Title:-E-Voting With Real Time Bio-Metric Verification System Implemented In Java Web Application

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Abstract- *Voting is the process that implements and delivers one of the major right of human democracy. In case of elections there is still use of conventional voting system. This system is less effective in terms of cost, governance and working time. The possibility of fake vote calculations and valid voter's identification is very less in conventional voting system. With the rapid development in today's technology, we can make electronic voting system based on java to solve the problems of conventional voting. E-voting security becomes fundamental things that must be considered. For verification of genuine voter, system is integrated with real-time verification of voter using Biometric fingerprints scanning. This system mainly implemented for voters who situated at distanced locations from local voting area. Distanced locations are far from actual local voting area, voters are facilitated to vote from verified E-voting booths situated at remote locations. Voter's votes are stored into secure databases, which are maintained by respective election commissions. We used java technology to achieve secure environment of E-Voting. As java web applications are one of the secure technology among all other latest technologies.*

Keywords- Biometric Verification, E-Voting System, Fingerprint Scanner, Image Processing, Online Voting.

I. INTRODUCTION

System aims to provide efficient services for voters who are situated at distance places that is places other than local places. At the time of voting voter is not necessarily be available at voting location. Voters can cast votes through authorized government personals via online voting platform which is monitored by Election Commission of India. Voters at distance location can visit Distance Authorized Person (DAP), initially voter is registered with Aadhar ID and Voter ID through DAP.

Person responsible for monitoring election process at local place is referred as Local Authorized Person (LAP). Main objectives of LAP and DAP is to eliminate duplicate voting. To eliminate duplicate voting, database of Voters at that particular location is monitored by both LAP and DAP in real-time. Once voter casts the vote, that entry is done into database and that particular voter is blocked for that election process.

At the time of voting voter is verified through biometric verification, this can be implemented through fingerprint scanner hardware. Voter need to provide his unique Aadhar ID along with Fingerprint impression for confirmation of genuine voter. After confirmation vote casting is done and votes are stored in secured database monitored by election commission.

II. LITERATURE SURVEY

- **Title: Requirements and Evaluation Procedures for eVoting**

Only the most trivial computer system can be expected to meet its requirements if those requirements are not specified. Despite the widespread use of electronic voting (evoting), no requirements catalogue exists that expresses the requirements for evoting systems with enough precision to be checkable. Nor do existing catalogues take evaluation techniques and certification procedures into account. This paper takes the first step towards the development of a new catalogue with corresponding assessment procedures, concentrating on a strict subset of evoting systems.

- **Title: RSA Implementation for Data Transmission Security in BEM Chairman E Voting Android Based Application**

Voting is a process that should be do in terms of leadership. In case, voting still use conventional methods which are less effective in terms of cost, governance and working time. The possibility of calculation errors and fraud in the calculation process can also occur. STMIK Atma Luhur still using the conventional voting method in the election of the chairman of BEM.

- **Title**: **An E-Voting platform for QoE evaluation**

   Electronic voting systems have long been used as a way of collecting information. In many of them security is not taken into account; however, it is usually a must in a voting process. In this paper we describe an implementation of a secure E-Voting system, based on ring signatures providing multiple features such as link ability or anonymity. This makes our proposal very attractive as a tool for information gathering in QoE evaluation. The system also allows linking together all the ballots of each user, without loss of anonymity, and watching the different trends in the users' opinions. Users carry out the voting with a web browser, which enables the addition of multimedia content to the poll, thus helping the information gathering process in QoE evaluation.

- **Title: Side-channels and eVoting machine security: Identifying vulnerabilities and defining requirements**

   Election systems making use of eVoting machines are becoming more prevalent. However, security issues do exist within current products and proposed systems. One of these issues is the occurrence of implementation-specific information leakage, otherwise known as side-channel leakage. These have serious implications for voter secrecy. An attack based on electromagnetic leakage from Nedap voting machines has demonstrated that this type of leakage is a relevant issue within eVoting.

III. PROPOSED SYSTEM

   E-Voting platform is made available for serving voters who situated at distance or service locations. At the time of voting voter is not necessarily be available at voting location. Voters can cast votes through authorized government personals via online voting platform which is monitored by election commission of India. Voters at distance location can visit Distance Authorized Person (DAP), initially voter is registered with Aadhar ID and Voter ID through DAP. Person responsible for monitoring election process at local place is referred as Local Authorized Person (LAP). Main objectives of LAP and DAP is to eliminate duplicate voting. To eliminate duplicate voting, database of voters at that particular location is monitored by both LAP and DAP in real-time. Once voter casts the vote, that entry is done into database and that particular voter is blocked for that election process. At the time of voting voter is verified through biometric verification, this can be implemented through Fingerprint Scanner hardware. Voter need to provide his unique Aadhar ID along with Fingerprint impression for confirmation of genuine voter.

After confirmation vote casting is done and votes are stored in secured database monitored by election commission.
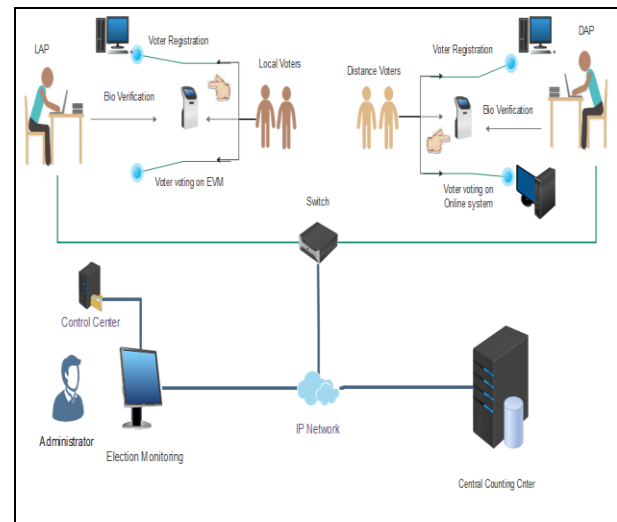

Fig: Architecture Diagram

IV. STATEMENT OF SCOPE

   Inputs for the system has specific requirements, input contains registration of voter, details of candidate and fingerprint impression of voter. All the necessary details of voter should filled by voter, Aadhar ID and Voter ID should contain unique constraints, so duplication of voters can be eliminated. Candidate details are verified and filled by Admin, through Add Candidate field. Candidate details should include all necessary and transparent information of candidate.

   Biometric verification technique is used for verifying uniqueness of voter. Input of fingerprint impression must be provided in front of Authorized person (DAP or LAP). After successful verification of voter through fingerprint scanner, voter is allowed to vote through computerized system.

V. USER PROFiLES

Actors and Description of Actors:

1. Administrator:
   - Administration authority will be handover to election commission personals.
   - Their responsibility is to manage elections.
   - Manage LAP/DAP.
   - Manage candidates and voters.

2. Local Authorized Person (LAP):
   - Responsible for voting at local area.
   - Checks and verify genuine voter.
   - Eliminates duplicate voting.

3. Distance Authorized Person(DAP):
    - Responsible for voting from distance location.
    - Initially registers voters for online voting process.
    - Verifies voter through Bio-metric verification.

4. Local Voter:
    - Local voters visits the local area for voting and cast votes through EVM machines, after successful verification by LAP.

5. Distance Voter:
    - Initially distance voters need to register for online voting process through DAP.
    - At the time of Elections only registered voters are allowed to vote through online platform, after successful verification by DAP.
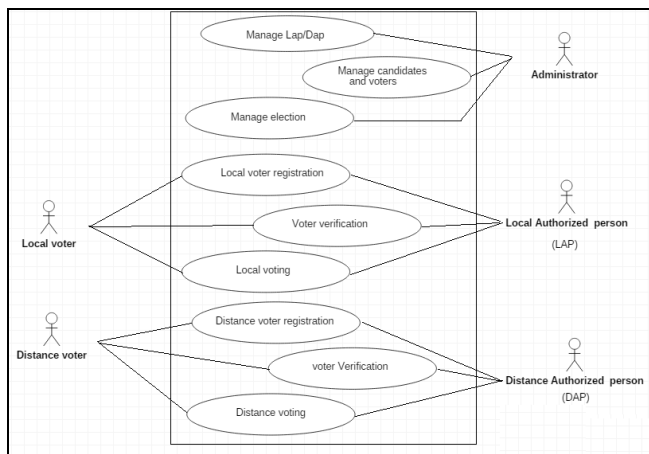

Fig: Use-Case Diagram

VI. CONCLUSION

This paper describes electoral system which is completely automated, unbiased and online for easing the process of voting, increasing security and reducing the counting time the project is divided mainly into two section first one is voter registration phase of voter and second one is of actual voting phase on voting console. Project contains biometric device which will verify the identity from the database saved in repository by the communication and if respective voter is identified then authorization will approve to that respective voter at the same time in other section of repository it updates the database of authorized voter to register voter is qualify to vote and to uniqueness, also it will prevent the duplication and falsification of voter. The main focus of the proposed system is voters are not necessarily come for voting to their respective local places, whereas our system provides centralized service for voting through online voting platform.

VII. FUTURE SCOPE

The online E-Voting system can also be implemented with another kind of biometric verification system like retina scan. System can be integrated with more secure algorithms while storing votes into database of election commission. This project can be further extends for more varieties of voting elections through online voting platform.

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