ONLINE VOTING SYSTEM

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Abstract: This paper describes electoral machine which is completely automated, unbiased and online for easing the process of voting , increasing safety and decreasing the counting time The undertaking is divided on the whole into two part first one is voter registration section of voter and 2d one is of genuine vote casting phase on vote casting console. In voter registration phase the database of voter will be saved in repository which in particular includes voter's unique identification number and finger prints information. Project consists of biometric device which will verify the identification from the database saved in repository through the verbal exchange of Wi-Fi module i.e. esp8266 and if respective voter is identified then authorization will approve to that respective voter at the equal time in other area of repository it updates the database of licensed voter to register voter is qualify to vote and to strong point ,also it will forestall the duplication and falsification of voter ;after getting authority from the repository balloting enabling sign will send from VVB via using ZigBee to balloting console for enabling vote casting for that precise voter , when voter votes then that vote will ship to repository with the assist of esp8266 and the vote casting console will be reset after the voting of every vote.

Keywords: Electronic Voting Machine (EVM), Biometric, Voting System, Voting analysis.

I. INTRODUCTION

Voting is very fantastic way to disclose opinion about a difficulty or subject from a team of human beings Based on the promise of greater efficiency, higher scalability, faster speed, lower cost, and greater convenience, vote casting is presently shifting from manual paper-based processing to automate electronic-based processing [1]. The term "electronic voting" characteristically depicts to the use of some digital means in vote casting and make certain the security, reliability, warranty and transparency. Now a day the vast range of software of balloting encompass its use in reality scholar physique elections, shareholder meetings, and the passing of law in parliament [2]. It may be the most important, influential and widespread use of balloting is its use in country wide elections and talking of national elections there are 204 nations in the world about them 120+ nations follows democratic or hybrid democratic method so electoral machine is the coronary heart of these state . In India we used the electronic voting laptop or EVM which is developed by using election commission of India and Bharat Electronics restricted i.e. BEL in 1977. It consists of normally two gadgets they are controlling unit and ballot unit, ballot unit is used for the genuine voting.
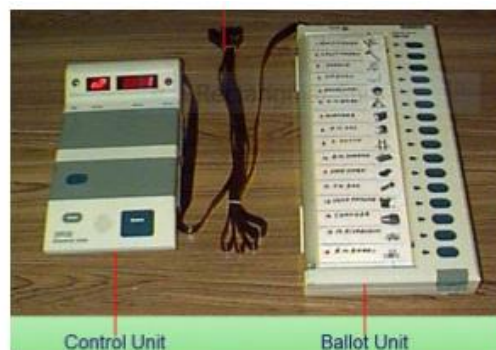

Fig. 1 Hardware of system

The controlling unit is for counting wide variety of votes both devices are linked together with a 5-meter-long wire and the maximum no of votes that can be enrol in ballot unit are 3850 however there are some problems partner with this

machine they are mentioned below.

A.   Security Problems:

In existing day scenario, EVM effects can be tampered via manipulating the software saved in the EVM and by using installing a seem alike component which can be advised to tamper the results.

B.   Illegal Voting (Rigging) :

Rigging is a frequent malpractice in the balloting system the place supporters of a particular party illegally manipulate to solid votes of genuine voters and deprive them of their vote casting rights in order to get the outcomes in their favour.

C.   Privacy

The anonymity of the voter is preserved and there is no way to link the voter to the vote casted through the voter.

D.   Verifiability

The system gives capacity to recheck the results in case there is a necessity to recheck the election results.

E.   Availability

The device ensures full availability to the voters on the polling day.

F.   Resume Ability

Security can be regarded the heart of any nations balloting machine so while developing the system in this assignment security is given best possible priority. Biometric verification is viewed as the authentication measure of voter because biometric signature viz. finger print, retina etc. of any character have special cost and these biometric signature of man or woman does no longer alternate even after death of individual so now a days biometric is giving very positive effects which will lead to the illegal voting / rigging of voting. the database of voters and the vote of the voters are going to shop into a server

which will communicate to all balloting booth so there will be flexible of voter to enrol their vote on voting sales space which is possible for voter and due to votes are saved into the server there will no tampering of votes whilst counting.

II.   LITERATURE SURVEY

During the path of this challenge improvement we have referred a variety of papers to analyse the troubles in the existing system and parent out solutions that are economically viable. Background research on the organisation and comparative studies of current systems is additionally accomplished to extra apprehend the system requirements earlier than the device used to be developed. And by means of analyzing this gadget we designed system which is described in this paper This chapter deals with the brief description of a range of E Voting Systems posted in IEEE papers by using the IEEE Computer Society on E-voting.

A. Three Ballot Based Secure Electronic Voting System

The paper, "A Three-Ballot-Based Secure Electronic Voting System "written by using Regivaldo G. Costa,Altair O. Santin, and Carlos A. Maziero proposes a vote casting gadget based totally on three ballots[3].Fig. 2 Overview of proposed architecture. The voter has to forged three votes on the three ballots and all the three votes will have a special numeric identifier. On the three ballot papers all the candidates will be marked as soon as randomly and the voter additionally marks the favored candidate. Thus the desired candidate has two marks and the remaining candidates will have solely one mark. The voter then chooses one ballot randomly and then that is given as a vote receipt. Once the elections are done, the electoral authority publishes the vote receipts so that the voter can verify if their votes had been counted. As per the proposed block diagram the voters first existing themselves to the registration agent to get a credential that would allow them to forged their vote(event 1 in Figure 1) [3]. The registration agent then obtains ballot Ids (BIDs; match 2) and generates credentials that are returned to the voters. After authentication (event 3), voters solid their vote the usage of a balloting console (event 4). The vote is then saved in the electronic ballot box(event 5) and a vote receipt is issued(event 6).On the result day, counting phase(event 7) starts and the electoral authority publishes the vote receipts on the electronic election bulletin board(event 8)[3].
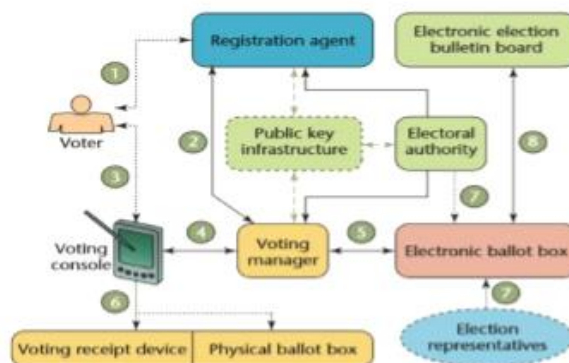
Fig. 2 Overview of proposed architecture

B. Direct Record Electronic (DRE) System & Voter established Paper Record System (VVPRS)

A DRE vote casting desktop with VVPRS functionality consists of a ballot show unit along with a balloting panel. It additionally consists of internal and external memories. It includes a paper-record show unit, and a paper-record storage unit and a printer to print the paper record. Once the voters confirm their vote casted, the EC officers couple the electronic version of vote with the paper record. Four in a different way manufactured desktop kinds with one of a kind configurations have been tested. All the machine sorts 1,2,3& four had a 32"/15" LCD contact screen. All of them were exceptionally powered by way of an alternating modern-day with extra battery backup of 16 hours for computer 1 & two and two hours for computer three &4. The ballot used to be activated using RFID tags. The storage devices blanketed built-in memory, flash drive, DVD for m/c 1; built-in memories, a proprietary system designed by way of Personal Computer Memory Card International Association (PCMCIA) for m/c 2; builtin memories, a proprietary PCMCIA machine for m/c 3; three constructed in memories; a compact flash card; a proprietary, IrDA designed machine for m/c four The paper record storage unit of VVPRS blanketed a steel field for m/c 1; a bag for m/c 2 and a spool for m/c 3 & four Thermal printers had been used and two strategies have been adopted: reduce and drop VVPRS for m/c 1 & 2 and a non-stop spool for m/c three & four The paper furnish potential extends up to 600 votes for m/c 1; 500 votes for m/c two and one hundred twenty votes for m/c 3&4.

C. Optical Scan E-Voting System, "DEMOTEK"

Demotek is an digital gadget that scans paper ballots using an optical persona attention (OCR). The OCR scanner of Demotek has two slots in which one is for reading and validation and the other for counting. The ballot resembles the traditional ballot papers however with a variation that it carries a distinctive strip which consists of textual content that are visible solely in the presence of UV light. The polling booths have UV Light systems. The voter covers the coting section by means of folding ballet paper. The Demotek then scans the UV readable part.

The voter's handover their ballot paper to the polling sales space president who deposits them in the field via the 2nd slot. Once all the ballot papers are deposited the polling booth president is in cost of locking the ballot boxes. The polling sales space president makes use of an administrator card for the above purpose. On the election day, the administrator card is presented to the OCR gadget and the Demotek shows the closing results. The Demotek prototype secures privateness by way of scanning UV readable labels that voters have checked [5]. Voters supply their paper ballot to the polling area president, who then deposits the ballot into the box thru the 2d slot [5]. Paper ballots will stay internal the obvious ballot box until the stop of Election Day [5]. If any person desires to audit the outcomes given by the e-voting system, the paper ballots are available for manual counting [5].Once all votes are recorded and secured in the ballot box, the polling vicinity president have to shut the digital ballot box, the usage of an administrator card designed for that purpose[5].When he or she presents this card to the OCR system, it shows the final results and transmits them to the Central Electoral Office (where all the consequences of all the electronic ballot bins are accrued and counted) by GSM quick messages.

III. ANALYSIS TABLE

|	3 BALLOT SYSTEM	DEMOTEK	DRE-VVPRS
USER INTERFACE	Voting console	Small display next to OCR Scanner on the lid	32"/15" LCD Touch Screen
METHODS FOR VOTER AUTHENTICATION	Biometric gadgets	Manual authentication using voter's ID	RFID clever card
ASSISTENCE FOR DISABLED ON VOTING INTERFACE	Braille code can be used on the vote casting console	Absent	Audio Assistance is present
VOTE RECEIPT	One ballot chosen at random by the voter is copied as a vote receipt	After casting the vote, a code is generated for each voter that's displayed on the monitor	Printed voter established receipt is given to the voter
ACCURACY	Possible issues due o system failures or attacks.	Possible issues due o system disasters or attacks.	Possible issues due o system screw ups or attacks.
STRIKING FEATURES	Security ensured through the use of public and personal keys.	Various capacity for data transmission are used. If any one of thetransmission for example transmission via landline is intercepted, then the facts transmitted with the aid of Internet and mobilephone phone will reach agreement of two out of three will take location therefore boosting the security.	Use of printed voter verified paper information through which person can check if his/her vote has been counted.

IV. BLOCK DIAGRAM
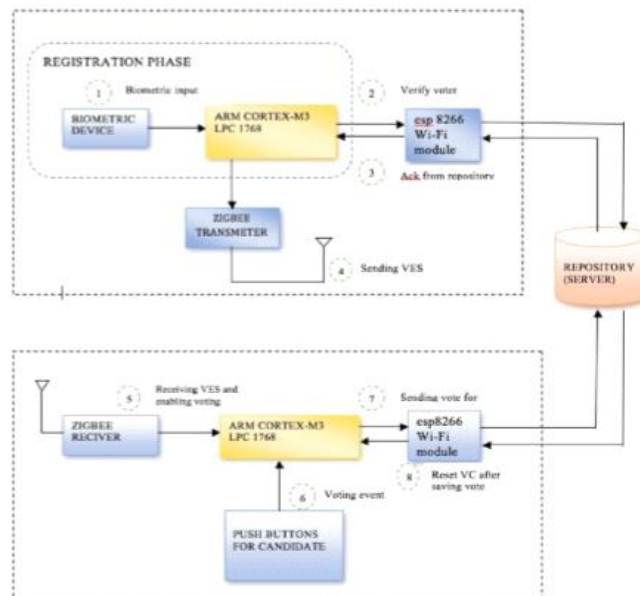
Fig. 3 Block Diagram of system

V.   SYSTEM OPERATION

A.   VOTER VERIFICATION PHASE:

The registration agent is responsible for voters admission and qualification during the registration phase. The registration agent includes of a Biometric system (R305) and a processor (ARM Cortex M3 LPC 1768). The server will keep two different repositories: Voter/ID repository: This database will have the listing of eligible voters which will be accessed at some point of the authentication procedure in the registration segment (i.e. to test if the voter is eligible to vote and once voter is accepted his title will be cut). Vote repository: This database will consist of the a number of parties and their corresponding votes and will be accessed for the duration of the vote casting section and the counting phase. As shown in the above figures, there are a variety of activities represented with the aid of E1 to E8. Once the registration segment starts, voters must discover themselves to the registration agent. In the tournament E1 the voter's fingerprint is obtained by way of Biometric device(BD). The event E2 represents the transmission of fingerprint enter to the processor. The processor now communicates with the voter's repository (via esp8266). (refer tournament E3 in fig). The server then verifies whether or not the voter can vote by way of querying the database maintained by means of the Electoral authority and sending a advantageous acknowledgement sign if he is eligible to vote and a terrible acknowledgement signal if not, to the processor (refer match E4). Event 5 represents the transmission of the allow sign from registration agent to the balloting supervisor so that the voter can solid his vote to the voting manager.

B. Voting

The vote casting section will consist of an Electronic vote casting laptop comprised of various buttons towards which the names of the respective parties alongside with their party symbols will be mentioned. The voter will solid his vote by means of pressing the button representing the favored party. The LED will blink making sure the voter that his vote has been casted.

C. Storage

The vote will be transmitted wirelessly to the server and will be saved (refer event 7 in fig.). Once the vote has been stored efficaciously the server will ship an acknowledgement sign to the Electronic Voting Machine which will reset the laptop and then the voter might also leave. Simultaneously the server will cut his name from the database consisting of eligible voters to prevent redundant voting malpractices.

D. Counting Phase

Only the election authorities will have access to the server. Once the elections have been performed effectively the election authorities will get admission to the vote repository to announce the result.
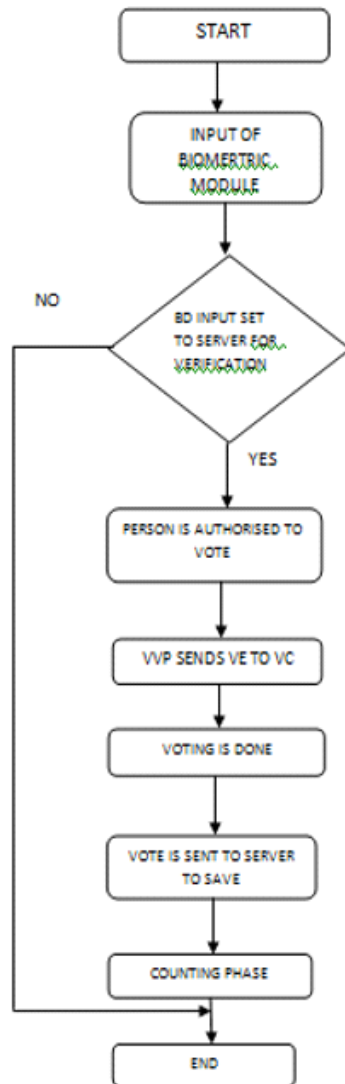
Fig. 4 Working of Flowchart.

VI.   RESULTS AND DISCUSSION

The result of vote casting is saved on net server and it is displayed on website.
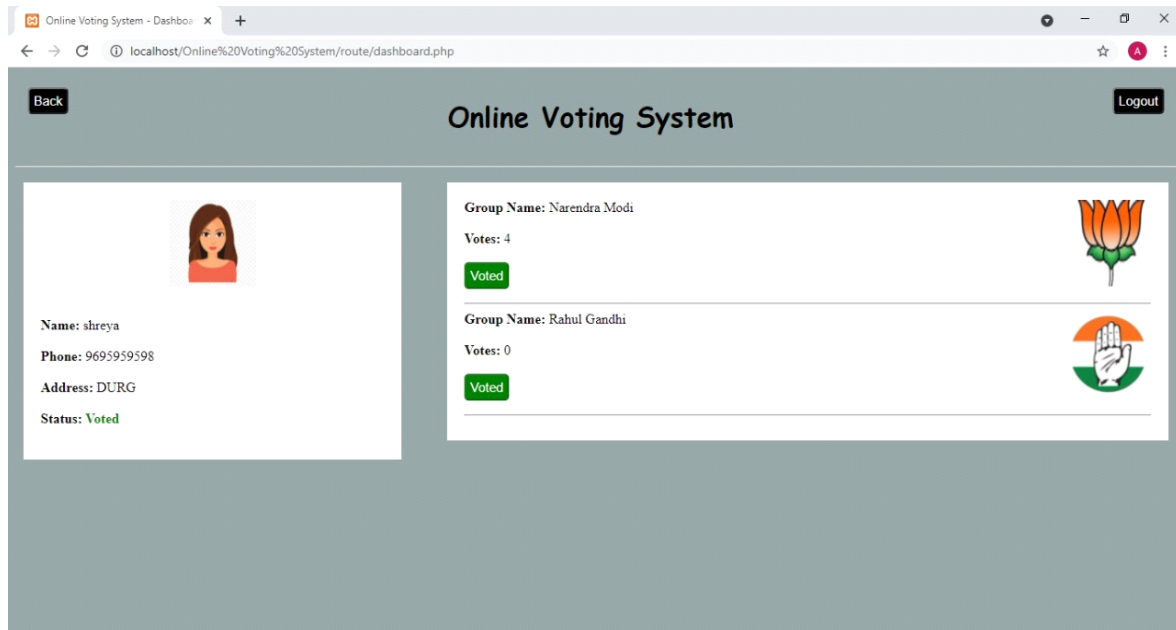
Fig. 5 Showing result after election

VII. CONCLUSION

This paper discusses the working standards of traditional EVM system and the a range of issues involved with the existing system. In the later part of the paper an electronic voting machine has been proposed which uses biometric authentication and the votes casted are stored on a central server. The key factors served by this machine are :

- Easy implementation
- Easy usage
- Use of a reliable wireless connection
- Keeps a take a look at on Rigging and different malpractices
- Flexibility to vote from any polling booth.

ACKNOWLEDGEMENT

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