

Implementation of E-Voting via Smart Phone App

Jeba Taslim Hidayat Baig
Student of M.Tech (CSE Dept),
TGPCET,
Nagpur, India
Jeba.baig5@gmail.com

Prof. Rajesh Babu
Faculty of CSE Dept
TGPCET,
Nagpur, India

Prof. J. Adhikari
Faculty of CSE Dept
TGPCET,
Nagpur, India

Abstract:- Voting system is vital requirement of every country due to which representatives are elected by citizens of respective country. Voting system via smart phone app is very effective and user friendly, as physical presence is not required in native place. The objective of this system is to maximize the voting count especially from those people who are eligible but are unable to cast their vote due to transfers to different cities, higher education, NRI's. In this smart phone application, User has to first download the app after that user has to register himself and user details are stored in online server and Aadhar id is mandatory for user to enter at the time of registration. User get notification about voting date .user has to login for casting vote to his favorable candidate. User can be authenticated by credential such as userid, password and Aadhar card scanning .Authenticated user allow viewing the candidate's details. User has to first enter OTP which is sent to his registered mobile no then he cast his vote to favourable candidate. This app is applicable for both android users as well as users who are not familiar with android as government agent help them to cast vote. Result declared in the same day as there is no manual calculation. There is no need of election card in this app.

Keywords: Smart phone, e-voting, QR code Scanning, OTP.

I. Introduction

Voting System is used to elect Representative of every Nation. E Voting system is very effective and efficient to use as compared to all voting system because it do not necessitate physical presence of user at their native place along with any voting card. This E voting system is good enough to maximize the voting count especially by youth of nation. Result declaration in the same day at the end of voting. Several Systems are available for voting but currently India used Electronic voting system to elect representative of nation, but this require the physical presence of user to cast vote along with Election card which leads to minimize the voting count by literate people as they have to go for higher studies among them some are NRI's and marriage issue . Before using Electronic voting system India used Ballot paper voting system which was also not so efficient as it require huge amount of ballot papers and result declared after manual calculation of vote that take number of days and this also require physical presence. Some countries used Internet voting system that also has some issues like user either has system or he has to go to net hub for casting vote to his favorable candidate and also requires election card. The new technology also involves minuses that must be considered. One is the difficulty of guaranteeing ballot secrecy with absolute certainty.

This new system Smart phone app solves all these concerns. This application need only Aadhar card for authentication

and voting purpose and Election card or any other cards are not required. User has to download The Secured Smart Phone App .Registered himself along with Aadhar Id. User has to login first at the time of voting . After authentication user Aadhar card get Scan for validating user's .Authenticated users get Candidate list then user can cast vote to his favourable candidate but before casting vote he has to enter OTP which will send to his mobile number .About Us menu allow users how to use app. User can give comment and rating to tis app via opinion menu. This App is very effective to use and user details are stored in online server.

II. Literature Survey

Voting can be done by several voting system namely manual voting system, Ballot paper voting system , electronic voting system and internet voting system all are having some issues.

In conventional voting system, user has to do the right or voting mark on or near the symbol of the his favorable candidates in the ballot paper, user has to fold it vertically and horizontally respectively and after that put ballot paper into the ballot box. This conventional system required printing of lots of ballot papers and thereafter it may cause the issue of invalid voting. Cost is more due to requirement of large no of ballot papers for voting. Result calculated manually and result declaration process takes 30-40 hours after completion of voting by every citizen. This

conventional system is not secure and not usable for those people who are away from hometown as well as those who missed their election card. Due to loss of voting card voting count get minimize. Whereas some people have multiple elections card which leads to cause false result [1].

An electronic voting system is also another type of voting system which makes the use of electronic ballot that would allow voters to cast secret vote ballot to election officials by using the internet [2]. With the increasing demand of internet over the years, for making the Election process more convenient so as to rise the voting count Inventers start to make the use of electronic voting system. From now on, engineers have repeatedly created new technology to improve the feasibility of electronic voting system [3].

Implementation of Authenticated and Secure Online Voting System having two login one for the poll administrator and other the Chief Election Officer where the poll administrator control start and stop of the election and assisting the process of configuration before to the election and during the process of the result declaration under the control of the Chief Election Officer. Addressing the issue of election by common man is the main influence of this implemented system by means of authenticity which leads to reduce the cost as it is a one-time installation expense and complete eradication of malpractices from this sensitive process of democracy. Reduction in work arises due to automated mechanism like Election counting process, user's authentication, Franchise exercising process by an individual multiple voter prevention process, Timer set for the election process and the demonstration of the Election Commission [4].

The countries like USA, Canada for electing Government representative they make the use of Internet Voting System where the citizen's information stored in the database. First step is registration so user has to registered himself through that user get user id and password and at the time of login user has to entered the user id and password which they got while registration process. System authenticates the user after entering user id and password and when authentication process complete user is able to cast his vote to his favorable candidate. [5].

Casted vote as well as voter's information can be stored in the database that can be used at the time of result calculation and also used to check whether information entered by the voters are valid or fake if valid then can proceed forward otherwise discarded. Voter asked for the type of vote which they are going to cast for. Because of this level of Election can be differentiated and face recognition technology can be used for authentication purpose but this has one issue that

user has to go Net café to cast vote or one should have internet facility at their own home.[6].

In Mexican voting system, they try to find out any human error by means of the whole voting system. Mexican voting system make use of public networks with the DRE (Direct Recording Electronic). Temporary installation of electronic ballots at various places that are connected to the central system .The votes are transferred from the temporary ballots to the central system over a public network, that is server client system. The votes may be transferred as batch of votes from local ballots to central in complete Election Day or may be only at the end. The central counting system should have the registration of all the local temporary ballots. They are using the cellular network data and the security used is public key system. The main features of their system are:-

- Privacy
- Receipt freeness
- Correctness
- Robustness
- Democracy
- Fairness

Though it is handling empty and void ballots but this system has the one common problem that it does not support remote voting. The voter not present at its native place or not at electoral booth will not be able to cast their vote from remote location and not able to maximize the voting count [7].

III. Problem Definition

1. In paper voting system, Electronic Voting system both having remote area issue as mobilized citizen unable to cast their vote and this issued solved by internet voting system but need to go Net café for vote casting even having data in smart phone or one should have internet facility at their convenience.

2. Voting system like paper and electronic voting system required lots of paper and Ballots respectively and also voting card. Number of user having multiple voter card due to which wrong result declared instead of fare one.

3. As concern to India's population voting count not meeting that point. Vote casting can be done mainly through illiterate citizen rather than young one due to remote location problem which leads to minimize the voting count.

IV. Proposed System

Proposed system is implemented for overcoming issue come from existing system that is mobility problem, manual work,

need of voting card, security issue and also minimum voting count. In today's world most of the people having smart phone. This system requires smart phone and voting process can be done by two ways along with four phases namely:

1. Android User

2. Camp Administrator

a) User Registration:

- 1) Aadhar card ID
- 2) Captcha
- 3) Mobile No or Email Id

b) User Authentication:

- 1) User id & Password
- 2) QR code Scanning
- 3) OTP

c) Voting Process:

- 1) Already voted or not
- 2) Age above 18

d) Result Calculation

Android user way is available for those citizens who are having android phone with them. They directly cast their vote to favorable representative through own mobile phones. Android users have to just download the Secure E Voting System via Smart Phone App from play store. From the About Us menu learn how to use this application. And those citizens who do not have smart phone they have to follow second way means **Camp Administrator**. Government agents are there for guiding to those citizens who are not having smart phone. Government agent has to login every time whenever users have to vote and that voter also has to login. This login keeps the record that how many users cast their vote by the help of particular government agent. After casting vote voter get the successful message.

System architecture having four phases, in the **Registration phase** user has to enter his details along with Aadhar Id. User details stored in the online server. Through Aadhar Id whether user is already registered or not checked. In details user has to entered name, gender, Aadhar card no, in address user has to select city, state and enter ward name. User also has to upload photo and he has to enter re-Captcha for human identification. Age of the user can be check as he enters his Date of birth. User has to also enter his User id

and Password for further login process. After entering all fields then user can submit the registration form when all details are valid.

In the **Authentication process**, user is authenticated by entering user id and password. When the user get authenticated he is allow to proceed. After credential verification user has to put Aadhar card in front of phone camera for Aadhar card scanning. Through Aadhar card scanning authorize user identified and that particular user able to cast his vote to favorable candidate.

Third phase is **Voting phase** when user get authenticated and scanning process completed Candidates lists viewed to the voter along with brief description. User can view the Candidate details by clicking on view button. When user click on view button OTP generated and send to the registered mobile number of the user. For casting vote user has to enter first enter OTP and registered address. Then there is verification of the entered OTP and registered address. When verification process completed successfully user finally cast his vote.

Final phase is **Result declaration**, whenever user cast vote count get increased in database of the particular candidate and at the end of the Election Day result declared by showing number of vote secured by every candidate who stand for Election. When user changes his native place permanently he has to edit personal information.

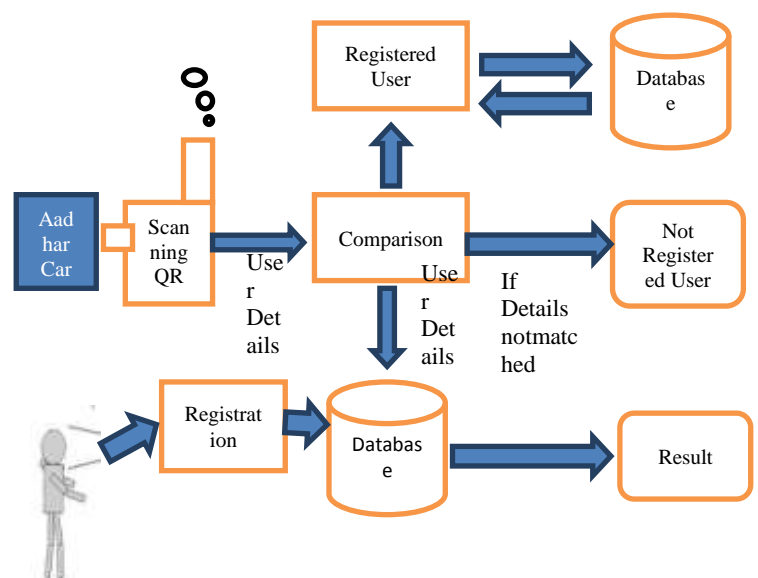


Figure: System Architecture

Secured Evoting system via smart phone app run on android platform User has to download this App via playstore and accept terms and condition. User gets the notification of the Voting before 2 days.

Following steps are there for using E Voting system:

1. User has to first register himself.
2. At the time of voting user has to login by userid and password.
3. Two menus are appear a)Android User b)Camp Administrator
4. For Android User - Click on Android User Menu
5. QR code scanning
6. OTP sends to user mobile No. or Email id
7. User has to enter OTP to cast vote.
8. List of Candidates who are stand for Election appeared on screen along withtheir election symbol and brief description.
9. User can cast vote to his favourable Candidate.
10. User get message of successful voting.
11. For Non Android user - Click on Camp Administrator menu
12. Login of Government Agent
13. Scanning QR code and Iris Detection of user and follow 6 to 10 steps.
14. Voting Result display at the end of the day.

User cannot edit their details. This system also allows android phone user as well as normal user to vote by using following module. This system is cost bearable, effective to use, need no hard effort as the result declared at the end of day due to automatic calculation of votes of each candidates.

V. Objective

The proposed system having following objectives

- Increases the voting count by youth of nation.
- No manual calculation, automatic result calculation.
- Native location problem get solved
- User can edit personal details except Aadhar card no.
- No requirement of any other card except Aadhar card
- User can give feedback about voting system and application
- No multiple Election card every user cast his vote only once

VI. Conclusion

Secured E voting system is easy to use and ruin the main drawback of the existing system that is mobility issue. As the mobility issue get solve it helps to increase the voting

count especially by the young generation of the nation. Voting by literate citizen get maximize and as the system automatically calculate the result in the same day after end of election process so no need to wait for result declaration. No need to register many times and no need of any other card except Aadhar card. No requirement of Manpower.

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