Voting System Support Through Face Recognition

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Abstract— In today's techno centric world, the most challenging task is to provide preventive measures while using technology enabled products. In order to provide preventive measure the proposed project will be implemented with the "Face Recognition". Face Recognition is used to verify voters, to eliminate fake votes and to eliminate repeated voting. Voter Id is used to fetch all the details of voter's from the database. Based on the region, voters will get list of candidates from which voter's will select one candidate. Data regarding votes and voters will be stored in main database using encryption technique. Data will be store at only one place, so winning party information can be announced within short time period.

Index Terms— Face Recognition, Voter Id, winning party

I. INTRODUCTION:

In the development of any country democracy plays a vital role. Democracy System runs by a leader of the country who is selected by citizen of a country. Citizens have right to choose leader through election. Process of election consumes lots of man-power as well as resources and preparation is started many days before commencement of the election. During this preparation it may happen that involved people make an illegal arrangement with each other or try to substitute their henchmen in this process to win the election. Election is the system which gives people a chance to choose their leader, so it must be transparent, Meddle-Proof, Usable, Authenticated, Accurate, Verifiability and Mobility. In the existing system there are certain drawbacks such as damage of machines, chances of violence, dummy voting and problem of proper monitoring is also an issue. As this process is place oriented and there is region wise distribution, voters need to reach the place of voting. This paper projects to implement voting system through mobile device within secure and violence free environment. The data storage format is encrypted which provides highly secured environment and is validated through face recognition.

II.EXISTING VOTING SYSTEM

In the existing voting system, the complete election process is divided constituency wise to facilitate the security forces and to make the election system fair. To maintain discipline and security requires a huge amount of man power so, it is bit difficult to accomplish election in a single day.

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Allocation of polls is done by election commission in advance. Generally polling booth is setup in school and community halls. Voter's card is distributed before one week so; the people can come to know about the location of voting. Time and place for voting is predefined. Each polling station is opened for at least 8 hours on the Election Day. As shown Fig 1: first of all the voter need to reach at polling booth. The first step is the identity verification, carried out by an associated person on the duty. Then officer makes mark of inedible ink on the voter's left forefinger thereafter voter has to sign in register followed by reaching inside the voting compartment. To mark a vote, a voter has to press blue candidate button on EVM machine against the name and symbol of his/her choice. When the button is pressed, the red lamp will glow against the symbol with beep sound which indicates that vote is successfully recorded. Every time this process needs to be repeated as well as arrangement of building and manpower on the location of voting is required.

III.PROBLEM WITH EXISTING POLLING SYSTEM

Allocation of location is decided in advance. Voters have to reach there to cast a vote. Chances of dummy voting are more because if authorized person is not honest as he/she is required to be so, he might perform illegal task of voting for a particular party person. Due to this malfunctioning chances of violence may raise or disturb the ongoing process [1]. In few cases voter is registered at more than one area so there are chances of vote recorded twice. Different voters have different reason to deny or to avoid or to escape from the voting say, due to unavailability on the day or place of the voting, fear of violence. To execute a voting process man power is required and the cost will increase per election as the population increases.
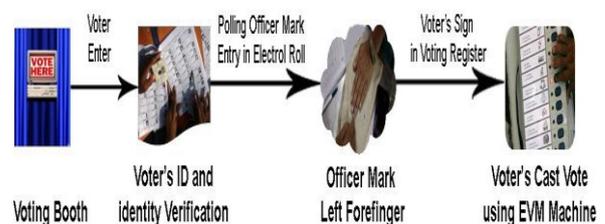

Fig.1 Existing Voting Process Scenario

IV.PROPOSED VOTING SYSTEM

As the discussion begins with voting through mobile device, first an application is required through which voters can communicate. Secure data centre is required to store and fetch the data as per requirement. Still there is a question of gathering voter's information. We need to use existing database in which voters information exist. Voters/citizens information is available in voter Id database. Assume that almost every next person is having mobile phone on which our application program will execute. To begin with mobile based voting system throughout voting process an internet connection is essential. Fig 2 shows the functional diagram of the proposed system. After connection is established voters need to download application from a specific source. After downloading and installing, start the application for face recognition to do this need to start front camera of smart device once it's started then need to scan face through front camera of smart device then system compares scanned image with centralized stored information this is called as sign in process. Once face is recognized successfully the complete detail of voter/citizen comes from voter Id database and related information exists on mobile device. Within this application list of candidates appear as per location which is fetched from voter ID. From the list, voters can select any one candidate as per his/her choice and after selecting the candidate voting is accomplished. So, after selecting particular candidate counting is incremented by one centrally. Here, the question may be raised about secured ballot? Database is used to fetch the information of voter and only one flag attribute constructed when user performs face recognition flag default value is zero changes to one which indicates that particular voter has given the vote and another separate database is used to store count of votes. So, as per Indian constitution it preserves secure ballot. If Voters do not have any smart device in such situation one common location is assigned for voting through mobile phones. So, on this location only few persons (humans) are involved to carry out this process.

V.ADVANTAGES OF PROPOSED SYSTEM:

As in the proposed system everything is done through one device so, voting will become transparent to all citizens. There is no chance of violence or attack as this process is not place oriented. Voters do not need to wait for longer period of time as they do not have to wait in a queue and there is no time constraint; this system provides mobility for voters. Less time consuming as compared to existing system. As this system stores the counting centrally the result of election comes in short time period. Cost is reduced as the smart devices are available with the individuals. Also since no or very little man-power is utilized, the cost of process execution is reasonably reduced. Highly secure and no chances of data lost. Voting information will store at server so no need to worry if smart device will damage. Unlimited no. of candidate information is being stored. Data storage capacity is high.
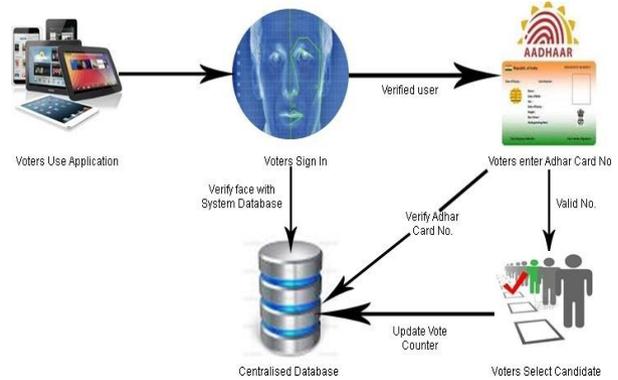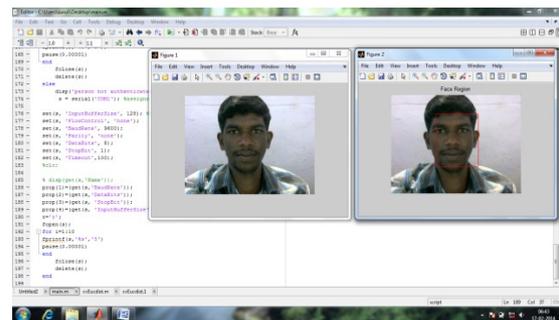

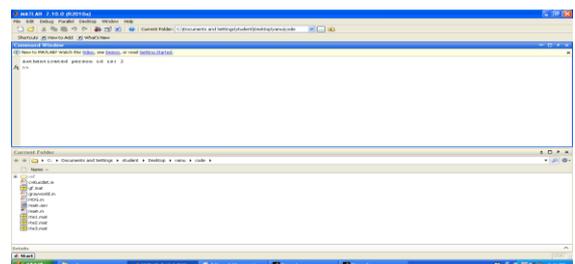Fig.2 Propound Voting Process Scenario

VI.OUTPUT RESULTS

The proposed system will be beneficial in a number of ways. The voter verification will be done through face recognition. Only the verified voter can vote, hence dummy voting will be eliminated. A voter can vote only once. So, voting multiple times or dummy voting shall be prohibited. Moreover, being a smart device, there is no geographical and time constraint. The proposed system would limit the voting time period allowing the voters to vote within that time frame only.

As there will be no crowd accumulation, there are no chances of violence. Being automated system, election in different slots need not be arranged. It can be organized on the same day all over the country. The voting result can be generated automatically and quickly. Also very less resources and man power will be utilized for execution of the system that will lead to overall reduction in cost. The proposed system is non-interfering, centralized, and economic as well time centric.
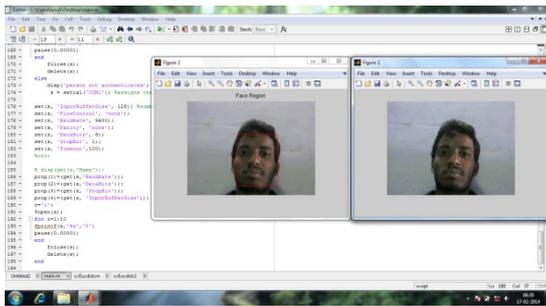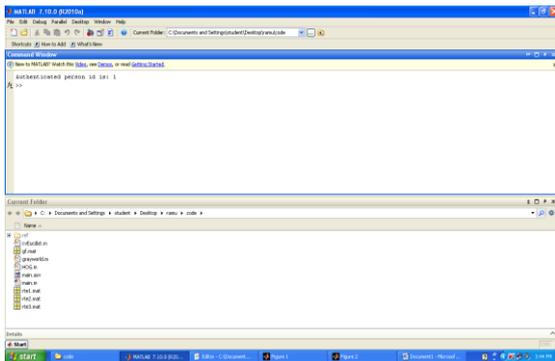

(a)

(b)

(c)

(d)

Fig.3 (a) Recognized person from database (b) Authenticated person 1 (c) Recognized person from database (d) Authenticated person 2

VII.CONCLUSION

As every operation is performed through internet connectivity so, it is one time investment for government. Voters' location is not important but their voting is important. As data is stored in centralized repository so, data is accessible at any time as well as backup of the data is possible. Online system provides updated result at each and every minute. Also requires less man power and resources. The database needs to be updated every year or before election so that new eligible citizens may be enrolled and those who are dead are removed from the voter list.

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