

Secured Online Voting System with Aadhaar Linking

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Abstract - This paper manages the web based voting framework that will impact the voting structure to smart, more secure and easy to vote. This paper shows a system which can be is connected with Aadhaar card [1]. In the entire nation Aadhaar card Number is Unique for each individual and it contains biometric data of every subject. So it will be useful in disposing of fake Voting. The proposed show has a more noteworthy security as in voter high security secret word is affirmed before the vote is acknowledged in the fundamental database of Election Commission of India [3]. Subsequent to voting client need to cross check their vote then they can affirm with reference of remarkable id, which was created by ECI. In this model a man can likewise vote from outside of his/her allocated Constituency or from his/her favored area. This framework like-wise encourages the live spilling of vote tallies subsequently sparing a colossal time by giving on time result.

Keywords — Election Commission of India, Aadhaar ID, Reference ID, Online Voting System, Unique Identification authority of India.

I. INTRODUCTION

Online Voting System is a way that causes open to choose their agents and express their inclinations for how they will be represented. Normally, the conviction of the decision procedure is most extreme critical. Race process has solid media scope, especially if something turns out badly. This framework will build the level of security and furthermore the trust of voters. The proposed model has a greater security in the sense that voter high security password is confirmed before the vote is accepted in the main database of Election Commission of India.

Internet voting framework definition given in states that Online voting frameworks offer focal points contrasted with other voting forms. It is difficult to make the voting framework reliable simply because it has high security prerequisites: classification and uprightness. Secrecy: classification implies all voters get guaranteed about the security of votes and avert offering of votes. Uprightness: trustworthiness implies the confirmation of decision comes about and the votes are tallied effectively

AIMS

The point of venture is to give security to online voting system with Aadhaar connected information.

The election must be:

1. Adequately hearty to withstand an assortment of false practices.
2. Adaptability.
3. Speed and precision Authentication.

OBJECTIVES

Each state sets its particular guidelines for voting frameworks in statute as well as managerial run the show. These can be founded on the intentional gauges set by the EAC, or not. The most widely recognized issues that voting framework gauges are probably going to address are: security, usefulness, protection, ease of use, and Openness. Standards may also address specific functionality that voting machine should have.

II. LITERATURE SURVEY

A. Paper Ballots:

Paper Ballots is a Traditional Voting framework. In which there is a paper on which this paper need to tick on the name of a Candidate to vote. In Paper Ballots System a voter can just vote once. It requires a tremendous measure of Investment to check the Vote before proclaiming the outcomes. In few

spots where the administration is degenerate they can without much of a stretch embed fake paper votes in the tallies and it ends up plainly difficult to track a fair vote

B. Electronic Voting Machine:

This is the present voting System in our nation. In this vote is thrown utilizing electronic expressive dance. This voting system is very simple and straightforward. Additionally this system is sufficiently secure and compact. A voter needs to hold up in lines to vote because of which a bunches of time is squandered. Along these lines, rather than remaining in line they favor not to vote in favor of a period. Additionally voters have "no certainty" in EVM that their votes are thrown to same hopeful whom they have voted.

diverse days in various electorates, to empower the security powers and those observing the decision to keep lawfulness and guarantee that voting amid the race are reasonable. The days for the surveys are settled by the decision commission and they are all around broadcasted before all races. Surveying stations are generally set up out in the open organizations, for example, schools and group corridors. Each surveying station is open for no less than 8 hours upon the arrival of decision.

On reaching the polling station, entry will be regulated by queues. There are separate queues for men and women voters and the physically handicapped persons. The persons who enforce the queues allow three to four voters into the polling station at a time. Physically handicapped voters and women voters with babies in arm are given precedence over the other.

III. EXISTING SYSTEM

Voting technique in India entirely holds fast to the main of Secret Ballot. Surveying in India is ordinarily held on various

I. COMPERATIVE ANALYSIS

Sr no.	Paper Title	Author's Name	Technique Used	Merits	Demerits
1	Online Voting System linked With Aadhaar Card	Tabish Ansari, Brijesh Chaurasia , Niraj Kumar, Nilesh Yadav , Sonali Suryawanshi	Election-voting System,Secure EVoting	Time Complexity is more.	Less Understandability for users.
2	New System Of E-Voting Using Fingerprint	Firas Hazzaa, Seifedine Kadry	Detection And Recognition of fingerprint	This Paper Concisely Explain the design and working of the application which deliver remote voting ability towards the entire election process.	Less User applicability
3	Secure online voting system proposed by biometrics and Stegnography.	Nikita Malwade, Patil Chetan , chavan Suruchi	Cryptography And Stegnography for Fingerprint Recogniition	This paper gives better understanding of Online voting system through Fingerprint Recognition	Less User Understandability.
4	Online Election Voting Using One Time Password	Vaibhav More , Mahesh Patil	Remote voting, OTP Template Matching.	This paper concisely explains the design and working of the application, which delivers remote voting ability.	Less User Applicability.
5	Online Voting System Using Aadhar Card And Biometric	Nishigandha , Nikhil, Suman,Vinayak	Election-Voting System, Secure E-voting by using Aadhar Card.	This paper has successfully introduced a new design of E-voting application using Aadhar linking and fingerprint recognition.	Less User understandability.

IV. PROBLEM STATEMENT

The problem with existing voting system is:

A. Fake Voting :

One person can make multiple votes security relies on the link mark.

B. Paper Work :

System involves lot of paper work and storage of this paper is difficult as it increases with increase in population.

C. Loss Of Registration Forms :

Sometimes, registration forms get lost in the wake of being filled in with voters' subtle elements, by and large these are hard to development

Expensive and Time Consuming:

The way toward gathering Data and Entering the information into database takes excessively time and costly to direct, for instance time and cash spent in printing information, in getting ready enlistment stations together with human asset likewise the promoting the days set for enrollment and in addition time spent on entering information to the database..

V. PROPOSED SYSTEM

In this system voter can cast their vote through internet. This system is connected with Aadhaar card the proposed has more prominent security as in voter high security secret word is affirmed before the vote is acknowledged in the primary database of Election Commission of India. After voting user want to cross their vote then they can confirm with reference of unique id, which was generated by ECI in this model a person can also vote from outside of his/her allotted Constituency or from his/her location. This system also facilitates the live streaming of vote counts thus saving a huge time by providing on time result. There is no need for user to stand in queue for voting this makes a voter more comfortable to vote. Voter can vote without fear and without hesitations this is secure, cheap and less time consuming.

A. System Algorithm

Step 1: start.
 Step 2: Registration Using Aadhaar number.
 If(string, Is
 nullOrEmpty(pointer.Value))pointer.value
 ="5.5";// Default value rollnum.value=mobile.value;
 string
 str = ConfigurationManager.ConnectionStrings
 ["votingdatabase"].ToString();
 Con = new SqlConnection(str);
 Step 3 : Authentication using Fingerprint.
 Step 4 :System Give user ID and Password.

Step 5 : Login using User ID and Password.
 Step 6 : If matches GO TO step 7 or GO TO step 2
 Step 7 : Generate OTP and send to registered mobile
 Number.var OTP = Generate OTP().Padleft
 (6,'0'); // sendSMS(mob,otp);
 //return save(otp);
 Step 8 : If OTP matches then select Candidate to vote
 Else exit.if(dr.HasRows && dr.Read())
 {
 Id = dr.GetInt32(0).ToString();
 }
 Step 9 : Vote for candidate successful.
 Step 10 : conformation message to voter.
 Step 11 : Stop.

B. Algorithm: Minutiae Based Finger Print Matching

Let T and Q be the feature vectors, representing minutiae points, form the template and query fingerprint, respectively. Each element of these feature vectors is a minutiae point, which may be described by different attributes such as location, orientation, type, quality of the neighborhood region, etc. The most common representation of a minutiae is the triplet x, y, θ where x, y is the minutiae location and θ is the minutiae angle[8]. Let the number of minutiae in T and Q is m and n, respectively.

$$T = m_1, m_2, \dots, m_m, m_i = x_i, y_i, \theta_i, i = 1, \dots, m. \quad (1)$$

$$Q = m'_1, m'_2, \dots, m'_n, m'_j = x'_j, y'_j, \theta'_j, j = 1, \dots, n.$$

A minutiae m_i in T and m'_j in Q are considered matching, if following conditions are satisfied:

$$sd(m'_j, m_i) = (x'_j - x_i)^2 + (y'_j - y_i)^2 \leq r_0 \quad (2)$$

$$dd(m'_j, m_i) = \min(|\theta'_j - \theta_i|, 360 - |\theta'_j - \theta_i|) \leq \theta_0$$

Here, r_0 and θ_0 are the parameters of the tolerance window which is required to compensate for errors in feature extraction and distortions caused due to skin plasticity. The number of "matching" minutiae points can be maximized, if a proper alignment (registration parameters) between query and template fingerprints can be found. Correctly aligning two fingerprints requires finding a complex geometrical transformation function (map ()), that maps the two minutiae set (Q and T) the desirable characteristics of map () functions are: it should be tolerant distortion; it should recover rotation, translation and scale parameters correctly.

VI. MATHEMATICAL MODEL

Step1: It is polynomial type problem for smart e-voting system.
 Step 2: $S = \{U, P, O, D, P\}$
 Where, S = system.
 U = Set of user.
 -ex.user1, user2,.....user k

- I = set of inputs
 - ex. Login details, Registration etc.
 - }
 - O = set of Outputs.
 - ex. Login access, Thumb Scanner
 - Etc.
- S
- D = Set of devices.
 - ex Thumb scanner etc.
- P = Set of processing.
- ex. authentication, OTP sending
 - Etc. `

VII. SYSTEM ARCHITECTURE

This system provides modern voting system where the voting data is recorded stored & processed with security. The following system architecture has two database connections, Based upon the functionality provided to different users by the system. It contains two database government Aadhar card database and system database. We will recover every voter's subtle elements from government Aadhar card database and store it in system database; administrator controls every one of the occasions like enrolment and declaration of result.

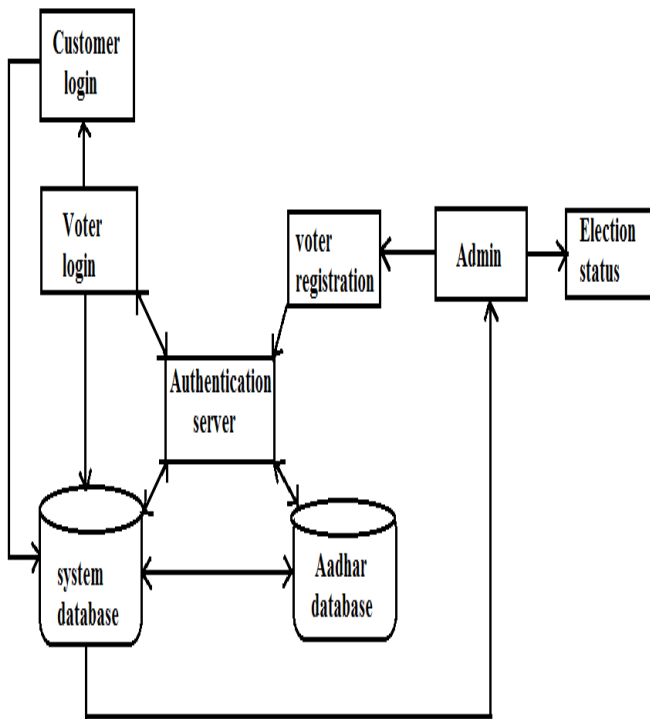


Fig 1 : system Architecture

a. Authentication Server:

In order to authenticate a person we require them to have a valid UID number. The number will be checked in the Aadhar

database records first. On the off chance that it isn't discovered then it will look through the focal archive. It includes one-to-numerous match. If the person's number is not found in the system database then of course s/he will be devoid of taking part in the voting process.

This record is extricated from the Aadhar database and sent to verifying servers for additionally preparing.

b. Aadhaar Database:

These databases will be utilized for creating measurements and consequences of the electoral procedure. Aadhar database is responsible to authenticate valid user. When voter register, the fingerprint will be taken which will be cross checked with Aadhar database. If its match, registration is successful and voter Id will be provided to voter.

c. Admin:

In this proposed system the officials of Election Commission of India play the role of Admin of the system. Those persons who have not registered themselves with the system, they need to register them as an Admin by typing their own Aadhar Card no. in the specified space. The system will then search the Aadhar card details from the "Aadhar" Database.

Next to verify the authenticity of the Admin, the system will seek the fingerprint image from the user. After getting the fingerprint image, the system will compare the fingerprint with the stored one in the "Aadhar" database and if it is matched then it will allow the user to create his/her own username and password for his/her Admin account.

d. Voter Registration :

Voter registration is done by admin by taking UDAI number of voter. For verification Admin will take the person's fingerprint which will be scanned at the client-side and matched one-to-one at the servers with the data extracted from the Aadhar database.

e. Voter Login:

Voter will login to it account as time of voting starts. Voter will have their specific unique id which was provided by ECI, through which the voter can be able to vote securely. And OTP will be generated by system Database.

f. Election Status

The administrator opens the voting website server by giving notification to the voter and candidate [6]. Those who have Not voted will get frequently notification from the Election Commission.

VIII. DESIGN DETAILS

1. Home Page:

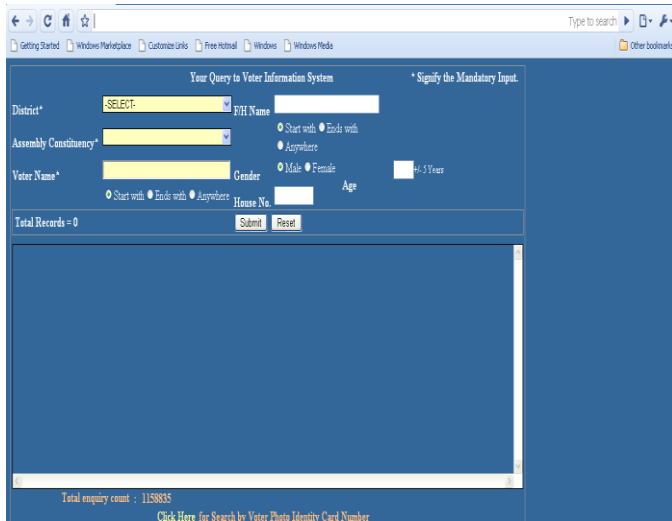


Figure 2 Home Page

2. Voter Registration Page

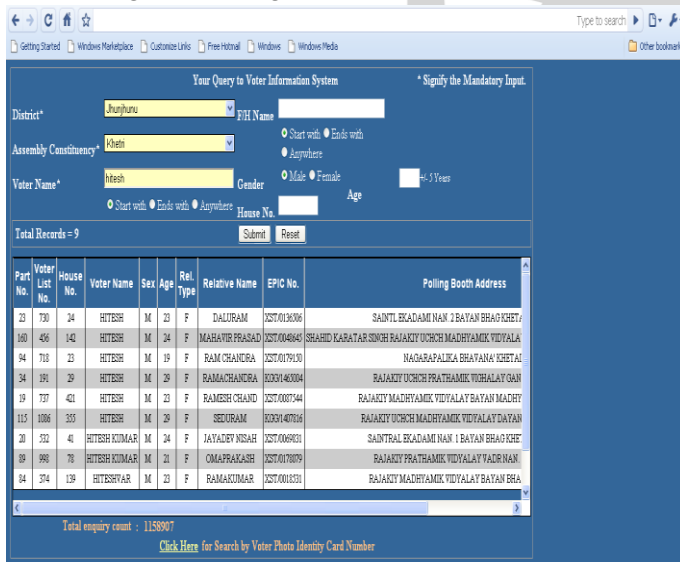


Figure 3 Voter Registration Page

IX. CONCLUSION

We have tried to implement paper Tabish Ansari, Brijesh Chaurasia, Niraj Kumar, Nilesh Yadav, Sonali Suryawanshi “ONLINE VOTING SYSTEM LINKED WITH AADHAAR CARD”, IJARCCCE international journal of advanced research in computer and communication Engineering ISO 3297:2007 Certified Vol. 6, issue 9, September 2017 With combining another paper “An online voting system using Biometric fingerprint and aadhaar card”, This proposed system has the capacity to lessen or undesirable human errors. Notwithstanding its unwavering quality, online voting can deal with numerous modalities, and give better adaptability to vast elections online voting is likewise an excellent system that does not require voter area vicinity. It prompts the simpler confirmation of voters and applicants. In the proposed structure, this system has attempted to assemble a safe online voting framework that is free from unapproved get to while

casting votes by the voters. The utilization of modern technologies like finger print reorganization using template matching mechanism and OTP generation ensure that the application uses latest advances in technology and thus give best performance The server parts of the proposed framework have such distribution of expert that server does not empower to control the votes. It is normal that the proposed online voting framework will naturally expand the straightforwardness.

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