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Online Voting System Using Face Recognition and Fingerprint Recognition

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ABSTRACT: Online voting system in which the election data is stored and processed. To achieve higher level of security, one levels of authentication techniques are used. The authentication technique used is a Face Detection and Recognition system. In this method of authentication, the voters face image captured during the registration is compared with the image captured by the webcam at the time of casting vote. After the first level of authentication is done a voter can casting the vote. These techniques provide a more secure platform thus overcoming vulnerabilities of the traditional voting system. The Online Voting System is a web-based application. The system has a centralized database to keep records of all the Voters and Candidates and Final Results. This Online Voting System is based on SMS sending to voters, to confirmation of Vote. This web-based system is time saving, workload reduced information available at time and it provide security for the data.

KEYWORDS: Image Processing, Voting System, Face Recognition, OTP

I. INTRODUCTION

In Democratic countries like India, the voting system plays a major role during elections. Traditionally, the election commission in India uses electronic voting machines which need more manpower, time-consuming and also, they are less trustworthy. As we know, in every country Election is a basic process of democracy which allows people to show their opinions by selecting their candidate. India is spending huge money to improve our whole voting system to provide a better government to citizens. In India, voting system should be honest, translucent and fully secure for the better democracy. The current system is used to less transparency because there could be chances of cheating at the voting time[1]. Many people couldn't vote because the voter has to reach the poll booths to vote or some people like those who are living far away from their original birthplace where they are allowed to vote. So, to get rid of their drawbacks, a new System is introduced i.e. Online Voting System, which provides accuracy, security, flexibility, mobility etc. An online voting System in a web-based application to use in the election process. For the purpose of identifying the person, the concept of face detection and recognition is used in this proposed project. Voters may only cast their votes in an election if the photo they took matches the image in the database that relates to the voter. Otherwise, they will be disqualified from voting. The current method restricts security to a voter card, which implies that anybody may use a voter card to cast a vote on behalf of another person.

II. RELATED WORK

Author :Swapnil Singh, Krunal Patil, Shaik Aftab [1] Facial recognition verification for online voting system. It aims to develop a computerized voting system to make the election process more secure and user friendly. The electorate want to visit distinct locations like polling cubicles and stand in an extended queue to cast their vote, because of such reasons most of the people skip their chance of voting. The voter who isn't eligible also can forged its vote via way of means of faux way which can also additionally cause many problems. That's why in this project we have proposed a system or way for voting which is very effective or useful in voting.

Author: Abbas Behrainwala, Amar Saxena, Ishika Navlani, Sakshi Sahay[2] Election plays an important role in such a huge democratic country like India where the leader is elected by residents. Elections preserve a truthful state functioning, as they provide people the choice to select their personal government. So the election ought to be an unfastened and truthful process. Now, we proposed a system with biometric authentication to make the voting process more secure and reduce the time taken in the voting process. By the use of this, the electorate can solidify their vote for his or her preferred candidate through the use of their system. We use Face detection and Recognition Technology for authentication of citizens that he/she is the proper consumer or not.

Authors: Dr. Sanjay Sange, Pranjali Gurao, Ishwari Pawar, Shruti Ragade, Akshada Zaware[3] Voters cast their votes by simply depositing their ballots in sealed boxes distributed across the electoral circuits around a given country. After ending of election period, the boxes which contains of ballot control unit are opened and votes are counted manually in presence of the certified officials appointed by election commission. So, 9it is a time– consuming process and also requires a lot of resources to conduct voting process. In this paper we have proposed online voting system to cast the vote using face recognition and OTP. The information about the OTP and Face is passed to the server unit for the further verification. Then the server checks for the data from the database and compares that data which is already existing in database. If the data matches with the already stored information, the person is allowed to poll the vote. If not, a message is displayed on the screen and therefore the person [3]Voters cast their votes by simply depositing their ballots in sealed boxes distributed across the electoral circuits around a given country. After ending of election period, the boxes which contains of ballot control unit are opened and votes are counted manually in presence of the certified officials appointed by election commission. So, 9it is a time– consuming process and also requires a lot of resources to conduct voting process
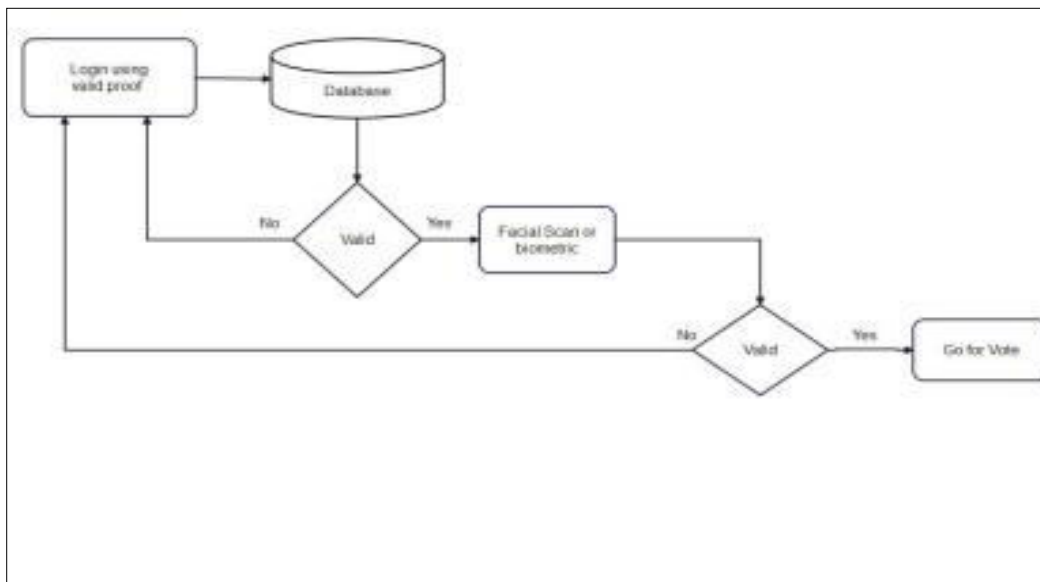
III. PROPOSED ALGORITHM

A. *System Architecture:*

Fig 1: Architectural diagram

B. *Working:*

Many people could not vote because the voter has to reach the poll booths to vote or some people like those who are living far away from their original birthplace where they are allowed to vote. So, to get rid of their drawbacks, a new System is introduced i.e., Online Voting System, which provides accuracy, security, flexibility, mobility etc. An online voting System in a web-based application to use in the election process. For the purpose of identifying the person, the concept of face detection and recognition is used in this proposed project. Voters may only cast their votes in an election if the photo they took matches the image in the database that relates to the voter. Otherwise, they will be disqualified from voting. The current method restricts security to a voter card, which implies that anybody may use a voter card to cast a vote on behalf of another person[1].

An architectural diagram is a visual representation that maps out the physical implementation for components of a software system. It shows the general structure of the software system and the associations, limitations, and boundaries between each element as shown in figure 1.
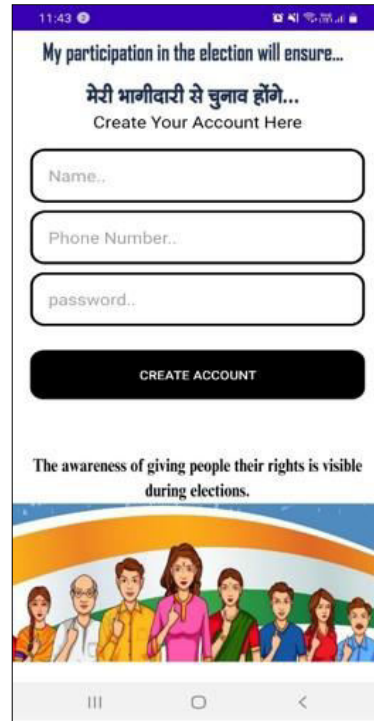
IV. SIMULATION RESULTS

Figure 2 Home Page

Figure 3: Registration Page

Figure 2. shows the home page of the system. In this, if user already have an account, he/she can be login themselves but if he/she does not have an account they have to create can account. Home Page also consist of Admin page. Figure 3 shows the registration page of the system. Using this registration page users can themselves for voting. Users have to type their name, phone number and any password for open applications for voting when voting are begins.
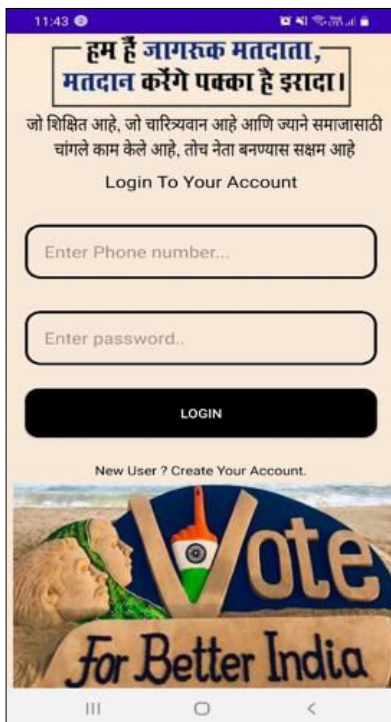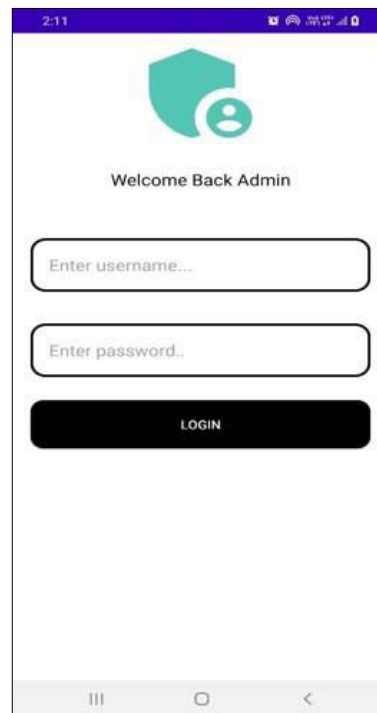

Figure 4: Login Page

Figure 5: Admin Login Page

Figure 4 the login page of the system. Using this login page users can login themselves for vote to the candidate. Users has to type their phone number which they are registered and enter password. After this user can go for further process. Figure 5 shows the admin page of the system. Using this admin page, admin can login themselves. Admin has to type their username and password.
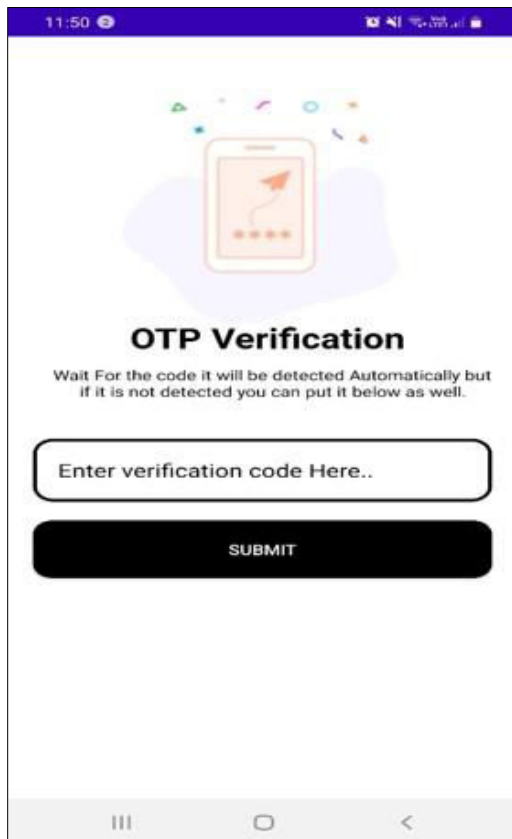

Figure 6 OTP Verification

Figure 7 Fingerprint Authentication

Figure 6 shows the id verification page of the system. Using this page system can verify that you are the right person or not. Figure 7 and 8 shows the Fingerprint page of the system. This page uses for fingerprint authentication. User has to click for giving their fingerprint authentication. This page help for the securing the system.

Figure 9 shows the face recognition page of the system. This page is use for checking that you are the correct person or not. User has to capture his image then system will check if your image is correct or not.

Figure 10 shows the selection of the party. After authentication process, user has to select the "Party" for voting. There are three parties here, choose the one you like. Figure 11 shows the confirmation of your vote. This step is shortly called by two step verification for confirming your vote. If by mistakenly you tap on your screen while voting then this step is useful for you to select your correct liking party.

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Figure8: Enter ID

Fig 9: Face Recognition

Figure 10. Select party for vote

Figure 11. Confirm for vote

Figure 11. shows the Thank you message to the user for voting.

V. CONCLUSION AND FUTURE WORK

This Online Voting system will manage the Voter's information by which voter can login and use his voting rights. The system will incorporate all features of voting system. It provides the tools for maintaining voter's vote to every party. There is a Database which is maintained on platform that is Firebase in which all the names of voter with complete information are stored. In this user who is above 18 year's register his/her information on the database and when he/she want to vote he/she has to login by his id and password and can vote to any party only single time. Voting details store in database. By online voting system percentage of voting is increases. It decreases the cost and time of voting process. It is very easy to use, and it is very less time consuming. Also, there is no chance of voter frauds and the money spent on security can be drastically decreased. Persons who have an internet connection at home with a web camera can vote without taking the strain to come to voting booths.

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