ONLINE VOTING SYSTEM USING FINGER PRINT RECOGNITION

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ABSTRACT-Voting is an important process in which people can choose their own leader for the government. The device which we use for the voting process is an electronic voting machine with highly secured steps such as having unique number aadhar card, biometric of face recognition with IOT. This had a secured database saved system. Voting was an important role in our democratic system as we have the right to select our leader for the government.

INTRODUCTION

Voting for a leader is the most important process which carries the essential result of the opinion of the people in selecting their leader for the government [1]. Of course, the voting machine is a mechanical device but more commonly designed by an electronic substance so it is an electronic voting machine. The process of voting is proposed that was highly secured and a technology of face recognition. It was designed for different uses for long usage, for security purpose, for high efficiency and accuracy of votes and many. This may be useful in more or less to all voters. This electronic machine is also called as e-voting, which mean it can do two different types of voting such as counting a number of votes and casting which is meant that selecting of their right leader [2, 3]. Some of the examples of the electronic voting technologies are optical scan voting, punch card, and voting kiosks. It also includes some of the different types of networks such as the usage of the telephonic mobile network, private use of a computer network, and Internet social media network. As for how the e-voting system involves DRE voting system (Direct Recording Electronic voting system) [4]. Now in our world of different technology, many old methods of this voting system are hence being changed to match the present situations in other fields of life. The voting involves the secret listing of votes and secret voting boxes to these electronic machine methods. The research community work on the technology of the voting machine without IOT from the last 15 years was increasing in every year as shown in Fig. 1 and data were taken for this graph from the well-known site from Science Direct
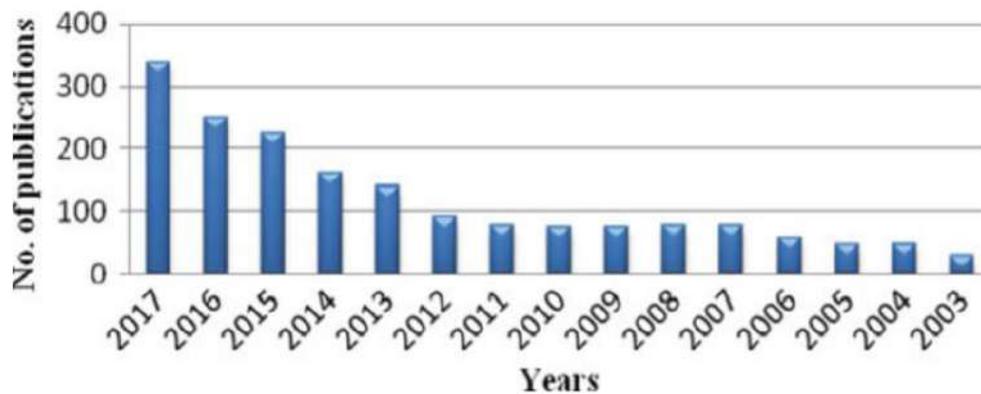
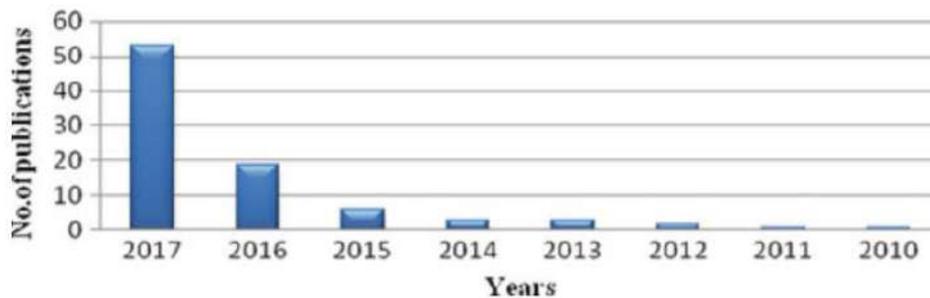**Fig. 1** Smart voting machine related field for the last 15 years without IOT

Fig. 2 Smart voting machine related field for the last 8 years with IOT

EXISTING SYSTEM

This paper says that advance method of voting system in Indian Election commission. The casting a ballot framework is overseen easierly as every one of the clients need to login by UIDAI (Unique identification authority of India) and secret phrase and snap on individuals ideal possibility to make their choice This shows that highly secured secret key is affirmed in advance to each individual acknowledged in the fundamental database of ECI. The additional component of this device is the elector can guarantee that his/her vote has polled to the address hopefully The votes will be done normally, as such saving a huge time and facultative ECI to pronounce the result at between times a concise period.

LITERATURE REVIEW

"A Novel Electronic Voting Machine Design with Voter Information Facility Using Microcontroller" was proposed by "D. Ashok, in 2011" in this paper and the votes are calculated by using the keys given and the result is shown on the LCD screen.
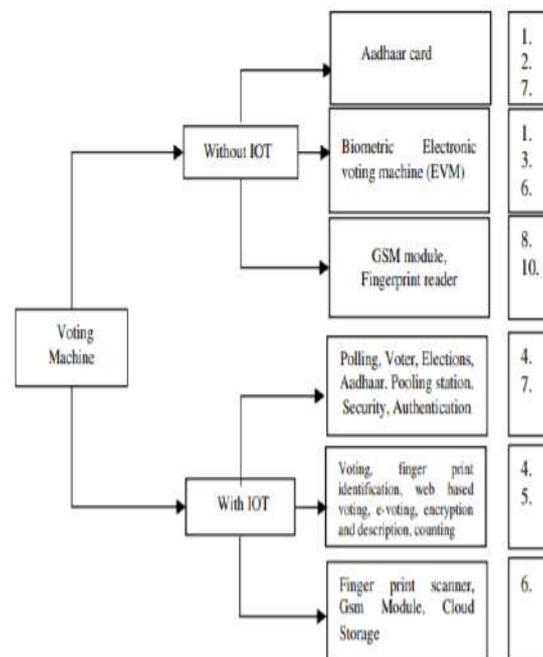
Fig. 3 Some of the techniques used the voting machine

The design of electronic voting machine explained in this paper is secured and accurate and it can be improved in the future for the power savings. The voting machine design explained in this system is accurate, clearly displays the message and highly secured [1]. "Development of Electronic Voting Machine with the Inclusion of Near Field Communication ID Cards and Biometric Fingerprint Identifier (Near Field Communication), fingerprinter Arduino" was proposed by "Syed Mahmud in 2014" as we are using NFC cards as the voter's ID card and it allows each one by one card to carry some data which can be used to link and identify the owner of a card. It is also simple technology and quick technologies that can identify the correct owner. The advantage of this technology is by using fingerprint so they cannot cheat by duplicate voting [5]. "Electronic Voting Machine EVM system" was proposed by "Kumar in 2012" that has to be studied further and should reach all the levels of different communities, so that the confidence of the voter will be increased and official's election will make more involvement in using the secured EVMs for conducting faster, secure, accurate voting elections as shown in Fig. 3 [6]. "Online Voting System for India based on AADHAAR ID" was proposed by Agarwal in 2013 and it is more secure and highly efficient than the regular voting system. Invalid votes and time are taken in announcing the results can be removed easily. A common AADHAAR identity card is an important component used in this paper as we can identify the duplicate voting persons. It is used for the identifying and helps in the verification of both voters and candidates [3]. "Secured Electronic Voting Machine using Biometric" is highly secured voting machine and which reduces manpower efficiently makes the work completed on time. In this machine, they introduced some new topics and that is implemented by ARM processor. Due to adding the implementation of aadhar card system, it can be improved in the future by the adding of identifying of votes in the system for more secured polling [7]. "Smart voting" can identify the people trying to vote the second time is not being allowed as once the fingerprint is scanned, authentication the login is being locked for the user. The casted vote is being updated at each instance of time in the database. The election results can be published on the same day with high accuracy and efficiency [8]. "Microcontroller Based Smart Electronic Voting Machine System" is the fast method of conducting the elections and accurate counting. It reduces the strength of frauds on large scale. Because its code is not accessible and cannot be changed once it is scanned [4]. "Electronic Voting Machine Using Internet" is a method of voting through the Internet without going to the voting booth. It is fast to access, high insecurity. The online voting process does not create any error. Even soldiers from abroad can participate in elections [9]. "Advanced Secure Voting System with IoT" explained about the biometric process and recognition of the person will be easier and the duplicate person can be identified [10]. "IOT Based E-Voting System" is in this and the system is used for long distance. It saves time, money, and effort to reach the polling booth. Display of result will be easy and quick. It gives high data security [11]. "Advanced Electronic Voting Machine using the

Internet of Things (IoT)" is here scanner and is used to reduce or remove the unwanted human error. It is capable to handle multiple modules in various centers [12]. "Distributed Voting System Using IOT" is in this and it increases voting percentage. It reduces the errors of duplicate voting. It reduces manpower. It reduces cost [13]

SMART VOTING MACHINE BASED ON FINGER PRINTS AND FACE RECOGNITION Bogus (fake) voting is still major drawbacks in the Election. In AADHAR CARD the Government has all the data Base for us including finger print and Retina. Biometric Finger print devices and Web Camera are used in the Electronics Voting Machine for voter verification. We have designed a Smart Voting Machine where there is no need for the user to carry his ID which contains his required details. The person at the polling booth needs only to place his Finger in finger print scanner and capture the face identity in web camera at the counter of the polling booth, thus allowing the acquisition of an on-spot Fingerprint and Face from the voter which serves as an identification. This data is passed on to the controlling unit for the verification. The controller fetches the data from the reader and compares this data with the already existing data stored during the registration of the voters. If the data matches with the pre-stored information of the registered fingerprint and Face, the person is allowed to cast his vote. If not, a warning message is displayed on LCD and warns through the voice by this way, the person is barred from polling his vote. The vote casting mechanism is carried out manually using the keyboard. LCD is used to display the related messages, warnings and ensuing results. Biometrics is the science and technology of measuring and analysing biological data. Biometrics refers to technologies that measure and analyse human body characteristics, such as DNA, fingerprints, eye retinas and irises, voice patterns, face recognition and hand measurements, for authentication purposes. The field of biometrics was formed and has since expanded on to many types of physical identification. Among the several human fingerprints and face recognition remains a very common identifier and the biometric method of choice among law enforcement. These concepts of human identification have lead to the development of fingerprint scanners web camera that serves to quickly identify individuals and assign access privileges. The basic point of these devices is Election Commission. According to Election Commission statistics, there were 1,378,352 EVMs in use in July 2009. Of these, 448,000 were thirdgeneration machines manufactured from 2006 to 2009, with 253,400 from BEL and 194,600 from ECIL. The remaining 930,352 were the second-generation models manufactured from 2000 to 2005, with 440,146 from BEL and 490,206 from ECIL. (The first generation machines are deemed too risky to use in national elections because their 15-year service life has expired, though they are apparently still used in certain state and local contests.) In the 2009 parliamentary election, there 9were 417,156,494 votes cast, for an average of 302 votes per machine.

BIOMETRIC BASED ELECTRONIC VOTING SYSTEM USING AADHAR This paper looks at arrangement with respect to the electronic methodologies and advancements towards electronic information stockpiling and transmission. Unique mark gadgets for casting a ballot machines and diverse existing character archives are referenced and implemented amid this venture. The client should demonstrate his voter ID at whatever point he appears to the stall to survey his vote. This is regularly a tedious strategy in light of the fact that the individual needs to verify the ID with the rundown he has ensure it as an approved card and afterward empower the individual to survey his vote. In this way, to evade this sort of problem, structured a unique mark on casting a ballot device and the card contains the detail of the elector. The individual at the stall demonstrates his Biometric. The Biometric peruser peruses the details from the database. The data is moved to the processing unit for the confirmation. The processor peruses DATA from the per user and contrasts this information and the officially present information. On off chance that the information matches with as of now put away data, the individual is permitted to survey his vote. If the process is not done, a text is displayed and along these lines the individual is not permitted to survey his poll. The surveying instrument completes physically utilizing the keys. LCD is utilized to show the text. Throwing a vote is a procedure by which the electorates assign their representatives. In present casting a ballot framework the elector demonstrate his ID at whatever point the independent elector moves to the corner to survey his/her poll. This procedure is a tedious strategy as the independent elector should examine the ID with the rundown, affirm it as an approved card and afterward empower the individual to survey his poll. Subsequently, to solve this type of issue, planned a unique mark found for the most part casting a ballot device in whatever place the independent elector has no necessities to forward that the ID contains the whole details of the elector. Casting a ballot is to allow voters to practice their entitlement to express their decisions with respect to explicit issues,

things of enactment, native activities, sacred corrections, reviews or potentially to choose their administration and political delegates. Innovation is being utilized extra and more as a device to help voters to cast their votes. To allow the activity of this right, the dominant part casting a ballot frameworks around the globe incorporate the accompanying advances: national distinguishing proof and validation, casting a ballot and recording of votes cast, vote tallying, distribution of race results. Voter recognizable proof is required amid two periods of the constituent procedure: first for voter enrollment in order to decide the directly to cast a ballot and in this manner, at casting a ballot time, to enable a subject to practice their entitlement to cast a ballot by confirming if the individual fulfills every one of the necessities required to cast a ballot (verification). Security could be a heart of e-casting a ballot strategy. So the necessity of planning a safe e-casting a ballot framework is extremely essential. Normally, components that guarantee the security and protection of a decision are frequently tedious, costly for race directors, and badly designed for voters. There are totally unique dimensions of ecasting a ballot security. So genuine measures ought to be removed to keep it from open space. Likewise, security ought to be connected to conceal cast a ballot from attention. There's no estimation for satisfactory security level, because of the degree relies upon sort of the data. A fitting security level is dependably a trade off among ease of use and quality of security strategy. The verified e-casting a ballot procedure should be possible by connecting the casting a ballot machines with the Aadhar, an Indian resident distinguishing proof information base with a one of a kind recognizable proof number for each native. The UIDAI on voting machine results in verified e-casting ballot procedure On account of no something like two voter's data can arrange as this structure uses sensor. Biometrics is the science and innovation of estimating and breaking down natural information. In data innovation, biometrics alludes to advancements that measure and examine human body qualities, for example, DNA, fingerprints, eye retinas and irises, voice designs, facial examples and hand estimations, for verification purposes. Amid this paper utilized thumb impression with the end goal of voter distinguishing proof or confirmation. As the thumb impression of every individual is selective, it helps in augmenting the precision. Aadhar database is made containing the thumb impressions of the considerable number of voters in the body electorate. Unlawful votes and reiteration of votes is checked for in this framework. Consequently if this framework is used the decisions would be honest and free from apparatus

ELECTRONIC VOTING MACHINE BASED ON BLOCKCHAIN TECHNOLOGY AND AADHAR VERIFICATION Increasingly digital technology in the present helped many people lives. This paper describes an electoral system for Indian election on blockchain technology and aadhar verification. The aspect of security and transparency is a threat from still widespread election with the current system. Some of the problems that can occur in the current system are with an organization that has full control over the database and system, it is possible to tamper with the database of considerable opportunities. The proposed system is mainly designed for our country based on Aadhar verification where the details of the persons who are above 18years are extracted from aadhar card database since it had become mandatory in the present scenario. To ensure more security, finger print of voter is used as the main authentication resource. The system will allow the voter to vote through his finger print. As soon as they cast their vote, blockchain technology comes into existence which is integrated inside EVM. By adopting Blockchain in the distribution of databases can reduce one of the cheating sources of database manipulation. This research discusses the recording of the voting result in blockchain algorithm from every place of election. Hence the main challenges of the current system of the voting process such as security, authentication of voters, protecting voted data are solved by blockchain technology. Also, 100% voting can be achieved because in this way, nobody will be left out without getting their right to vote which fails in the existing system. A. Issues that block-chain is going to solve with the current voting system are as follows: Transparency, Reliability, accessibility, security, and auditability. Many of us believe that in-person voting using paper ballots is the only secure and guaranteed way to cast a vote. Although the process is generally run without incident by dedicated elections officials, any manual human-based process will lead to errors and mistakes. The current voting process is relatively transparent to elections professionals, but how do the common people know their vote was cast as deliberated and counted as cast? Recent surveys say that most of the people actually don't trust the system. We've become adapted to ordering a product online, tracking our ordered status; we know exactly when it's been shipped and when it will arrive; this is the kind of transparency we must be entitled, and therefore we can accomplish high secured system with the blockchain. Also with blockchain, we have the ability to "examine" every individual vote in real time, which is something very difficult, if not impossible, to do in today's process. B. The blockchain is

beneficial in voting by following ways: Blockchain technology will make the voting more open that is it will be very difficult to say that administrator changes the voting result when the common people can only verify this information and provides all of the characteristics you would want in a policy that is possibly the most important part of a democratic society; it's fault-tolerant, the past cannot be changed, present hacking cannot be done, access to the system cannot be altered, each node that has access can see the exact same results, and every vote can be unquestionably tracked to its source without sacrificing a voter's vote anonymity. End to end verifiable voting systems will be provided which gives the voter the ability to verify if their vote is correctly recorded and correctly counted, for instance, it can even be detected by the voter and caught before the election is over if a ballot is missing. Securities of the Aadhar Based E-Voting system The main goal of a voting process is to ensure the privacy of the voters and of the votes. A proposed voting system satisfies the following requirements, ¬ Eligibility: only votes of legitimate voters shall be taken into account. ¬ Anonymity: votes are set secret. ¬ Accuracy: cast ballot cannot be altered. Therefore, it must not be possible to delete ballots nor to add ballots, once the election has been closed. ¬ Fairness: partial tabulation is impossible. ¬ Vote and go: once a voter has cast their vote, no further action prior to the end of the election. ¬ Public verifiability: anyone should be able to readily check the validity of the whole voting process

PROPOSED SYSTEM
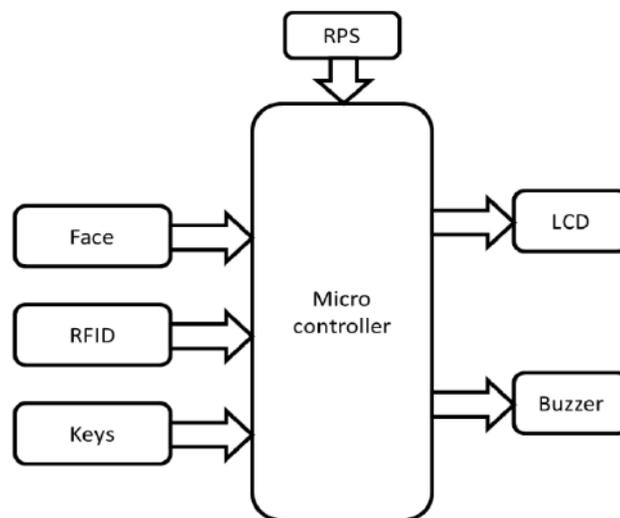
In order to avoid the polling of wrong votes we want to design a voting machine using face verification and adhar. When a person want to poll his vote the details of the person has to be searched using adhar number and after face has to be recognised if the face matches then the person should be allowed to vote, if face does not match then the buzzer will be buzz and the message will be sent to the police station. Since some of the persons have many votes at different places if that person is voted at one places has to be blocked and if he tries to vote at other place buzzer will buzz and message should be sent to police station. The use of technology has become common place at this point in helping to meet human needs. The increasing use of technology has brought new challenges in the process of democracy as most people today don't trust their governments, making elections very important in a modern democracy. Elections have a great power in determining the fate of a nation or an organization. The voting system in present days requires a manual registration with a voter id with which voters are allowed to vote. The ballotters can vote only when they provide the voter id in the pooling booth. The major drawback of voting is bogus votes. To overcome those we use many authentication standards. Aadhar is unique identification authority of India which every personal should be enrolled in it. For every governmental action performed it requires the Aadhar card provided with biometric authentication which assures that the person has all the right to perform the required action. The proposed process reduces the whole man power in the polling booth and also reduces the man power used in the counting process. All the action performed is automated. Once authentication is done, the next problem arises is the issues data manipulation, security, and transparency of each vote. These issues are solved by Blockchain technology. Blockchain technology is one solution that can be used to reduce the problems that occur in voting. The blockchain is distributed, unchangeable and transparent ledger who can't deny the truth.

Consists of several blocks that are linked to each other and in sequence. The block is related because from the previous hash used in the next block making process, the attempt to change the information will be more difficult as it has to change the next blocks [6]. The database was made public, acquired by many users. The circumstances of cheating, the database owned by users who do the cheating will be different from the database owned by other users. Then the existing database on the user is not valid.

CONCLUSIONS

In India, the electronic voting machine was not secure at present days. They are many security problems. So, this design of the electronic voting machine was completely based on security purpose to show the original result to the people. This system is a small contribution to a fair election. The review proposed in this paper was voting machine with highly secured. We can secure the votes using some technologies by using IOT in the voting machine and it can develop a smart system of detecting an incorrect match of biometric at booth and biometric in aadhar card, it can trigger alertness and can communicate to the authorized person. A country with less voting percentage will struggle to develop their country by choosing the right leader. This is mainly due to the failure of the security level in the present voting system.

REFERENCES

[1] 1. Kumar DA, Ummal Sariba Begum T (2011) A novel design of an electronic voting system using a fingerprint. Int J Innov Technol Creative Eng 1(1):12–19

[2] 2. Jacobi RP, Trindade F, de Carvalho JPA, Cantanhede R (2000) JPEG decoding in an electronic voting machine. In: IEEE 13th symposium on integrated circuits and systems design, pp 177–182

[3] 3. Agarwal H, Pandey GN (2013) Online voting system for India based on AADHAAR ID. In: 11th international conference on ICT and knowledge engineering (ICT&KE), pp 1–4

[4] 4. Ali SM, Mehmood CA, Khawja A, Nasim R, Jawad M, Usman S, Khan S, Salahuddin S, Ihsan MA (2014) Micro-controller based smart electronic voting machine system. In: IEEE international conference on electro/information technology (EIT), pp 438–442

[5] 5. Hasan SM, Anis AM, Rahman H, Alam JS, Nabil SI, Khalilur Rhaman M (2014) Development of electronic voting machine with the inclusion of near field communication ID cards and biometric fingerprint identifier. In IEEE 17th international conference on computer and information technology (ICCIT), pp 383–387

[6] 6. Kumar DA, Ummal Sariba Begum T (2012) Electronic voting machine—a review. In: IEEE international conference on pattern recognition, informatics and medical engineering (PRIME), pp 41–48

[7] 7. Anandaraj S, Anish R, Devakumar PV (2015) Secured electronic voting machine using biometric. In: IEEE international conference on innovations in information, embedded and communication systems (ICIIECS), pp 1–5

[8] 8. Kalaiselvi, Fabio Trindade VK, de Carvalho JPA, Cantanhede R (2017) Smart voting. In: Second international conference on computing and communications technologies (ICCCT'17), pp 1–10

[9] 9. Gawhale S, Mulik V, Patil P, Raut N (2017) IOT based E-voting system. Int J Res Appl Sci Eng Technol (IJRASET) 5(5)

[10] 10. Nithya S, Ashwin C, Karthikeyan C, Ajith Kumar M (2016) Advanced secure voting system with IoT. Int J Eng Comput Sci 5(3):33–37

[11] 11. Devgirikar SJ, Deshmukh SA, Paithankar VP, Bhawarkar NB (2017) Advanced electronic voting machine using internet of things (IOT). In: 2nd national conference recent innovations in science and engineering (NC-RISE 17), vol 5, no 9, pp 83–85

[12] 12. Santhosh M, Kavitha S, Keerthana R, Suganya L, Krishnakumar S (2016) Electronic voting machine using internet. Int J Commun Comput Technol 4(2)

[13] 13. Channakeshava RN (2017) Distributed voting system using IOT. Int J Innov Res Comput Commun Eng 5(2)

[14] 14. Khan MA, Salah K (2018) IoT security: review, blockchain solutions, and open challenges. Future Gener Comput Syst 82:395–411

[15] 15. Coulter R, Pan L (2018) Intelligent agents defending for an IoT world: a review. Comput Secur 73:439–458.