I-Voting: A System for Every Citizen of India

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Abstract: In this paper we are showing a financially savvy and effortlessly implementable i-voting (web voting) framework particularly for India. In this i-voting framework the constituent can make their choice utilizing web based administration. In manual poll paper based voting framework, a few cheats like tallying mistakes, unlawful voting may happens. Keeping in mind the end goal to counteract voter cheats we utilize two level voter confirmations for security reason. Aadhar ID is utilized as a first level of validation. In the event that substantial aadhar id is entered and after certain essentialness checking process, the voter will sent to second level confirmation prepare. In second level verification, confront acknowledgment process will completed. After the fruitful confirmation and check, the voters ought to make their choice by selecting their enrolled district and applicant of intrigue. We likewise display two sided voter and UIDAI server based design for voting process security and to keep up voter's protection arrangement.

Keywords: UIDAI, Aadhar-ID, Confront acknowledgment, Voters Policy, Electoral Commission.

1. INTRODUCTION

In today's world India is the largest democracy. Right to vote and exercise of regular electoral process after every regular interval of time is the heart of every democracy. Every citizen with right to vote policy can shape the destiny of their nation by electing proper representative who will run their government, take the decision which will ultimately support to the growth, development and can maintain unity among all the citizens.

Since the time of independence our electoral process runs on ballot paper occupied voting. Voters should cast their vote by just pledging the ballot paper with electoral stamp in front of the candidate's name of their choice in the sealed voting boxes. Now a day's electronic voting machine has been introduced in India; where the voters cast their vote by simply pressing a button next to the candidate name of their interest on voting machine. These sealed voting boxes or electronic voting machine should distribute across the electoral region of the country. When the election process ends, all the sealed boxes or electronic voting machine are collected at central electoral commission office and vote counting process started in company of certified representative of the entire candidate until the final count results declared. Transparency is very important factor during the voting process as well as counting process. Many times a fraud voting such as voters cast their vote more than a predefined limit which cause irregularities and that may require to cancel the whole electoral process and repeat of election of that region.

In manual voting process voters has to visit a polling booth to cast their vote; but usually it happens that many voters due to time taking electoral process and long voters queue neglects to visit polling booth. This ultimately leads to minimize the percentage of overall voting. Also, electoral commission of India spends 100 crores of rupees on electoral security purpose and survey process to add newly eligible voters and to issue them election ID cards. Election commission also needs to maintain a record of all this activity.

In some states election, even intentionally manipulations of the votes take place to favor specific candidate. Though all such kind of misfortune can be set aside with an appropriately planed election process; but in country like India where the electoral voters are too large, errors can takes place. Many times even international regulatory bodies are required to control the election process.

This all the more readily requires a completely modernized internet voting process. Besides to beat ordinarily happened voting unremarkable things, voting include should be possible constant so that before voting day's over, the outcomes ought to consequently aggregated [1, 2]. In UK, the critical activities to inspect the practicality of electronic voting including electronic voter enrollment as of late occurred [8]. The unified conditions of America have as of now began web voting program FVAP [9] i.e. Federal Voting Assistance Program for their up and coming presidential decision 2016. The Federal Voting Assistance Program attempts to guarantee government organization individuals, their qualified relatives and abroad national natives know about their voting rights and can decidedly cast their votes from wherever on the planet. Because of overall data innovation advancements in PC and accessible media transmission framework, web based voting or i-Voting is no more extended an American or European wonder. The Irish constituent framework brings the greatest change since the establishing of the state more than 75 years prior because of execution of internet voting. Web based voting may soon end up being a worldwide bad dream [3 – 5].

Here we presented Aadhar ID based i-voting system. The key factor for i-voting system to be successful is to reveal a voting protocol that can put a stop to opportunities for fraud or for atonement of the voter's right policy along with the reduction in currency spent on election. Aadhar ID based i-voting is an internet based online voting system especially designed for India. It works same as that of other online services like online reservation system. In this peoples who are Indian citizens and having age 18 years and above can cast their vote online without going to polling booth. In i-voting framework a voter can utilize his/her voting rights with no trouble. Be that as it may, the vital thing to the voter is that he/she should have substantial Aadhar ID card. 12 digits Aadhar ID is a kind of evidence that serves as a proof of character and address, anyplace in India. Any Indian inhabitants, regardless of age and sex and fulfills the check procedure set around the UIDAI [7](Unique Identification Authority of India), can enroll for Aadhar ID.

2. ELECTORAL PROCESS AUTHENTICATION AND RIGHT TO VOTE PRIVACY

In India, where election results are declared by counting the specially designed ballot paper deposited into the voting boxes at polling booth. If the voting process takes place through electronic voting machine then the result can be directly compiled by the machine count. There are human inclinations that constituent votes may get controlled from multiple points of view; a few voters would tend to endeavor to vote more than ones for a given hopeful; so that the number would high positively towards some applicant. Automatic a decision procedure, by utilizing best in class as a part of PC and web innovations, can fundamentally extreme many variables that would impede a helpful change of a election procedure.

The election security and voting process authentication plays a vital role during the whole electoral process. The task of election security starts even before the day of actual vote casting. It doesn't wind up with security of where the votes are put away. A serious examination into security related concerns and conceivable dangers that could presumably influence the decision occasion came about into the accompanying security contemplations of i-voting frameworks include:

Authentication

Validation implies checking reality of voters personality assert or their entitlement to vote. It implies reply to inquiries, for example, "Who are you? What's more, do you have the privilege to vote?"

There are two parts of confirmation in i-voting frameworks:

- Verification of voters identity characters assert.
- Verification of voter's right to vote.

Privacy

This is worried with guaranteeing data about voter's security and confidentiality. Decision commission must offer clear and compelling direction to states on issues of useful capacity, equipment, programming, media transmission, security, quality confirmation, and setup of voting frameworks. Where the voter is remote from the voting framework, there is a conceivable danger of voting data being uncovered to somebody with the assistance of programmers. This can be ceased by information encryption over the interchanges organize.

The other significant risk to the privacy of votes is the framework which is utilized for gathering votes. There is such a variety of malevolent programming that can gather votes, which may prompts to invade the voting framework. Dangers of vindictive programming can be diminished by physical controls, web security and cautious review of the framework operation. Also the consequences of voting ought not to be available until the decision is finished.

Integrity

The voter's trustworthiness can be secured utilizing an advanced signature or some other confirmation code like standardized identification with the goal that it can be demonstrated that a voter's verification and at least one vote are connected.

Web voting frameworks have some particular security necessities that include:

(i) Only honest to goodness voters are permitted to vote.

(ii) Only one arrangement of decisions is permitted per voter, per challenge.

(iii) The vote may not be seen until the best possible time.

(iv) The voting framework must be responsible and auditable.

(v) Information used to confirm the voter or his/her entitlement to vote ought to be secured against abuse.

(vi) The voter's real identity may should be mysterious

(vii) The alternatives accessible for throwing to the voter must be legitimate.

(viii) Proof that every single certified vote have been precisely numbered.

Segment 3 of this paper gives a portrayal of the proposed i-Voting framework. Conclusions are given in segment 4.

3. PROPOSED I-VOTING FRAMEWORK

In our approach we use 12 digit unique Aadhar ID number and facial expression as a biometric measure, as UIDAI has already stored captured photographs in their database for authentication and verification purpose. Figure 1 illustrates proposed I-voting system data flow.

In this i-voting framework, voters can make their choice over web through World Wide Web innovation from wherever at any time in between the voting era. So as to counteract voter fakes we utilize two level voter verifications for security reason. Aadhar ID is utilized as a first level of validation where a voter needs to enter 12 digit Aadhar ID number. The Aadhar ID entered by the voter is confirmed with the substance of the UIDAI Aadhar server database. In the event that substantial id is entered and the voter is not rehashing the vote, the voter will sent to second level confirmation handle. In second level confirmation, confront acknowledgment process is done. Here the outward appearance of the voter will be caught by a web camera and sent to the Aadhar database at server side for coordinating and confirmation. After the effective validation and confirmation, the voters ought to make a choice by selecting their enlisted district and competitor of intrigue.

Here, we also propose server and voter, web-enabled i-Voting software architecture as solution to the transparency complications. The architecture is represented in Figures 2a and 2b. Other than the principle usefulness of a voting framework, as portrayed in the past section, the i-Voting framework must satisfy a few fundamental non-practical necessities. Of farthest significance are the prerequisites for confirmation, exactness, unwavering quality, continuity and security. On the UIDAI server side, an Aadhar database is kept up alongside appointive database of every enrolled voter and applicants; this server keeps running progressively and gives backend specification to the whole voting process.

On the voter side, the actual vote casting process takes place. In quest for vote throwing, the framework prints a copy of the vote cast by the voter. The voters confirm the precision of their vote and hold the duplicate for their records. On the opposite side, the framework produces another duplicate of the make choice with another exceptional key identifier; the name and personality of the voter is clouded. This duplicate is spared in a protected box and can be utilized later to approve the exactness of the votes as put away in the last DB goal. This
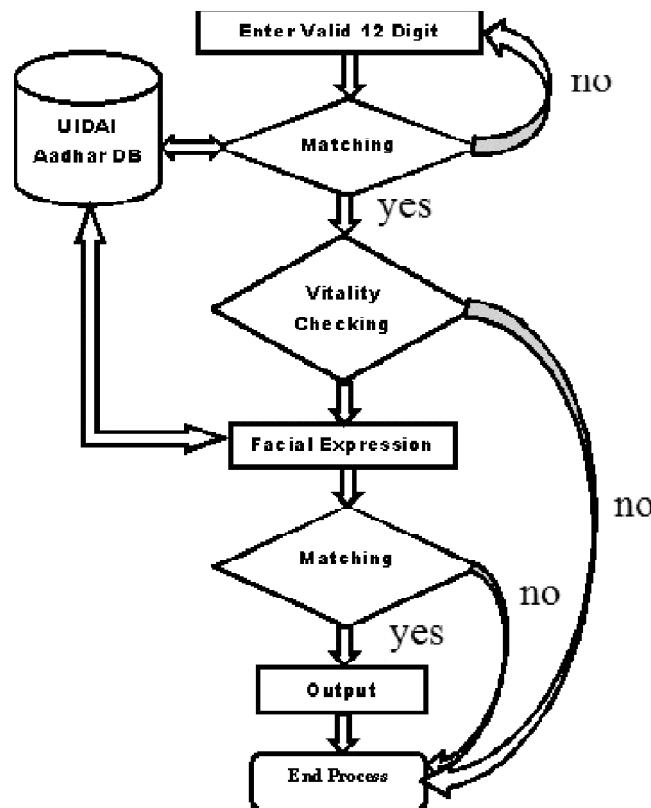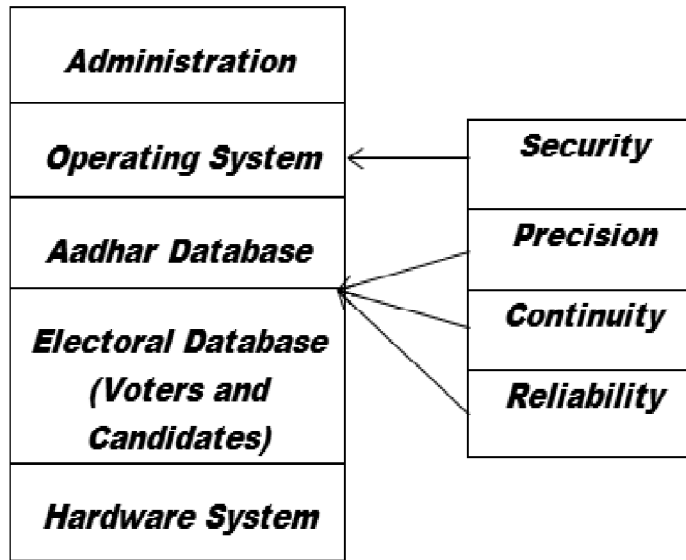

Figure 1: Proposed I-voting System data flow

Figure 2(a): UDAI Server Side

side of the duplicate can be printed out in type of PC produced scanner tag which can be effortlessly looked and read intuitively and unpredictably chose set of these duplicates should be tried. This two sided prepare guarantees straightforwardness by giving essentialness of the precision vote throwing process into the framework and afterward how it is, at long last put away in the constituent database.
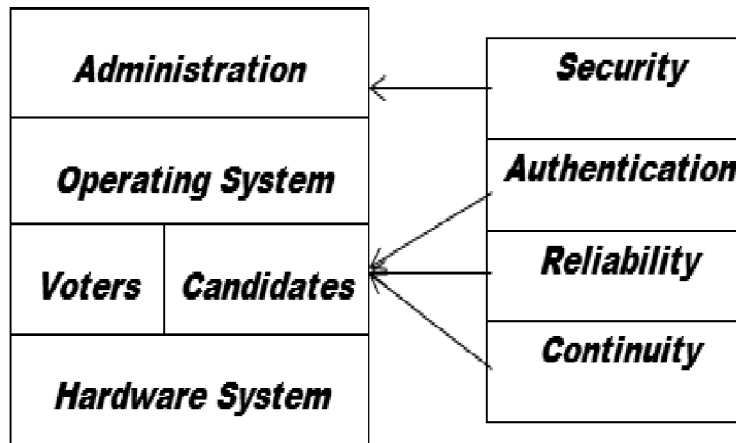

Figure 2(b): Voter Side

4.   CONCLUSION

In each Lok Sabha Election Indian government pay out more than 200 crores of rupees on issues, for example, security, constituent ballots, appointive tallies, voting machine transportation and so on. The normal voting rate is under 65%. Likewise the rate of literates coming to vote is less as a result of time taking voting process. Additionally voting extortion can be effectively happens in the present tally paper or electronic voting machine framework. Be that as it may, with our framework the cash spent on decision can be lessened to under 10 crores of rupees as the cash spent on security can be definitely diminished. Likewise there is zero chance of voter cheats and voters who have a web association at home with a web camera can vote without taking the strain to come to

voting corners regardless of the area. This will at last prompts to improve voting rate. We trust that this work can be served as a premise to assemble new calculations and conventions which will in the end lead us to new period of voting framework.

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