JETIR.ORG ISSN: 2349-5162 | ESTD Year : 2014 | Monthly Issue
JOURNAL OF EMERGING TECHNOLOGIES AND INNOVATIVE RESEARCH (JETIR)
An International Scholarly Open Access, Peer-reviewed, Refereed Journal

ONLINE VOTING SYSTEM IN MOBILE APP USING FINGER PRINT AND QUICK RESPONSE (QR CODE)

[1] M.Keerthika, [2] Dr.A.Senthil Kumar

[1] Research scholar, [2] Assistant Professor
Department of Computer Science,
Tamil University, Thanjavur, Tamil Nadu, India

Abstract: Two ways security based voting project is an application where the user is recognized by his Quick Response (QR code) and finger pattern. In view of the fact that the Quick Response system and finger prototype of each individual creature is dissimilar, the elector can be without difficulty genuine. The system allows the voter to vote through his Quick Response code and finger pattern. Two way securities are worn to exclusively recognize the client. The two ways security minutiae features are different for each human being. Two way securities are used as an authentication of the voters. Elector is able to take part in an election and has the scheme will not permit the applicant to take part in an election for the next time. The scheme will permit management to insert the applicant given name and applicant photo that are designated for the voting. Management merely has to correct to add applicant name and photo that are designated. Management determination records the electorate name by bear out elector. Management will validate the user by verifying the user's individuality evidence and after that management will record the elector. The numeral of applicant additional to the scheme by the direction will be mechanically removed following the conclusion of the voting. The electors register by charitable the individual information which enclose the Quick Response code. On one occasion the voting meeting and occasion is announced, the elector search out announcement via SMS. Merely after that the elector is authorized to go into the poll and scan the Quick Response code. If the elector is validate after that, legal to go into the census. If not, after that the app exits mechanically as of the census.

Index Terms **- Quick Response system, finger prototype, Two ways security, Minutiae features.**

I. INTRODUCTION

In our development the existing system contain worn fingerprint intended for the reason of elector recognition or verification. As the thumb sense of each personality is distinctive, it helps out in minimize the blunder. A catalogue is shaped and it contains the fingerprint images of all the electorate as necessary. Against the law votes and replication take part in an election is chequered in this scheme by means of precise code. Therefore by means of the request of this fingerprint bottom Electronic Voting Machine scheme selection might be completing pale and gratis from ropes. Additional that the voting would no longer a boring and costly career. A paper-based selection the people on the electoral roll obtain a vacant ballot and use a pen or a marker to point towards his desire to take part in an election intended for which applicant. Give count vote is an occasion and work over whelming procedure, other than it is simple to produce paper ballot and the ballot be able to be reserved for bear out, this kind is still the most common way to vote. Handle selection mechanism is weird kit, and every handle is assign for a matching applicant. The elector pulls the handle to poll intended for his preferred applicant. This kind of voting mechanism can calculate awake the ballot mechanically. Since its border is not user-friendly sufficient, charitable number of tuition to electorate is essential. As the crow flies recording electronic selection mechanism. This type, which is shortened to Direct Recording Electronic, integrates with upright, handle monitor, or button for the elector push to census. A number of them put down in vote records and take part in an election is extremely rapidly. Other than the previous Direct Recording Electronic with no remains selection accounts are doubt concerning its correctness. The elector uses tinny hole-punch to cuff a crack on the empty ballot. It is able to add up votes repeatedly, but if the voter's puncture is unfinished, the consequence is almost certainly strong-minded wrongfully. Voting is a broad and democratic way of making decisions. For centuries, South Africa has used the popular paper-based voting system, which does not provide the desired combination of accessibility and efficiency. Missing ballots, invalid ballots and incorrect numbers are some of the challenges associated with paper-based voting.

II. PROBLEM DESCRIPTION

In elections voters cast their votes by simply depositing their ballots in sealed boxes distributed across the electoral circuits. at what time the ballot vote era ends, all these boxes are unlock and take part in an election are count by hand in attendance of the authorized officials. The voter gets a blank ballot and uses a pen or a marker to indicate he want to vote for which candidate. Hand-

counted ballots is a time and labour consuming process, but it is easy to manufacture paper ballots and the ballots can be retained for verifying and this type is still the most common way to vote. Switch engine is peculiar kit, and every handle is assigned for a parallel applicant. The elector pulls the switch to opinion poll for his much-loved contender. This class of ballot vote mechanism can tot up up the ballot repeatedly. Since its border is not user- responsive enough, open-handed a few teaching to constituency is compulsory. This research work suggests "client-server web-enabled software" structural design for the scheme. On the customer surface it contains a finger print image in addition to Quick Response a GUI that believes voter's id numeral, give a line to take part in an election and display confirmation, status and error messages. The GUIs determination merely acts on proceedings as of the attendant and criticism of the elector with no some additional dispensation. Servers are located at distant location as of the census booth. They are second-hand for transport out all the dispensation labour such as image dispensation, transfer information flanked by the customer and the file; generate statistics, distribution mail to electorate, etc. Therefore mobile application can overcome time consuming and casting their vote at any circumstance.

III. PROPOSED ALGORITHM

Bruce Schneider intended blowfish in 1993 as a quick, gratis option to obtainable encryption algorithms. given that after that it has been examine significantly, and it is gradually ahead receipt as a physically powerful encryption algorithm. The Blowfish algorithm has a lot of compensation. It is apposite and well-organized for hardware completion and no certify is requisite. Blowfish is a symmetric encryption algorithm, connotation that it uses the identical clandestine key to together encrypt and decrypt mail. Blowfish is in addition a block secret message, denotation that it divides a memorandum up into permanent measurement lengthwise block all through encryption and decryption. The lump measurement lengthwise for Blowfish is 64 bits; mail that isn't a many of eight bytes in amount must be pad. The indispensable worker of Blowfish algorithm embrace counter hit upon, toting up and XOR.The table include four Sboxes and a P-array. Blowfish algorithm which is stronger and more rapidly in statistics storing put side by side to other algorithms. It is greatly held since it has longer key duration. Blowfish is a nobody base on Feistel rounds, and the propose of the F-function used amount to a overview of the ethics used in DES to afford the alike defense with better alacrity moreover competence in software. Blowfish is a 64 bit block cipher and is not compulsory as a surrogate for DES. Blowfish is a speedy algorithm and be able to encrypt information on 32-bit microprocessors.

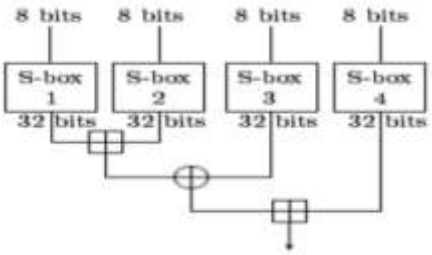


Figure 1: Blowfish Algorithm

IV. SYSTEM DESIGN

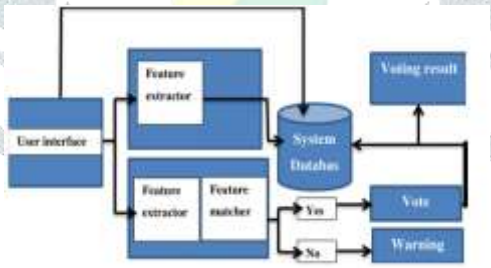


Figure 2: System Architecture

System structural design is the theoretical mock-up that defines the arrangement, performance, and more view of an organism. A scheme structural design knows how to consist of scheme mechanism and the sub-systems urbanized, that determination service jointly to put into practice the generally classification.

Validation module

A validation component is connected so as to collect consumer in order such as a client ID and password, and compare the in order next to entry in a catalogue. If a consumer provides in sequence that get together the verification criterion, the client is validated in addition to presumptuous the suitable rule arrangement, decided right of entry to the request reserve. If the consumer provides in order that do not meet the verification criterion, the consumer is not validate and deprived of right of entry to the request reserve.

Register module

Voter catalogue (or staffing) is the obligation that a being or else entitled to take part in an electionlist (or enrol) on an electoral roll previous to the determination be allowed or legal to take part in a ballot. Such enrolment may be routine or might need request being complete by the entitle detector. The system main register vary flanked by jurisdiction. A number of jurisdictions have "vote day register" and others do not need register, or may need manufacture of proof of right to take part in an election at occasion of vote. In a number of jurisdictions register by folks of vote age is required, as in most it is not obligatory. In jurisdiction any where list is unpaid, an attempt may exist made to give confidence people or else entitled to vote to record, which is the name of the elector list force.

View member

It depends on which rights (also called permissions, user groups, bits or flags) are assigned to accounts. This is determined by whether the editor is logged into an account, and whether the account has a sufficient age and number of edits for certain automatic rights, and what supplementary civil rights have been assign by hand to the explanation.

Voting module

Vote is a means for a collection such as a gathering or voters, in direct to make a communal choice or articulate a view, more often than not next negotiations, and debate or vote campaign. Democracy chooses by ballot holders of high place of work by vote. People of a pure present by a chosen bureaucrat are name "ingredient", and people's ingredient who cast a vote for their selected applicant is name "voters". Readily available are dissimilar systems for collecting votes.

Result module

An effect (also called upshot) is the final result of a series of performance or proceeding shuttered qualitatively or quantitatively. Probable marks comprise benefit, difficulty, increase, wound, defeat, worth and conquest. There might be a variety of likely result connected with an occasion depending on the direct of sight past coldness or significance. Attainment no consequence can denote that performance is incompetent, unproductive, and meaningless or faulty.

V. SYSTEM IMPLEMENTATION

Client End

Front page-Using web application for the user to interact scanning the Quick Response code and recognize the finger print image then allow the authorized user image respectively. This module encrypts the image to apply blowfish algorithm with a key.Encrypted Quick Response codes, which are not very common, have a few implementations.For example, an Android application manages encryption and decryption of Quick Response (QR-codes). To view the encrypted data the system perform de-cryptography, and the password for login is obtained by scanning theQuick Response code using smart phone. To avoid hackers to find both the shares and session password proper use of Quick Response technique is provided so that there will be secure environment for voter to cast his vote.

Server End

Module to provide interface that allows user to enter a key to decrypt the image. Module to create name and voter id then register the voter detail and add the candidate detail of the political party. Function to remind the SMS for voters and election details to encrypt process.

Functionalities

User Details -This is the first module of the application wherein if the application is installed for the first time and the voter has to register and finally login process is done. Candidate List -This unit contain the applicant list of party inside layer up in the vote according to the region and metropolis. It represents the applicant catalog unit. It is second-hand to attentive the voters concerning the party and the candidate to whom the take part in an election has to be casted. Take part in an election cast- Once the vote date is announce the elector can clack the vote cast key. To be reminiscent the SMS determination be send to the elector. Following toward the inside the vote link will be retrieve from the movable and store in the vote side file. After toward the inside the elector id, the elector has to scrutinize the rapid reply code. If the elector is validate then merely vote casting can exist complete. also the app live without thinking.

QUICK RESPONSE (QR CODE)

A Quick Response code is a type of matrix bar code or two-dimensional code that can store data information and designed to be read by smart phones. QR stands for "Quick Response" indicating that the code contents should be decoded very quickly at high speed. The code consists of black modules arranged in a square pattern on a white background. The information encoded may be text, a URL or other data. The Quick Response code was designed to allow its contents to be decoded at high speed. The popularity of Quick Response codes is growing rapidly all around the world. Nowadays, mobile phones with built-in camera are widely used to recognize the Quick Response Codes. Quick Response Codes are created by the Toyota subsidiary Denso Wave in 1994, and was initially used for tracking inventory in vehicle parts manufacturing. The idea behind the development of the Quick Response code is the limitation of the barcode information capacity (can only hold 20 alphanumeric characters). While they are developed for tracking parts in vehicle manufacturing, Quick Response codes now are used in many other fields, from commercial tracking to entertainment, in-store product labelling, and in those applications that are aimed at Smartphone users. Users may open URL; receive text after scanning Quick Response codes. By using Quick Response code generating sites or apps, users can generate and print their own Quick Response codes for others to scan and use. The Quick Response code system consists of a Quick Response code encoder and decoder. The encoder is responsible for encoding data and generation of the Quick Response Code, while the decoder decodes the data from the Quick Response code.

Figure: Working of Quick Response (QR code)

VI. RESULT ANALYSIS

The proposed system is evaluated by the scheme and its presentation with the connected online voting systems.

1. The analysis shows the schemes in X axis and the cycles in Y axis.
2. The other scheme encryption uses more no of cycles the proposed system uses to limit the running time cycle of the application to below 50000.
3. The bits used to 256 bit group combination and the cryptographic process are executed using the Blowfish algorithm.

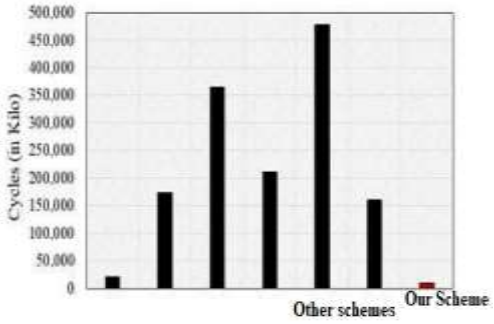
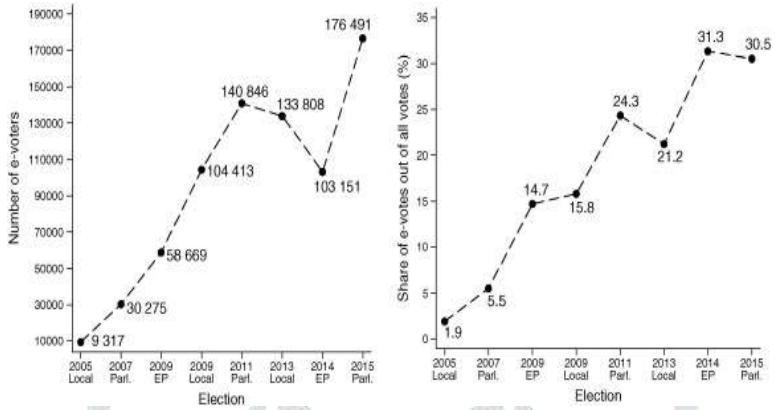


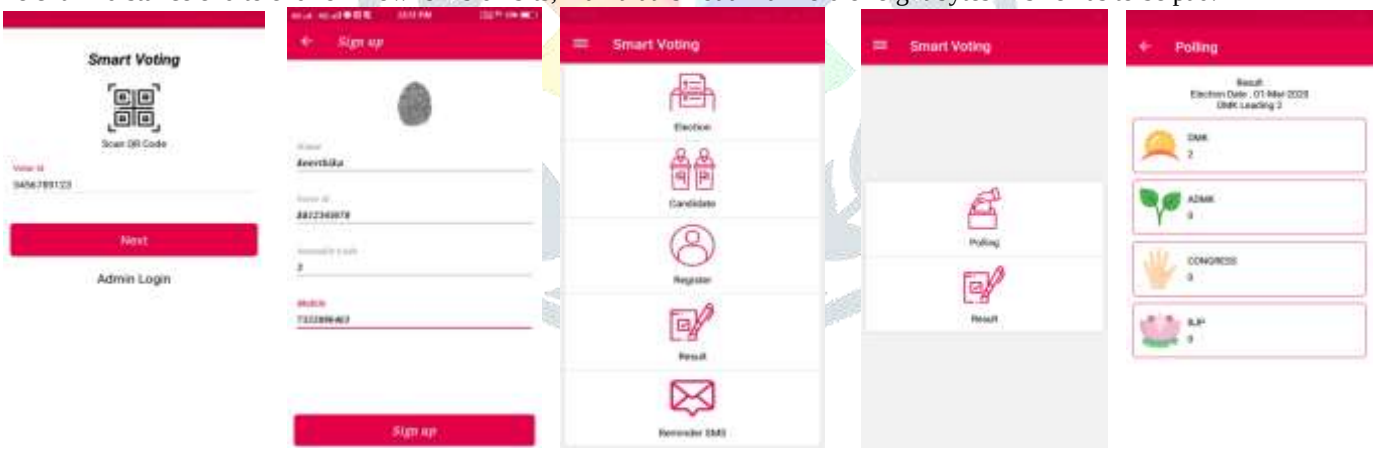
Chart 1: Existing scheme and proposed system assessment

Put into practice and evaluate the appearance of our future online voting system to the matching mechanism series schemes get hold of from side to side imitation. The system opinion of the functioning mechanism cycle (for instance, private and public process base on arc and combination, RSA process on elliptic).



Graph 1: No of E- Voting process ranges.

Here using blowfish algorithm is given better result compare than MD5, RSA, and diffie-hellman algorithms, Blowfish is a symmetric encryption algorithm, meaning that it uses the same secret key to both encrypt and decrypt messages. Blowfish is as well a chunk cipher; sense that it split a communication up into set distance end to end blocks throughout encryption plus decryption. The chunk distance end to end for Blowfish is 64 bits; mail that is not a manifold of eight bytes in size has to be pad.



VII. Conclusion and Future Work

All the study which had been reviewed show that, this system overcome most of the problems faced during the voting period by Electronic Voting Machine system. The competence of the organization depends winning the netting border, its usability. This motivation of course make sure and safer ballot vote system which is exceptionally much what is the compulsory for vigorous development of a upward realm. In this paper, the proposed online voting system using Quick Response code and fingerprint image which is better and faster than previous system. Online voting system using Quick Response code has provided chance to avoid invalid votes. In this structure no more than above-board registered someone can be cast your vote.

The future, having outlined the voting protocol and the basis for its operations, it is important to outline the direction this protocol can take. The Ethereum procedure has been recognized near the beginning in the labor as a possible applicant to turn out to be the stage for our vote procedure. Single of the reason for this is that Ethereum ropes creations of agreement, which are financial records which are, operate by the Electronic vote contraption. This agreement can be used to put into practice a vote scheme. Though, voter's anonymity and solitude are significant piece of any vote procedure and are not yet grip by Electronic vote mechanism dealings. This request can be improved in the prospect by between it with a person's Google explanation, so that if the portable have be stolen unluckily, then with the assist of the portable phone's Google site the lost portable can be track very with no trouble. These inside twist prevent the mistreatment of this request by a third being.

VIII. REFERENCES

1. Steven J. Anderson, A. C. M. Fong, Senior Member, IEEE, Jie Tang, Member, IEEE," Robust Tri-Modal Automatic Speech Recognition for Consumer Applications." IEEE Transactions on Consumer Electronics, Vol. 59, No. 2, May 2013.
2. Ben milner & Jonathan Darch." Robust Acoustic Speech Feature prediction From Noisy Mel- Frequency Cepstral Coefficients.(MFCC). IEEE Transaction on audio, speech, & language processing, VOL 19, NO 2, FEB 2011.
3. Hanady Hussien, Hussien Aboelnaga,. "Design of secured E-voting-voting system." Electronic and Communication Department. AAST, Cairo, Egypt 2013 IEEE.
4. Daniel petcu, Dan Alexandru stoichescu, The International Symposium on Advanced topics in electrical engineering; May 7-9, 2015. "A Hybrid mobile Biometric- based E- voting system."
5. Nidhi Desai 1 , Prof.Kinnal Dhameliya 2 , Prof.Vijayendra Desai 3"Feature Extraction and Classification Techniques for Speech Recognition" Department Of Electronics and Communication Engineering, C.G.P.I.T, Bardoli, Gujarat. Website: www.ijetae.com (ISSN 2250-2459, ISO 9001:2008 Certified Journal, Volume 3, Issue 12, December 2013).
6. Urmila Shrawankar Dr. Vilas Thakare," techniques for feature extraction in speech recognition system" Research Student, (Computer Science & Egg.), Professor & Head, PG Dept. of Computer Science, SGB Amravati University, Amravati. urmilas@rediffmail.com.
7. Firas I. Hazzaa, Seifedine Kadry, Oussama Kassem Zein,"Web-Based Voting System Using Fingerprint Design and Implementation",International Journal of Computer Applications In Engineering Sciences ISSN: 2231-4946.
8. M.Venkata Rao, Venugopal Rao Ravula, Pavani Pala."Development of Antirigging Voting System Using Biometrics Based on Adharcard Numbering".Amrita sai Institute of science and technology, Bathinapadu, Andhra Pradesh, INDIA. International journal of science egg. And Advance Technology, IJSEAT, Vol 3, Issue 2ISSN 2321-6905 February-2015.
9. Davide Balzarotti, Member, Greg Banks, Marco Cova, Viktoria Felmetsger. Kemmerer, Fellow, William Robertson,Fredrik Valeur, and Giovanni Vignar," An Experience in Testing the Security of Real-World Electronic Voting Systems." ieee transactions on software engineering, vol. 36, no. 4, july/august 2010.
10. Noha E. El-Sayed etc, "Face recognition as an authentication technique in electronic voting", in IJCSA, Vol. 4, No. 6, 2013.
11. V. C. Ossai, et. Al., "Enhancing E-voting systems by Leveraging Biometric Key Generation (Bkg)" in American journal of Engineering research (AJER), Vol. 2, Issue-10, pp. 180-190, 2013.
12. Prof. S.M. Jambhulkar, Prof. Jagdish B. Chakole, Prof. Praful. R. Pardhi "A Secured Approach for Web Based Internet Voting System using Multiple Encryption", 2014 International Conference on Electronic Systems, Signal Processing, and Computing Technologies,2014.
13. Sarankumar.V, Sasikumar.M, Ramprabu.K, Sathishkumar.A, Mr.S.Gladwin Moses Stephen,Department of Electronics and Communication Engineering, Akshaya College of Engineering and Technology, Coimbatore, March-2017 .
14. Aman Jatain, Yojna Arora, Jitendra Prasad, Sachin Yadav, Konark Shivam,Department of Computer Science, Amity University, Gurgaon, Haryana,Design and Development of Biometric Enabled Advanced Voting System May 2020.
15. Chandra Keerthi Pothina , Atla Indu Reddy, Ravikumar CV,Electronics and Communication Engineering, Vellore Institute of Technology, Vellore,Smart Voting System using Facial Detection April 2020.
16. Jayapriya J, Roghini M, Jayanthi S,Department of CSE, Agni College of Technology, Tamil Nadu, India, A Survey on Biometric Voting System using Iris Recognition Mar 2020.
17. Kennedy Okokpujie, Samuel Ndueso John, Etinosa NomaOsaghae,Charles Ndujiuba, Department of Electrical and Information Engineering,Covenant University, Ota, Ogun State, Nigeria, An Enhanced Voters Registration And Authentication Application Using Iris Recognition Technology February 2019.
18. Md. Mahiuddin,Department of Computer Science and Engineering International Islamic University Chittagong [6] (IIUC) Chittagong, Bangladesh,Design a Secure Voting System Using Smart Card and Iris Recognition February 2019.
19. PayalDeora,Abhishek kumar, Gayathri.M,Malathy.C,CSE, SRM Institute of Science and Technology, Chennai,Secured Voting System with Multimodal Biometric Technique using ANN,2018. [8] Saravanan.N, Pavithra.K, Nandhini.C,Dept. of MCA Priyadarshini Engineering College, vaniyambadi, Tamilnadu, India,Iris Based EVoting System Using Aadhar Database,April-2017.
20. Ali Fawzi Najm Al-Shammari, Sergio Tessaris" Vote Verification through Open Standard: A Roadmap", 978-1-4577-0953- 1/11IEEE2011.
21. Amir Omidi and Mohammad Abdollahi Azgomi, "An Architecture for E-Voting Systems Based on Dependable Web Services" 978-1-4244-5700-7/10 ©2009 IEEE
22. Amir Omidi, Saeed Moradi "Modeling and Quantitative Evaluation of an Internet Voting System Based on Dependable Web Services", 978-1-4673-0479-5/12/©2012 IEEE
23. Haijun Pan, Edwin Hou and Nirwan Ansari" Ensuring Voters and Candidates‟ Confidentiality in E-voting Systems" 978-1- 61284-680-4/11/$26.00 ©2011 IEEE
24. Seo-Il Kang and Im-Yeong Lee "A Study on the Electronic Voting System using blind Signature for Anonymity", IEEE 2006 International Conference on Hybrid Information Technology (ICHIT'06) 0-7695-2674-8/06
25. Chun-Ta Li, Min-Shiang Hwang , Yan-Chi Lai "A Verifiable Electronic Voting Scheme Over the Internet",2009 Sixth International Conference on Information Technology: New Generations Lazaros Kyrillidis, Sheila Cobourne, Keith Mayes, Song Dongy and Konstantinos Markantonakis" Distributed e-Voting using the Smart Card Web Server" 978-1-4673-3089-3/12@ 2012 IEEE.