# BIOMETRIC VOTING MACHINE

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**Abstract:** It has always been a tough task for the election commission to carry out free and fair polls in our country. Crores of rupees have been spent on this to build sure that the elections are uprising free. But, now- a -days it has become common for some forces to spoil in wires which may ultimately lead to a result contrary to the actual verdict given by the people. This paper aims to demonstrate a new voting system employing biometrics in order to avoid rigging and to improve the accuracy and speed of the process. The scheme uses thumb impression for voter identification as we know that the thumb impression of every human being has a unique pattern. Thus it would have an edge over the present day voting systems. As a pre-poll procedure; a database consisting of the thumb impressions of all the adequate voters in a population is created. During elections, the thumb impression of a voter is enter as input to the system. This is then compared with the existing records in the database. If the particular pattern matches with any  one in the available record, access to cast a vote is decided .But in case the pattern doesn't match with the records of the database or in case of replication, access to cast a vote is denied or the vote gets rejected. Also the police station nearby to the election poll booth is informed about the identity of the imposter. All the voting machines are connected in a network, through which data transfer takes place to the main host. The result is instantaneous and counting is done finally at the main host itself. The overall cost for conducting elections gets reduced and so does the maintenance cost of the systems.
Keywords: poll, vote, database, pattern match

## INTRODUCTION

Fundamental right to vote in elections form the foundation for the democracy. Elections [1] consent to the community to choose their government and articulate their preference for how they are governed. In all earlier elections of India, such as state or central elections, a voter casts his/her vote by marking with stamp against their chosen candidate and then folding the ballot paper as per a prescribed method, before dropping it in the ballot box. This is a time-consuming and very much prone to errors. The same method was continued till the electronic voting machines were introduced in the election process. Because of the EVM  s, all the condensed materials like the ballot papers, ballot boxes and stamping are completely replaced into a s mple box called ball ot  unit. EVM s retain all the characteristics of voting by ballot papers, while making polling a lot more expedient. 1.1 Requirements Of E Voting The requirement in traditional voting process is also applicable for e-voting and some of them are mentioned below [3]Fairness: No person can learn the voting outcomes before the tally.

Eligibility : Only eligible voters are  allowed to cast their vote.
Uniqueness: No vote r is allowed to cast the vote more than once.
Privacy : No person  can access the information about the voters vote.
Accuracy : All th e valid votes should be counted correctly

Efficiency : The counting of votes can be performed with in a minimum amount of time

BIOMETRIC SYSTEMS

Biometrics  is a method of recognizing a person based on physical or behavioral characteristics. Examples of biometric information used to identify people include fingerprint, voice, face, iris, handwriting, and hand geometry. There are two key functions offered by a biometric system. One method is identification, a "one – to  many"(1:N)matching process in which a biometric sample is compared sequentially to  a set of stored samples to determine the closest match. The other is verification, a "one -To  one"(1:1)matching process in which the biometric system checks previously enrolled data for a specific use r . The verification method provides the best combination of speed and security, especially where multiple users are concerned, and requires a user ID or other identifier for direct matching. Unprecedented growth in electronic transactions has underlined the need for a faster, more secure and more convenient method of user verification than passwords can provide. Biometric identifiers offer several advantages over traditional and current methods. This is because only biometric authentication is based on the identification of an intrinsic part of a human being. Tokens such as smart cards, magnetic stripe cards and physical keys, can be lost, stolen, duplicated or left behind. Passwords can be forgotten, shared, hacked or unintentionally observed by third party. By eliminating these potential trouble spots, only biometric technology can provide the security, with convenience needed for today's complex electronic landscape. 3.1 Finger - Print Biometric Human fingerprints are unique to each person and can be regarded as a sort of signature, certifying the person's identity Fingerprints [6] are the oldest and most widely used form of biometric identification. A fingerprint is formed from an impression of pattern of ridges on a finger. A ridge is defined as a single curved segment, and a valley is the region between two adjacent ridges. The minute which are the local discontinuities in the ridge flow pattern, provide the features that are used for identification.

Finger - Print Recognition
It is an active research area nowadays. An important component in fingerprint recognition systems is the fingerprint matching algorithm. According to the problem domain, fingerprint matching algorithms are classified in two categories: fingerprint verification algorithms and fingerprint identification algorithms. The aim of fingerprint verification algorithms is to determine whether two fingerprints come from the same finger .

**Algorithm of Proposed System:**
Step1: Initialization of procedure.
Step2:  It is assumed that the voters have previously registered and their finger - prints and voter Details are stored in  remote server
Step 3 : Check if the voter I.D is valid or not .
Step 4: If the voter has not registered or if the card ID  is unacceptable ,then exhibit the message that the user is an unauthorized person.
Step 5 : Else if the card is valid, then go to next step.
Step 6 : Check if the candidate has already voted or not.
Step 7 f he has already casted his vote,then message is displayed that he has previously voted and is prevented  from voting for the second time.
Step 8: E if the candidate is voting for the first time,then he is allowed to vote.
Step 9: parties in dispute is displayed on LCD.
Step 10: A fter vote casting, the candidate's photo,name,constituency and voter I.D is displayed on LCD.
Step11: The polling results are sent instantaneously to central server which is accessed by an official using I.P address and password.
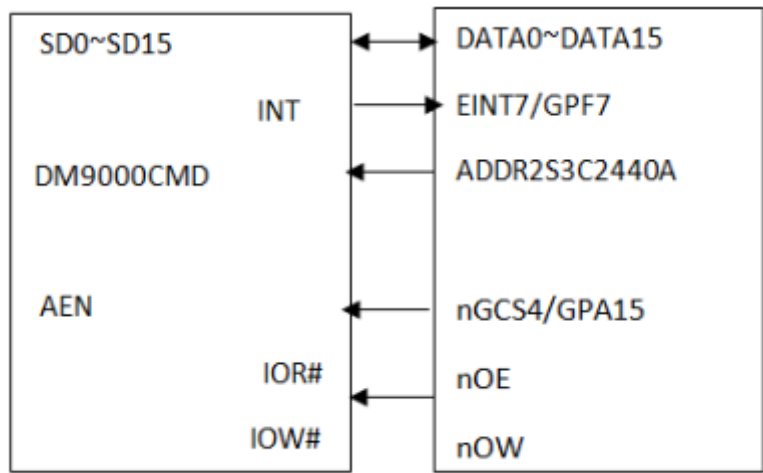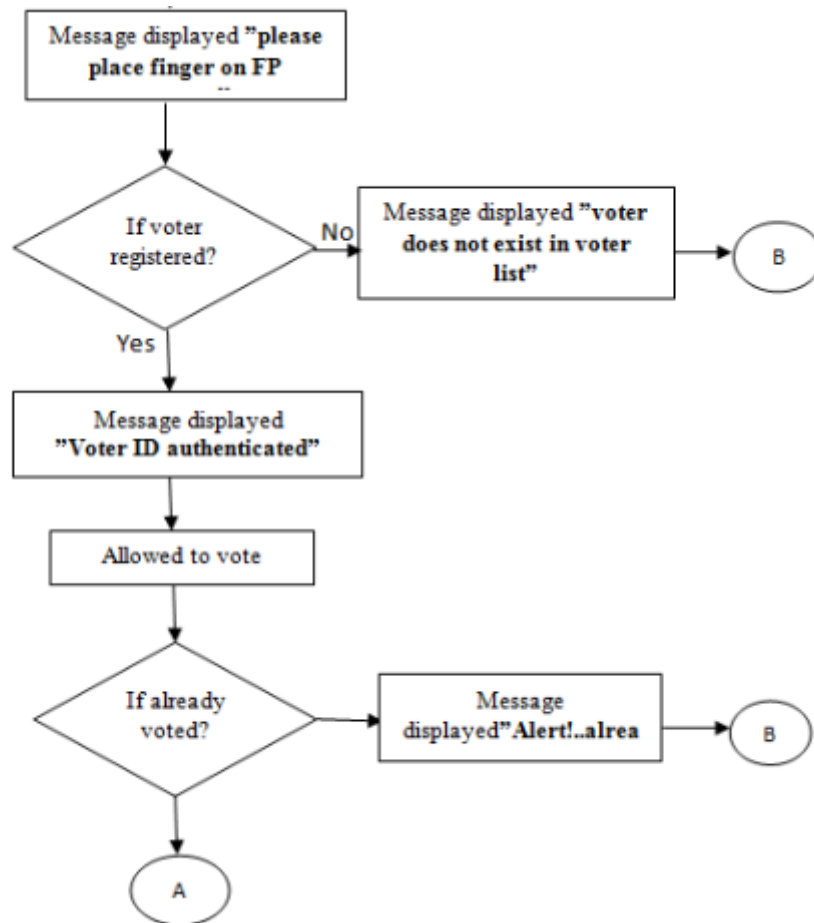
**Figure7:Interfacing diagram.**

## CONCLUSION AND FUTURE SCOPE

This paper is used to enhance security by eliminating bogus voting and vote repetition using finger -print based authentication .As an additional security measure  photo and details   of the voter are displayed on  ARM9 L CD from remote server and results are viewed at central server by an authorized person.In future,  security of FP - EVM can still be enhanced if finger -print data can be stored and accessed from central server

## REFERENCES

[1] http://www.rspublications.com/ijeted/ijeted_index.htmIssue 2,vol6,september2012 ISSN 2249 6149
[2] http://en.wikipedia.org/wiki/Indian_voting_machines
[3] IJCSI International Journal of Computer Science Issues, Vol. 10, Issue 4, No 1, July 2013ISSN (Print): 1694 - 0814 | ISSN (Online):  1694
[4] FingerprintImageEnhancementandMinutiae Extraction -  Raymond Thai