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## Smart Voting System

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### ABSTRACT

The Smart Voting System is highly secured and involves verification of voters at 2 levels. It illustrates the hardware and software aspects of the project. The voting machine will be able to take in finger prints and eye image as inputs and will recognize it using the trained model. The vote cast by recognized inputs becomes a valid vote and the unrecognized input becomes an invalid vote. Such a system of two step verification makes voting process transparent. Here we are considering 3 nominated candidates. 4 to 50 people can vote. Candidates should get enrolled before Voting. During election authorized Voters are allowed vote, unauthorized candidate are not allowed.

**Keywords:** Detection, Recognition, Haar Cascade.

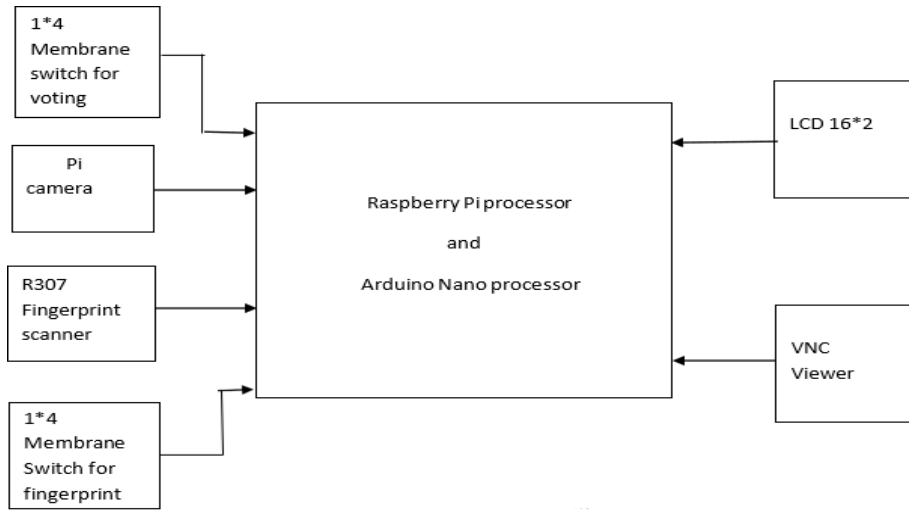
### INTRODUCTION

Electronic Democratic is the standard method for leading decisions utilizing Electronic Democratic Machines. Generally, voting forms were utilized. A polling form might be a basic piece of paper in which every citizen composes the name of the competitor or stepping against the name of their ideal up-and-comer. So the voter casts their ballot in a box at a polling station. It required ballots to be printed, which is very time-consuming and inefficient. There was no way to audit the system unless we manually re-count the votes and also it is susceptible to damage. In few places, where the governance is corrupt, they can easily insert several fake votes in the ballot and then it becomes impossible to track the honest votes. So in paper ballot system time, security and valuable records are at stake. Then, at that point, comes Electronic Democratic Machine. The Electronic Democratic Machine turned into the swap for the paper voting form, which is currently the backbone in the electing system. Electronic Democratic Machine comprises of two units. One is Control unit and another is Voting form unit with a link for interfacing the both. As of late Citizen Recognizable Paper Review Preliminary is appended with the Electronic Democratic Machine that permits the electors to confirm that their votes are given a role as expected. At the point when a vote is projected, a slip is printed containing name, image of the up-and-comer, this slip is printed gets consequently cut and falls in fixed box. In the ongoing framework, the control unit is worked by surveying corner official. The official affirms the elector's recognizable proof then, at that point, electronically enacts the polling form unit to acknowledge another vote. So there could be no legitimate component by which the citizen can check their character prior to making the choice because of which counterfeit electors can project various phony votes. For example, where the Elector and Citizen ID would be away yet at the same time the vote will be projected by another person. This is many times done when individuals who are mindful to check the confuse get compromised or get under impact or strain. So the Electronic Democratic Machine utilizing Unique finger impression confirmation and 2 Face acknowledgment will turn into the best answer for casting a ballot. Here we are utilizing organic qualities and contrasting this information and a biometric referred to information which had been put away during learning system of the model.

### SCOPE OF THE PROJECT

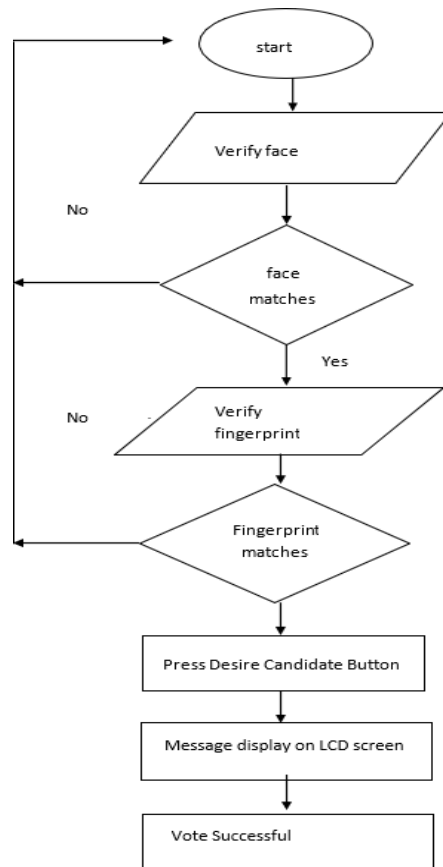
The aim of this project is to authenticate the voter's identity by Finger Print and Face Recognition using image processing. This would be a powerful tool for the ElectionSystem. The algorithm for model training and matching concentrate on automated detection of voter's fingerprint and Face.

**METHODOLOGY**



**Fig.1.1:Block diagram**

The working of the project involves hardware and software. Hardware includes the peripheral device that takes in the physical world input. The embedded device(microprocessor) which accumulates the input data, processes it and gives out the output. Collecting data from a central database. This data set is used to train a model. The second aspect is deploying the model into the microprocessor. The model gives the prediction and accuracy percentage. Depending upon the accuracy percentage the model predicts true or false. LCD will display the verified Voter ID, if true otherwise it will display Invalid Voter.



**Fig.1.2: flow diagram**

The process begins at the "Start" point. The system proceeds to "Verify Face" by capturing and analyzing the user's face. If the face matches the stored data, the system moves on to "Verify Fingerprint" by capturing and analyzing the user's fingerprint. If the finger print matches the stored data, the user is prompted to "Press Desired Candidate Button" to select their preferred candidate. After the button is pressed, a "Message" is displayed on an LCD screen confirming that the vote was successful.

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## RESULTS

Here we are considering 3 persons as candidates who are nominated for the election. Minimum of 4 persons to Maximum of 50 people can vote. After the registration and enrolling process, the data sets of authorized voters are created. During the election, first Face of the voter is verified. If the voter is authorized with reference to the display shows "Face detected".

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## CONCLUSION

This project idea came from the ongoing election process, its campaign speeches delivered by party leaders against opposition claiming them of violating EVM during voting process by casting fake votes in favor of them. Thus to overcome such tactics and make voting process go paperless and fully secured fingerprint and face recognition based EVM is designed, on implementation of this machine, the election process of our country will be revolutionized. The project "Smart Voting Machine Based on Finger print and Face Recognition" has been successfully designed and tested. This can bring revolutionary change in the election procedure. As the normal EVM is the controversial issue in recent days, this can be a solution for all the problems. Not only in India but also in other countries the face of the election procedure can be changed drastically using this technology.

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## FUTURE WORK

- 1) In the future work instead of pi camera for capturing the image of face, High resolution camera can be used for more accurate results.
- 2) Instead of R307 Finger print module which uses optical sensor, the ultrasonic finger print can be used. Ultrasonic fingerprint scanner produces 3D image of our fingerprint image which provides more security than the optical sensor.
- 3) Instead of Haar cascade algorithm used for face recognition, Eigen's Faces Algorithm can be used.
- 4) Audio output can be introduced to make it user friendly for illiterate voters.

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