An Advanced and Secured Biometric Voting System

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Abstract- The model proposed enables the voter to poll his vote in any of the polling station in his state or anywhere in the country. The voting terminals may be interconnected using IOT technology. The system 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. During elections, the thumb impression of a voter is entered as input to the system. This is then compared with the available records in the database. If the particular pattern matches with anyone in the available record, access to cast a vote is granted. But in case the pattern doesn't match with the records of the database or in case of repetition, 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. This model is proposed by considering the current practices of election procedures. So it can be very easy for migrating to this system.

I. INTRODUCTION

The Biometrics technologies are used to measure and analyze personal characteristics. These characteristics include fingerprints, voice patterns, hand measurements, irises and others, all used to identify human characteristics and to verify identity. These biometrics or characteristics are tightly connected to an individual and cannot be forgotten, shared, stolen or easily hacked. These characteristics can uniquely identify a person, replacing or supplementing traditional security methods by providing two major improvements: personal biometrics cannot be easily stolen and an individual does not need to memorize passwords or codes. Biometrics gives you an alternative and higher security compared to passwords or pin identification due to the fact that passwords and pin can easily be compromised. Authentication by biometric verification is becoming increasingly common in corporate and public security systems and applications. We propose a system where we use biometric Fingerprint Voting system for general public during elections. System records votes based on registered fingerprints. It is interactive GUI for adding efficiency and for automating organization procedures. Fingerprint authentication refers to the automated method of verifying a match between two human fingerprints.

II. LITERATURE SURVEY

Nirwan Amari, Pitipatana Sakarindr "Evaluating Electronic Voting Systems Equipped with Voter-Verified [2008], This paper the authors reports on their analysis and testing of one US state's criteria for direct-recording electronic voting machines equipped with voter-verified paper-record systems. The criteria and analysis cover various categories, including privacy, security, verification, integrity, functionality, and examination Direct recording electronic voting machine This type, which is abbreviated to DRE, integrates with keyboard, touch screen, or buttons for the voter press to poll Some of them lay in voting records and counting the votes is very quickly. But the other DRE without keep voting records are doubted about its accuracy.

Rohith Kumar "Electronic voting machines" [2015], In this paper,EVM stands for Electronic Voting Machine. This makes polling much fast and is more reliable than ballot papers, by preventing bogus voting to a great extend. The EVMs saves considerable time, money and manpower. It also helps in maintaining the secrecy of individual voting. At the end of polling, just press a button and there you have the result. Timer could be included, which could automatically end the voting after specified duration of time. Biometric Verification of voters, so that automatically it can be insured that one person is voting only once. It can be made more interactive by adding Sound effect (speech) to it. EEPROM can be used to store the data permanently. If we make more than one EVM, each to be used at different locations and the final result is the addition of result of all, we could think of connecting them to communicate with each other and final result can be shown on one of the LCD.

Peter G. Neumann "Security Criteria for Electronic Voting," [2005], This paper considers some basic criteria for confidentiality, integrity, availability, reliability, and assurance for computer systems involved in electronic voting. After an assessment of the reliability of those criteria, it concludes that, operationally, many of the criteria are inherently un satisfied with any meaningful assurance.

Rudrappa B Gujanatti "Finger Print Base Electronic Voting System" [2015], The paper deals with the design and development of a Fingerprint Electronic Voting System. The suggested fingerprint voting system allows the user to scan his fingerprint, in order to check his eligibility by comparing his current fingerprint with the one already stored in the system's database, by the use of MATLAB using Gabor algorithm. Gabor algorithm shows better result if it compared with other algorithms that

Special Issue - 2018

International Journal of Engineering Research & Technology (IJERT)
ISSN: 2278-0181
NCESC - 2018 Conference Proceedings

depend on Minutiae technique because it combines both local and global features. Once the users complete the identification process, they will be allowed to cast their vote using Biometric.

III. METHODOLOGY

From the block diagram we see that there are two levels, Admin and Booth level. In the Admin level the voter registration, scheduling the election date and time are done. This voter details are stored in the data base and are retrieved/fetched whenever necessary. In the Booth level the election date and time are displayed in the home page, the voter finger print are checked and compared it with the pre stored information in the data base. If the finger print matches, the user is allowed to cast his/her vote. If the finger print does not match with any stored information or the vote has been already casted using the same authentication the screen will display it is invalid.
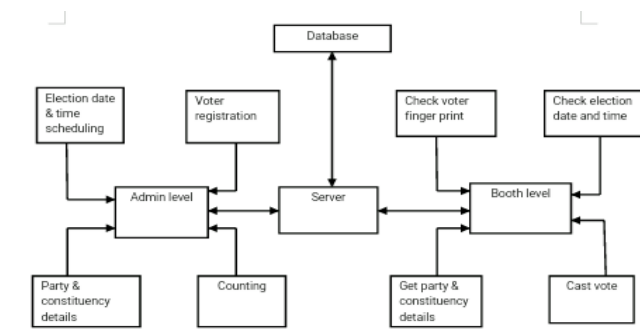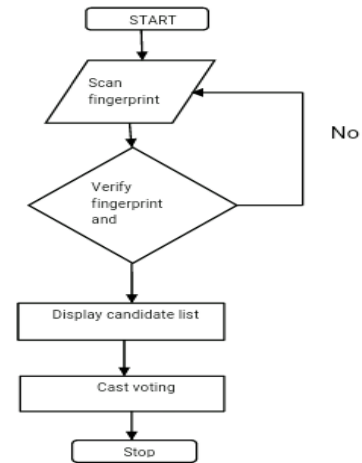
A. Flow chart

Flow chart for voter Registration and Enrollment process
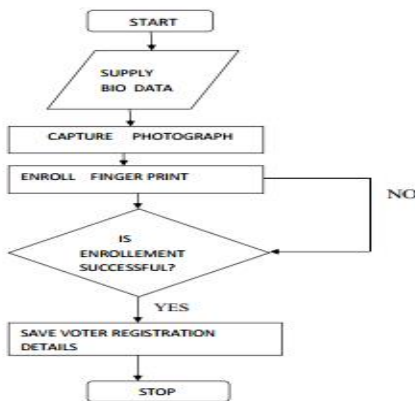
Flow chart for voter verification and Casting process

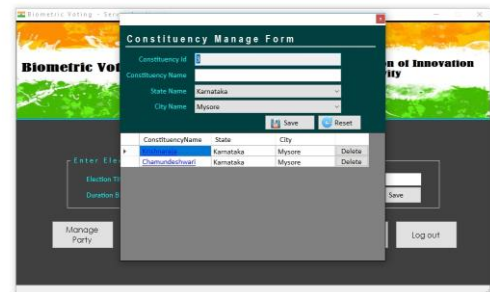### IV. RESULT

Fig: 4.1 Party Manage form
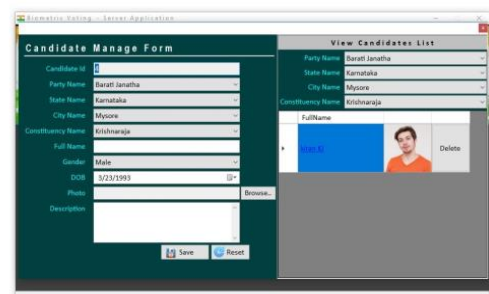
Fig 4.2 Constituency Manage Form

Fig 4.3 Candidate manage form

Special Issue - 2018

International Journal of Engineering Research & Technology (IJERT)
ISSN: 2278-0181
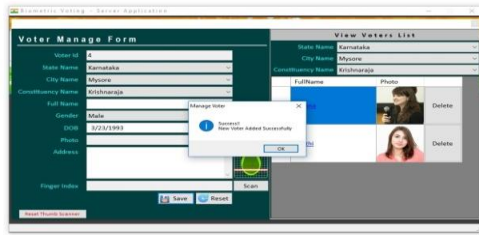**NCESC - 2018 Conference Proceedings**

Fig 4.4 Voter Manage Form

V CONCLUSION

Finger print is considered as one of the most popular biometric method used for human recognition. Every recognition in the globe is or with unique fingerprint and even twins are born with totally different finger print and is naturally unchangeable throughout the life. For that reason finger print voting system has been made and person ID has been replaced with finger print. This finger print voting system is evaluated and implemented successfully. The evaluation of the system is made using different PC's with different specifications in order to stand on the system strength and weakness. The final result of finger print voting system is significant and compatible with other voting systems.

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