric and Aadhar Card

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ABSTRACT

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. It has always been an onerous task for the election commission to conduct free and fair polls in our country. A lot of money has been spent on this to make sure that the elections are rampage free. But, now- a -days it has become very usual for some forces to indulge in rigging which may eventually lead to a result contrary to the actual verdict given by the people. In order to provide inexpensive solutions to the above, this paper will be implemented with biometric system i.e. finger print scanning. This is used to ensure the security to avoid fake, repeated voting etc. It also enhances the accuracy and speed of the process. The system uses thumb impression for voter identification as we know that the thumb impression of every human being has a unique pattern. In this, creation of a database consisting of the thumb impressions of all the eligible voters in a constituency is done as a pre-poll procedure. During elections, the thumb impression of a voter is entered as input to the system [1]. This is then compared with the available records in the database. If the particular pattern matches with anyone in the available record, access to cast a vote is granted. But in case the pattern doesn't match with the records of the database or in case of repetition, access to cast a vote is denied or the vote gets rejected. The result is instantaneous and counting is done. The overall cost for conducting elections gets reduced and so does the maintenance cost of the systems.We all know that illegal voting is a major drawback in the elections. The finger print should be same in both biometric and aadhar card for the person while polling the vote. When the vote will be illegal the machine will be used to avoid illegal voting. Then the system will give the information that whether the vote will be register or not register to the corresponding person mobile phone.

Index Terms: Aadhar, Fingerprint, Voting, Biometric, GSM, Thumb, LABVIEW.

INTRODUCTION

This paper examines policy regarding the electronic approaches and developments towards electronic data storage and transmission [2]. Voting is a method by which the electorates appoint their representatives. In current voting system the voter should show his voter ID card whenever an individual goes to the booth to poll one's vote. This process could be a time consuming method as the person needs to check the voter ID card with the list he has, confirm it as an authorized card and then enable the person to poll his vote. Thus, to avoid this type of problems, designed a finger print based mostly voting Security could be a heart of voting method. So the requirement of designing a secure voting system is very vital. Usually, mechanisms that ensure the security and privacy of an election are often time consuming, expensive for election administrators, and inconvenient for voters. There are completely different levels of e-voting security. So serious measures should be taken to keep it out of public domain. Also, security should be applied to hide votes from publicity. The secured voting process can be done by linking the voting machines with the Aadhar, an

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Indian citizen identification data base with a unique identification number for every citizen [3]. The Aadhar based EVM can result in secured voting process. As a result of no two or more voter's data can match as this system uses biometrics. Biometrics is the science and technology of measuring and analyzing biological data. In information technology, biometrics refers to technologies that measure and analyze human body characteristics, such as DNA, fingerprints, eye retinas and irises, voice patterns, facial patterns and hand measurements, for authentication purposes. During this paper used thumb impression for the purpose of voter identification or authentication. As the thumb impression of each individual is exclusive, it helps in maximising the accuracy. Aadhar database is created containing the thumb impressions of all the voters in the constituency. Illegal votes and repetition of votes is checked for in this system. Hence if this system is utilized the elections would be truthful and free from rigging.

LITERATURE SURVEY

Issues of Existing Voting System

Electronic Voting Machines ("EVM"), Idea mooted by the Chief Election Commissioner in 1977. The EVMs were devised and designed by Election Commission of India in collaboration with Bharat Electronics Limited (BEL), Bangalore and Electronics Corporation of India Limited (ECIL), Hyderabad. An EVM consists of two units,

Control Unit

Balloting Unit

The two units are joined by a five-meter cable. The Control Unit is with the Presiding Officer or a Polling Officer and the Balloting Unit is placed inside the voting compartment.

There are many types of problems with EVM which is currently in use they are

Accuracy

It is not possible for a vote to be altered e laminated 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.

Security Problems

One can change the program installed in the EVM and tamper the results after the polling. By replacing a small part of the machine with a look-alike component that can be silently instructed to steal a percentage of the votes in favor of a chosen candidate.These instructions can be sent wirelessly from a mobile phone.

Illegal Voting (Rigging)

The very commonly known problem Rigging which is faced in every electoral procedure. One candidate casts the votes of all the members or few amounts of members in the electoral list illegally. This results in the loss of votes for the other candidates participating and also increases the number votes to the candidate who performs this action. This can be done externally at the time of voting.

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 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.

Securities of the Aadhar Based Voting system

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,

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Eligibility

Only votes of legitimate voters shall be taken into account.

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

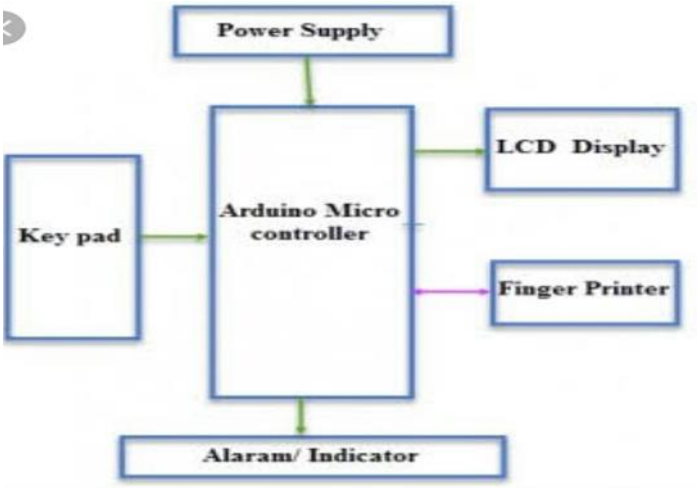
Partial tabulation is impossible. Vote and go: once a voter has casted their vote, no further action prior to the end of the election.

Public verifiability

Anyone should be able to readily check the validity of the whole voting process.

EXISTING SYSTEM

In India bar code scanning is performed with the help of India's national ID program called Aadhaar is the largest biometricdatabase of the world. It is a biometrics-based digital identity, instantly verifiable online at the point of service (PoS), at anytime, anywhere, in a paperless way. Currently it has 500 million people with 6 petabyte of data. It will reach 1.25 billion people in few years,¬ 15 PB of data and over 200 trillion biometric matches per day.It is designed to enable government agencies to deliver retail public service securely based on biometric data along with demographic data of a person. The data is transmitted in encrypted form over¬ internet for authentication, aiming to free it from limitations of physical presence of a person at a given place. Thus is can be used for casting vote from anywhere, availing social security benefits from anywhere e.g. PDS ration form any shop etc. Elections definesthe democracy of people. We speak about who is allowed to vote, how campaigns are conducted, and how they are financed, but no one gives priority to the understanding of the actual voting process. Electronic Voting Machines ("EVM").



EVM consists of two units,

CONTROL UNIT

Balloting Unit

The two units are joined by a fivemeter cable. The Control Unit is with the Presiding Officer or a Polling Officer and the Balloting Unit is placed inside the voting compartment.

The category “electronic voting” is potentially broad, referring to several distinct possible stages of electronic usage during the course of an election. Security Problems – Many one can change the program installed in the EVM and tamper or fraud the results easily after the polling. By replacing a small part of the machine we change

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votepercentage of the particular candidate. These instructions can be sent wirelessly from a mobile phone.

Illegal Voting (Rigging)

The very commonly known problem, Rigging which is faced in every electoral procedure. One candidate, can put the votes for the people without his or her knowledge by illegally. This results in the loss of votes for the other candidates participating and also increases the number votes to the candidate who performs this action. This can be done externally at the time of voting.Traditional voting process can be divided into different phases:

Identification

In this phase, voter authenticates himself or herself by showing his or her voting card, this step is public and verified by the presiding officer. At the end of authentication process, presiding officer give a ballot paper to voter to cast his or her vote.

Vote

The vote takes place in a separate booth where voter cannot be seen by any person. The voter cast their vote by pressing the button in machine and it will be stored.

Vote counting

At the end of voting time, the presidingofficers collect the ballot box and submit it to the counting centre. After that with the help of members of the election committee nominated by election commission of India, the ballot boxes are opened and votes are counted and the results are then announced.

Verification

Various types of verification process are used, most procedure are public and verified by the representative of candidates of competing parties. Recount is also possible if there is any fraud or error.

Problems related to current system

- Capture the polling booth.
- Time taking authentication process.
- Fraud voting.
- Voting done by less age voters.

Aadhaar

Aadhaar[11] is a 12 digit individual identification number issued by the Unique Identification Authority of India(UIDAI) on behalf of the Government of India. Each individual needs to enroll only once which is free of cost. Each Aadhaar number will be unique to an individual and will remain valid for life. Aadhaar number will helps to provide access to services like banking, mobile phone connections and other Government and Non-Government services. Biometric data like fingerprint, iris and palm geometry face is stored in database of Aadhaar. This number will serve as a proof of identity and address, anywhere in India. Any individual, irrespective of age and gender, who is a resident in India and satisfies the verification process laid down by the UIDAI, can enroll for Aadhaar. [9].

Proposed biometrics based system of voting

Our proposed system makes use of biometric traits of each voter for authentication to overcome above problems. Biometrics makes easier the job to authenticate the correct voter by providing an automated electronic interface to voters. The only need is that if voter fingerprint and face is matched[13] with saved data in ECI database shared form Aadhaar database; then the voter is allowed to cast his/her vote by EVM otherwise not.

Features of proposed voting¬ system

- A voting system which provides better authentication process.
- Provide physical security at the time of vote.
- Make use of biometric traits for voting.
- Make use of U-id number provided by UIDAI

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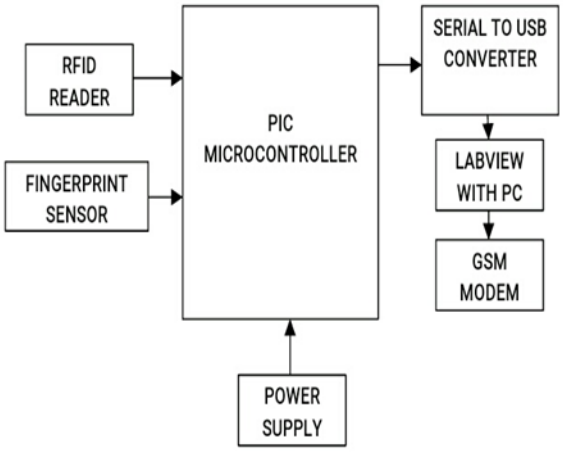
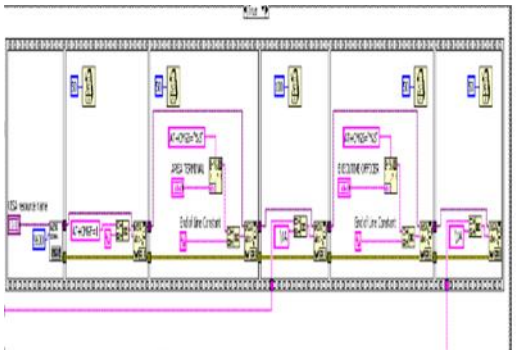


Initially the voting process will be contain for the paper and seal.But this process main disadvantage is consuming,misuse,missing vote or vote box.And same development to using voting process will be the voting machine with memory card.In this above voting process the voting machine to vote will be pressing the button the vote will be poll.The existing system is used button process to poll his vote.This process will be compared to initial process to less disadvantages.And now a days to voting process will be contains the finger print to voting but is process is not implemented.

Labview



Labview program are called virtual instruments or vis because the appearance and operation imitate physical such as oscilloscope and multimeters.Labview is used to communicate with hardware such as data acquisition,vision and motion control devices as well as GPIB,RS232,RS485 instruments.

DESIGN AND IMPLEMENTATION

Fingerprint verification could also be an honest choice for in evoting systems, where you can provide users adequate explanation and training, and where the system operates in a controlled environment. This method is inexpensive, small size, and easy integration of fingerprint authentication devices Capture the finger vein image and compare or match to database, capture finger vein and database finger vein matched

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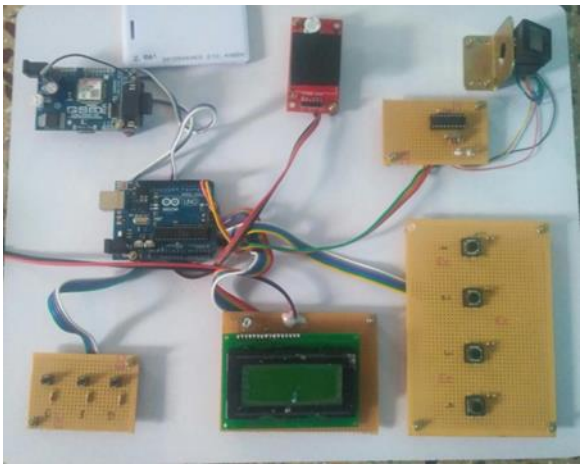
suggests that this person will be valid for polling section and if condition is satisfied automatically.

Voting machine buttons will be activate otherwise deactivate buttons when the Evoting machine buttons square measure activated, the elector forged his/her vote [7]. When completion of his/her ballot method, a "voting method completed" message are displayed on the screen. In earlier days the election process is in such a way that there will a box and a paper with all the political parties list. Whereas voting the voter has to put a stamp over the party symbol of his/her desired candidate in a specific consistency [8]. This is an extended time consuming method and extremely a lot of prone to errors. Additionally the probabilities for rigging were a lot of during this traditional methodology.

To beat of these ballot papers, stamps, boxes etc., going for Aadhar based EVM. So that, to beat time consumption, Rigging, insecurities etc.,Here in Aadhar primarily based EVM, using the information primarily based server for Aadhar details, Raspberry-pi for the online technology and arduino is employed for interfacing Raspberry-The elector is allowed into election booth with Aadharcard ID. Here the voter first gives his Aadhar card for QR reading/Keypad operator.

The elector is allowed into the ballot box room when the QR reading/UID authentication is finished with success by the operator. When Authentication the digital display in EVM displays as "welcome voter" [4].

The elector has to scan his thumb mistreatment the biometric and providing the thumb data that's scanned is matched with the pre-loaded database information the elector can permit to forge the vote. Otherwise the Authentication will fail and voter will not be able to cast the vote. Once the voter is authenticated the switches of parties will enable and conjointly the data of elector are shown on show of EVM[5]. When casting the vote the switches are disabled till next voter is authenticated and EVM shows a message as "thank you for voting".



Final Results on LCD

At identical time the printer connected to EVM can print the casted vote information at the side of a message "Please drop the token into ballot box". The token is additionally useful to verify the vote casted by the voter. And at last the voter will check the token and drop it into the box [6]. The overall data of casted votes is distributed to the server mistreatment net technology in order that the results are often declared among all the consistencies.

CONCLUSION

In this voting system have many advantages over the traditional way of voting. Some of these advantages are lesser cost, faster tabulation of result, improved accessibility, greater accuracy, and lower risk of human and mechanical errors, more secure. This project will be used to avoid the illegal voting. This review discussed introduction about EVM and its variation, Issues of EVM, Taxonomy, and Biometric based EVM. Our efforts to understand electronic voting systems leave us

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optimistic, but concerned. This paper suggest that the EVM system has to be further studied and innovated to reach all level of community, so that the voter confidence will increase and election officials will make more involvement in purchasing the innovated EVM's for conduct smooth, secure, tamper- resistant Elections. This concludes that the Aadhar based EVM will useful To avoid Rigging To avoid time consumption To keep the voter's information more secured.

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