

BIOMETRIC VOTING SYSTEM BASED ON AADHAR CARD

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Abstract—“Vote” means to choose a candidate from a pool list. Citizens choose a leader from a pool of candidate from a list by casting their votes, this process is called voting. In this paper, we propose a system in which, all the citizen in India who have a unique Aadhar card. The voting is possible only whose age is above 18 years. In Biometric voting system the authentication of an individual is done using biometric and eligibility of the voter is verified using the Aadhar card. Aadhar card has a 12-digit unique identity number issued to all Indian citizens. The data present in the Aadhar card is reference data for voting procedure and verification of the user. First the voters should be give fingerprint of ten arms; iris and face are registered and stored in Aadhar database. Once the fingerprints are stored in Aadhar card database the authorized person can retrieved the data at any time. During election, when the voter keeps his/her fingerprint on fingerprint sensor, it check the that it already stored Aadhar database if the data is matching then he/she can vote else block the person to vote. An individual's details of the citizen can be deleted from the database when it is not required. The biometric provide less man power, save the time of the voter avoids dummy voting.

Keywords—Aadhar card; Authentication; fingerprint; biometric

I. INTRODUCTION

India is a democratic country with the population of 1.3366 Billion people. The government in India is democratic which stands for “for the people, by the people and of the people”. Every citizen of India has the fundamental right to vote and wish to elect the leader. In India two types of voting procedure are used in the election procedure. The first is the Ballot Paper System and the second is the Electronic Voting System (EVM). Now a days India is used Electronic Voting System (EVM). The voting criteria is citizen who have age 18 years and above. The issues in the current voting system are dummy voting and also lot of man power is required. In order to decrease the issues occurring in e-voting we introduced biometric voting system. Biometric refers to the unique identification of each individual such as the iris, fingerprint, face and palm.

Now-a-days, Aadhar card is mandatory for every citizen of India. Aadhar card play an important role in every fields such as ticket bookings, gas bookings, banking etc. The Aadhar card contains a unique 12 digit number for each citizen.

Aadhar id contains the details of the each citizen such as name, address, date of birth, sex, fingerprint of all ten fingers and iris.

Aadhar card can also be used for secure voting of the citizens. During the time of election, the user place finger on the fingerprint sensor which contains the database of the Aadhar card. When the fingerprint matches with the database it allows the user to vote else it will be block the person to vote. This system reduces dummy voting and decreases manual power in voting system.

II. EXISTING SYSTEM

In the existing voting system, the complete election procedure is done by manually; voting can be only possible the individual can have the ID proof. So that the chance of dummy voting is increasing. The security of voting is done by the manually so huge amount of man power is required. It is quite difficult to done the election in a single day. Allocation of polling station is done by election commission in a week before the declaration of the election. Generally polling booth is in school and community halls. Voter's ID card is distributed before one week so some people do not participated in the voting.



Problem of Existing voting System

The problems of the existing voting system:-

1) Expensive and Time consuming:-

The process of collecting data and entering into data into the Aadhar database is time consuming and it is very expensive to conduct, for example, time and money is spent to printing data, advertising, preparing polling stations for voting is too big.

2) It contains lots of paper work:

The voting process involves lot of paper work and also store. it is very difficult because the population increase it will become bulky.

3) Errors are occurring during data entry:

Errors are the part of all human beings; During the data entry the error are big.

4) Registration forms will be lost:

In Some cases, registration forms will be lost after being filled the details of voter so it is difficult to follow up.

5) A limited time provided for voting:

This is main problem in voting not all the people have free time in the short election period.

6) Chances of Dummy Voting:

Sometimes an unauthorized person give vote, i.e., some of the politician will tries to win the election they will do the dummy voting. Dummy voting means that one person takes the voter id of other person and do vote. it is illegal.

7) Removing Inedible Ink and then vote:

Nowadays, there is some chemical available to remove the inedible ink. Some people are removing the inedible ink and vote again.

III. PROPOSED SYSTEM

In the proposed system the voter details is get from the Aadhar database. Aadhar database contain the information about each citizen such iris, fingerprint and face. By using the Aadhar database officer should be took the voters' information and store into personal computer. In the time of election, the user places their fingerprint on the fingerprint sensor which contains the information of the Aadhar card. When the fingerprint of the user matches with the database it allows the user to vote else block the person. This system reduces dummy voting and decreases manual power.

The process is as follows:-

Biometric Voting System

Step 1: Go to nearest polling station.

Step 2: Then go to the voting compartment.

Step 3: Give the fingerprint to a fingerprint scanner.

Step 4: System checks your fingerprint with the Aadhar database and also checks you are eligible for voting or not.

Step 5: Then if you are eligible for voting then shows the message "You can vote" else it shows "You can't vote because you are not eligible"

Step 6: Then we can choose the candidate from the pool of candidates that is called vote.

Step 7: Then user vote is successfully registered on the database.

Advantages of Proposed System

1. Dummy Voting will be removed because of biometric authentication such as Fingerprint, iris and palm.
2. Aadhar's card database only permits only eligible voters to vote .eligible means that age 18 and above.
3. The system will be also maintaining the privacy of the vote. Only the ballot officer and authorized person can see the vote.
4. The major benefit in this system is it will increase the voting percentage.
5. The system will also save the time and money of travelling.
6. The system will be produced Quick results.
7. System ensures eligible voter cannot vote more than one.
8. The system will be only required less man power.
9. In this system no need to mark the Inedible Ink.

Securities of the Biometric voting system

The major thing in the biometric voting system is to ensure the privacy of the voters and of the votes. Requirements for biometric voting system are:-

1. Eligibility: only the legal voters can take vote.
2. Anonymity: votes are set to be secret only authorized person can see the vote.
3. Accuracy: The cast ballot cannot be altered by third party. It is not possible to delete ballots, and add ballots, once the election has been over.
4. Fairness: partial tabulation is not possible.

5. Vote and go: once a voter has casted their vote, then no further is possible.
6. Public verifiability: Anybody should able to easily check the validity of the whole voting process.

Disadvantage the biometric voting system

1. People must have Aadhar card if it not possible to vote.
2. Biometric voting website is only accessible at voting booth.
3. Fingerprint Scanner must be present in the voting booth.
4. The voting booth must have Electricity and the internet for the Biometric voting website.

IV. FRAMEWORK

The proposed system has mainly three modes:

I. ADMIN MODE

In this proposed system the officials of Election Commission play a role of admin. The admin cannot use the system, because first they need to register themselves in the system. If anybody is already registered, they can unlock their Dashboard.

a) Configure a Biometric voting system: -

The admin can configure a Biometric voting system for a specific locality for the election procedure. The BVS will seek the area of the election is take place. Then it will seek the name, party, and party symbol of the candidate in a particular locality. Whenever the information is given to the system, it will be automatically search for the Aadhar database with respect to the area and locality. Then the person's details are store in the "Vote" database.

The candidate details are store in the "Representative" database. The BVS will select the attributes such as name; candidate ID, party emblem and No_of_votes_gained are stored in "VoteResult" database. This database is also used to update the number of votes gained by particular candidate during the voting process. Pressing one button the system will automatically configure for specific locality.

No manual effort is needed for searching and list of the voters in a specific locality.

b) View the result of the particular area: -

The admin can view the result of the election of a specific locality. The system will fetch the result from the "VoteResult" database and it will show to the admin. The admin can see the result of all the candidates of a particular locality.

c) Identify the number of people did not do the vote:-

The admin also have to see the name of the name of people in the locality and the people who not cast votes. So, the person who have not cast their vote the lock status should set as 0. The system searches for the person who does not vote. The admin can see the name and Aadhar card details of person who does not vote

d) Delete vote results and refresh the system:-

The BVS can also be deleting the previous vote related data. If the admin press the "Delete" button in then the system will automatically delete the previous election data in the "Vote" and "VoteResult" databases. This system is needed to refresh the database and ready for the next election.

e) Insert people into Aadhar database data:-

Every year the huge amount of Aadhar card. So we should include their details in the Aadhar database. The BVS provides another facility to the officers of election commission can insert the "Aadhar" database.

II. TESTER MODE

This is for officer present in voting booth. They will conduct the voting procedure. They can also check that the system working properly or not before the election procedure starts. First the officer needs to open an account in the BVS then only they can operate it.

The officer in booth can do:

a) Give Test Votes before election procedure start: -

The officer can test the system that is working properly or not before election starts. The officer also gives some test votes and check it the system properly or not.

b) View the Result of particular locality: -

The officer in the booth they can see the result of the particular locality. Only the officer can see the data.

- c) See the number of people did not cast the vote: -
The officer present in the booth they can also see the name and Aadhar card number of the person who does not cast the vote.
- d) Test votes is deleting: -
The officer can also have a power to delete the test vote otherwise it will be considered as actual vote.
- e) Unlock the person who not eligible for voting: -

One of the main features of the system is that we can lock the person by the officer. While we comparing the fingerprint of voter with the Aadhar database if it is not matching then lock the person.

III. USER MODE

This is for the general users of the BVS. In the first step the user enter the Aadhar card number to BVS. Then it will check the Aadhar card number is in their in the "vote" database. If it their then seeks for the fingerprint of the user, then compare with Aadhar database. If the fingerprint does not match and seeks again for fingerprint. But the BVS finds that the given fingerprint is entirely different from the Aadhar database then it will be automatically block the person to vote. If the voter can get the vote giving page then he/she can choose any candidate from a pool of candidates. In the bases of the each vote "voteResult" database is get updated.

Use of biometric voting system

The number of countries are used BVS for their voting procedure. The BVS will also help for removing the dummy voting and also less man power is needed. California is a democratic country used the biometric as their voting procedure. They found that the authentication of voting only provide by the biometrics. Biometric creates inexpensive and trustworthy to the voter. In the case of Africa the people do not trust the election process because of the dummy voting and political influence. The change the behavior of the people the government will be introducing BVS to next election. So the results of election were good and people will be satisfied with voting procedure.

In India Aadhar card is mandatory for every citizens so that in our Country it is easy to implement. The Aadhar card contains a unique 12 digit number for each individual. It contains the details such as name, address, date of birth, sex, fingerprint of the ten fingers and the image of the iris.

Challenges of Biometric voting system

- 1) Privacy of the personal information is not secure.
- 2) Influence of the political parity in biometric voting system.

IV. CONCLUSION

I conclude the paper with suggesting the BVS to our country. Because most of the countries are using biometric voting system as their voting procedure. In the system it will be done the work very fast so no need of much man power. The cost of system will be affordable to government. The BVS will much accurate and fast compare to old voting system. The BVS can also avoid the dummy voting and it required less man power.

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