Multifaceted Autonomous Online Voting System

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Abstract: The voting system is the one which elects an important personnel from our society or institute. Selecting a right person becomes very crucial because they will be the one who will be responsible for development of that institute or country. In the last few years, a large number of voting system are been put forward such as old Paper Ballot Voting System, E-Voting System also known as Electronic Voting System, Mobile Voting System, SMS and Miss Calls Voting System. All the above voting systems had issues so to introduce a new voting system, that in a way reduces the issues being faced and also ensures maximum participation from the society, we came across an idea of developing a mobile application that would be linked with the user’s Aadhaar card, enabling them to cast their vote. Moreover, we thought why not develop an application that could be used for voting purpose no matter what intention lies behind it. For example, voting ballot creation for electing college general secretary, selecting most favorite TV stars from the nominees, etc. The primary goal of this paper is to show how system makes the work of voting easier and make the voting procedure more secure- as compared to previous voting system.

Keywords—AADHAAR Card number, Online voting system, Autonomous, Barcode scan.

1. INTRODUCTION

The voting system focuses on selecting the perfect person for the growth of any country or an institute[1]. The system must be developed in such a way that it fulfills the criteria of security and secrecy of the votes that have been cast. So the main problem is to protect voting system from the threats such as booth hijacking and impersonated voting[7] that may change the result of the Voting system [2, 3].

A system can be said to be successful only when we get a good response from the population i.e. in voting system, the system is found to be successful if large portion of the population cast their vote. In other words, to make the procedure much easier and involve large portion of the population to cast vote, the voting system should be designed in such way that the voters need not stand in a queue to cast vote. In the past few years, many system came into existence making the voting process secure and cost effective.

As we had already discussed the idea about the system in our previous paper[4,5]. We are including the working and way it interacts with users in this paper. For implementation purpose we are making use of cross platform programming so that the application can be deployed in android, iOS or windows[5]. For demonstration purpose system is tested on the android phone.

2. SYSTEM OVERVIEW

In the proposed system, user are classified based on the privileges assigned to them:
A.Super Admin
B.Local Admin
C.User
D.Candidates for election

A.Super Admin selection

Super admin is the one who is the system administrator. Super will have the overall control over the entire system. As the proposed system requires access to Government’s aadhaar card database but government restricts the access of such confidential data so in order to test the system a dummy database using user’s aadhaar card is developed[8]. He/she will have information about all users, local admins, created ballot and candidates selected for the election.Only the super admin has the permission to access the entire database and make any changes to the database. If any changes about the users information need to be made than the user has to contact the super admin and gets his/her permission in case of main government election whereas if any changes in the candidate information has to be made than it can be made directly done by the local admin without any special permission of the super admin.
B. User Registration

User registration plays a vital role in any voting system. Multifaceted autonomous online voting system has made the work of user registration much easier and rapid. The user just need a mobile phone to scan the barcode which is present on the bottom left corner of the aadhaar card as shown in Figure 1.

Once the barcode have been scanned by mobile camera, a xml file of the user data is been created. This xml file comprises user’s personal details such as name, dob, address. This xml file is used to store the user details in the database. The database used for storing the user data is Microsoft Sequel Server. API is used to connected this database i.e back end to the front end of the system.

Registration of the user involves the following sequence of steps:
1. Insert The 12 digit aadhaar card number
2. Insert working smartphone number
3. Scan the barcode present on the AADHAAR card using the camera of your phone

After following all the above procedures the users data is stored in the Microsoft sequel Server database.

C. User login

The second step after user registration is user login. The process of user login is similar to that of User registration, the difference is that in case of user registration the data used to get stored in database whereas in case of user login as soon as the barcode is scanned the system tries to match the data of the scanned barcode with the data stored in database. If the data matches than it is proved that the user is an legitimate user and is allowed to proceed to the next step i.e Creation of the ballot or give votes.

D. Create Ballot/Give Vote

After the user has been successfully logged in the user has two option
1. Create Ballot
2. Cast vote

Option 1: Create Ballot

In create ballot option the user has the freedom to create election on the basis of their intention. This phase will allow the user to create election for any organization or institute of their choice. The user can also use this option to organize election for various college post such as College General Secretary, Head of Departments etc.

The user can create a new ballot by clicking the ‘Create new ballot Click Here’ as shown in Figure 4. Once the user selects this option a new screen appears where the user has to enter all information of the candidates who are standing in the election. Candidate information consists of candidate photo, candidate name, candidate organization, candidate class, candidate Email-id and candidate Phone number as shown in Figure 6. After filling all the
above information the user has to select the done button. Once the done button is pressed the user gets an message on his phone that confirms that the users ballot has been successfully created and the user now gets two code one is the local admin code and the other is the ballot code.

The local admin has to broadcast this ballot code to other user. The local admin can broadcast this code using any means of his/her choice. Using this Ballot code other users can cast their votes. The local admin is the one who decides the start day and end day of the ballot i.e the ballot duration and gets information about the vote count by using his local admin[6]. So the local admin than can decide who is the winner of election and broadcast the winner name to all user.

Option 2: Cast Vote

In this phase the user can cast his/her vote using the ballot code provided to them by the local admin. The user just has to enter the unique ballot code in the ballot code field. After the ballot code has been entered the ballot code is verified for its uniqueness,
if the ballot code is unique then the user is allowed to give his/her vote

Once the user gives his/her vote, the system will provide a confirmation message to the user. After all the procedures are completed, the system will display a final screen which consists of thank you message.

3. CONCLUSION

This paper shows the proposed model for Multifaceted autonomous online voting system. The mentioned system is basically a social system which could make the life of the voters much easier as compared to various other voting systems.

In the proposed system, the user just has to enter his/her aadhaar card number, mobile number, and scan the barcode present on the Aadhaar card. It is much more secure as compared to other systems as it does the verification through barcode scanning and through confirmation messages. As this system can be used for both government elections as well as for local elections, it makes the system more usable compared to other systems which are only for government elections. Making the system more secure by adding fingerprint scanning as one of the steps of user verification could be the future work.

The overview of the flow of the entire proposed system is as follows

4. REFERENCES


