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Secure Electronic Voting System Using NFC-Tag

Sayali Mokashi[1], Priyanka Wadkar[2], P.V.Mahadik[3]

[1]*Computer, NESGOI*
[2] *Computer, NESGOI*
[3] *Computer, NESGOI*

Abstract —*Voting is duty of every person of this nation. But people face so many problems such as fake voting, name not found dont know the exact place of poll dont have enough time etc.There is some political problems over the poling and proclivity of persons for not give his/he vote. deliberating all this problems we have to solve and come up with a resolution. A system with web-application as well as mobile application..mobile application is using NFC tags for verifying and voting. The poll will be counted accordingly hence the less deciet possibility.The web apps for arranging all voting related actions. managing date,time and area are some of its main features.It will make election easier and will increase voting percentage.Todays world is dem cratic world ,voting is pillar of construction of society. Conventionally polling is using manual work .voter faces so many problems like voting ,voting booth is away from home ,standing in queue etc. so overcome from this problems we develop this electronic voting system. There are two types of voting online voting and online voting . Electronic voting is online voting system. Peoples are able to vote from there mobile phone . this feature is very useful to people who are physically handicapped or unable to come at polling booth. This polling required minimum time ,also it decreases the manual work. This system increases the voting percentage. In electronic voting system information is handled digitally and con_dentially. The objective of this project is to create advanced E-voting system using near old communication with security.*

Keywords- *NFC, android, security, arduino sensor ,RFID reader.*

INTRODUCTION

Electronic polling is voting using electronic means to take care of the duty of doing and calculating votes. Confiding on the approproate utilization, e-voting may encompass a area of Internet services, from basic relocation to full-operation online voting through common connectable home appliences. Similarly, the degree of mechanization may vary from simple dutys to a complete result that includes voter filing & verification, poll input, local or precinct tallying, vote data encryption and transportation to servers, vote concentration and agenda, and polling authority. A valuable electronic-polling system must acheving most of these tasks while complying with a set of ideals initiate by regulatory figures, and many times also be able to deal successfully with strong requirements associated with security, accuracy, integrity, swiftness, privacy, auditability, accessibility, cost-effectiveness, scalability and ecological sustainability.

- e-voting which is physically supervised by representatives of governmental or independent electoral authorities (e.g. electronic voting machines located at polling stations);
- remote e-voting via the internet (also called i-voting) where the voter votes at home or without going to a polling station.

Many uncertantity found in martial polling tool, such as using a inbuilt authority password .Cases reported of tools making unreported, unlike errors. Key problems with e-polling are therefore the openness of a system to public problems from outside experienced , the making of an verifiable paper record of votes measures and a chain of data. Electronic polling method can speed the measuring of polls, reduce the money of paying workers who measures the polls manually and can provide advanced convenience for disabled voters, could facilitate erros and may not be fully a equietable. In addition, electronic voting has been critical as unrequired to publish . Several countries have cancelled e-voting systems or decided against a large-scale rollout, notably the Netherlands and the United Kingdom

Literature Survey

2.1 **Assimilation of non-functional requirements for electronic voting frameworks: A systematic mapping**
Author: S. Sepúlveda, Member, IEEE, M. Bustamante, and A. Cravero. "Assimilation of non-functional requirements for electronic voting frameworks: A systematic mapping".
This paper proposes a Today's democracy is the plan of ministry prevailing in the western world and voting is the pillar fundamental in the society. The Traditional voting framework uses the pen and page and the election is done mutually .so to reduce this man power, time and maintain the care of voting framework this new technique is introduced.

2.2 **Design a Secure Electronic Voting Framework Using Fingerprint Technique.**

Author: Sanjay Kumar, Manpreet Sing, "Design a Secure Electronic Voting Framework Using Fingerprint Technique".
This Paper represents the protected e-voting framework using fingerprint technique. The fingerprint is a biometric which is most widely worn to analyze the people. In this paper the mixture of biometric among electronic polling is require less manpower and save time of user.

2.3 Secured E-Voting Using NFC Technology

Author: Rutuja Nikam1, Monika Rankhambe2, Diksha Raikwar3, Atharv Kashyap4, "Secured E-voting Using NFC Technology ".
This paper represent the technology which involves the voting .Important concept of democracy is election. Here NFS Tag is used for providing security to e-voting framework. It Is Hardware Device in which voter Information Is stock and progress .This paper represent Framework Is executed on Android Phone.NFC Uses RFID Technology NFC Is Generated Technology which did information exchange. The advantage of NFC For the Validation and casting of vote. Application based on two verification OTP And voters contact number so that they can verify the voter.

2.4 E-Voting Framework for on Duty Person Using RSA Algorithm with Kerberos Concept

Author: Ms. Tanzila Afrin1, Prof.K.J.Satao2, "E-Voting Framework for On Duty Person Using RSA Algorithm with Kerberos Concept".
In Electronic polling framework in which election is stored, prepared as digital data .This framework is useful to people who are not able to come to voting booth due to the duty or they are physically handicapped. In this framework two phases first Application Control in which assimilation and verification are involved and in second phase voting process is done .Kerberos concept is used for network verification. It is Network verification Protocol which is work on 'Tickets' to allow connection Over No-Secure Way. It Act as Client Server Model and Provide verification To User And Server.

PREVIOUS WORK

The primary experience which serves as a base for this study is the usage of the e-polling box in Brazil, in 1996. As per , in 1985 an automated robotic records was made by the Tribunal Super Eleitoral of Brazil, and the e-voting was produced in 1995, and used by the first municipal voting, 1996, inside the nation. In 1989, on city of Brusque, Santa Catarina, Brazil, it was understood the first voting knowledge with microcomputers. The electronic ballot-box, at first called Electronic Vote Collector (EVC), had the goal of distinguishing the options for automation of the voting procedure, and for characterizing the important measures to its implementation, from the elections to be held in 1996, in more than fifty Brazilian cities. In is decided the FREE e-republic activity, created with open code, in Java language, for the operation of e-Voting frameworks. In is displayed a project of an e-Voting framework to be admittance by means of Wireless Application Protocol (WAP), Short Message Service (SMS) and Hyper Text Transport Protocol (HTTP). In is presented an e-Voting platform, pointed out with a Universal Modeling Language: The MobileUML (M-UML), from the same authors. This platform considers the proposals of Foundation for Intelligent Physical Agents - FIPA , to permit interoperability between agents which deal with diverse platforms. In this platform, the voters cast their votes on their personal computers, while a mobile pass close those machines and gather their put away votes, under the coordination of administration software working in a stationary server. In is our system of e-Voting frameworks and same as in , the authors proposed prerequisites for the activity and operation of eVoting frameworks. In it is presented a nearby e-Voting framework which wipes out physical ballot-boxes, decreasing expenses and efforts, and therefore being less time intensive. In it is present operations about e-polling by android phones, by SMS facility, focused group of people, where it is demonstrated the involving about the fall of Brazil inside e-Gov and Information Technology (IT) international classifications, in 2008. The procedure was finished with five targets: 1) identify the reasons behind the fall; 2) recognize conceivable actions searching for better execution on the following classifications; 3) detail on the discussion about technological subjects inside organizational situations; 4) test the SMS gadgets with distinctive provincial telephonic codes in numerous geographic areas; 5) assess performance and efficiency of diverse telephonic administrators over this assignment. In it is demonstrated a web based voting framework which requires the Physical Multiple Administration method, where the candidates are responsible for the fulfillment of the voting methodology, and the Identical Ballot Boxes procedure, which each ballot box inside the voting methodology is at the same time upgraded for each one submitted vote. In is introduced a portable form of the PMA/IBB e-voting framework, which was made for cell and PDAs.

PROPOSED SYSTEM

E-voting frameworks are gaining more and more popularity with the extensive utilization of computers and embedded frameworks. Security is considered as the fundamental issue ought to be evolved in such frameworks. We are providing a novel e-voting framework that delite the care prerequisites of e-polling . The proposed framework is implemented on an embedded framework which works as a voting machine. The framework utilizes NFC to store all conditions that agree to the principal of the legislature to check voter qualification. Near Field Communication (NFC) is one of the guaranteed innovations which permit information exchange between NFC-empowered gadgets and brilliant labels inside a short

separation. We have introduced another sort of a safe voting framework, to be specific NFC voting, and assessed the framework's ease of use in a race with an executable model. In addition to different methods, we see that NFC voting fulfills electronic voting prerequisites and further expands the subjective convenience of the proposed framework. The benefits of usage of NFC (Near Field Communication) tags for the validation and casting of a vote is being utilized in the proposed system. The proposed system basically simplifies the process of validation of an individual and casting of their vote. The users are being registered by creating new user in the application. During the process of registration, the users have to provide several essential details. A lot of different entries for the candidates participating in an election are generated. Every single new voter in the application is provided with some individual tag for him. The corresponding android mobile phone acts as a ballot box in our application system. The user must have to place his NFC tag near the mobile phone. The application then retrieves the data stored in the tag and the user is then verified along with his ward. The application is based on two way authentication- OTP code in the voters personal contact number so that voter can be verified genuinely with that as instant password is delivered on their devices. Once the authentication is done, the application displays all the candidates who are participating in the election from that ward. The user can tap on the person he wants to give his vote. His corresponding vote is then recorded in the application. Casted votes are counted and results are displayed.

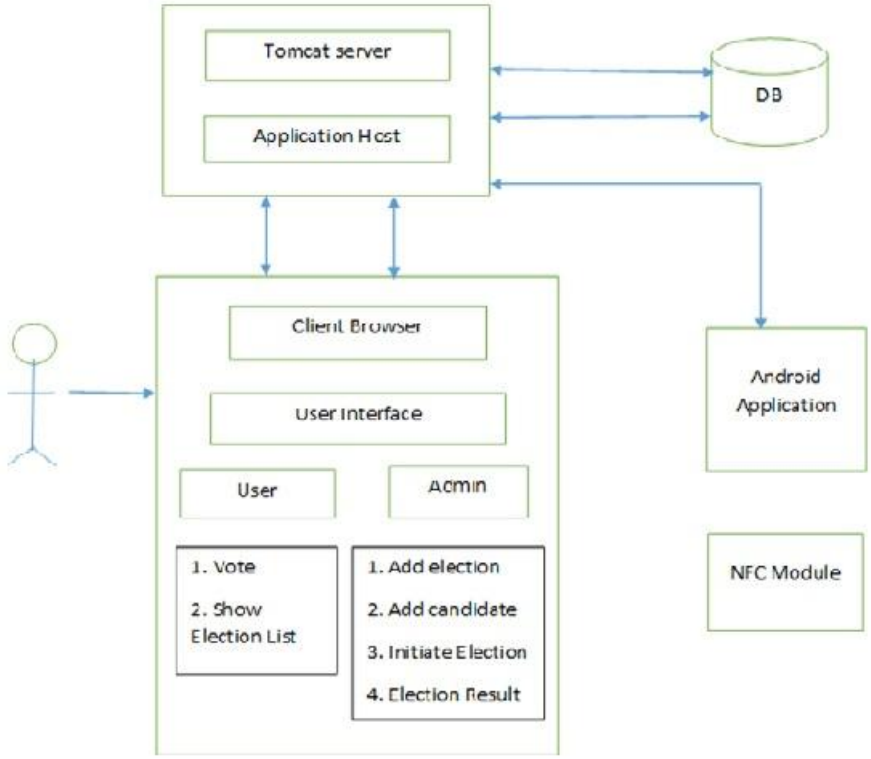


Fig.System architecture

Advantages

1. User can vote from mobile place.
2. Less manual work and Save time.
3. Providing Fast voting Result.

Dis-Advantages

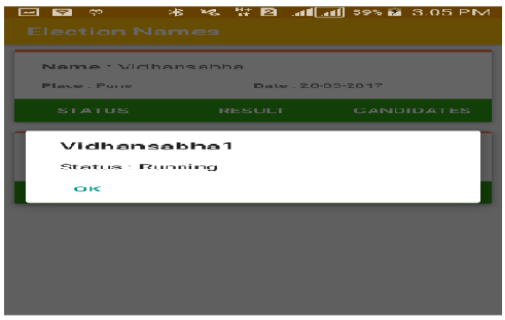
1. Need of internet connection is compulsory to transfer the data.

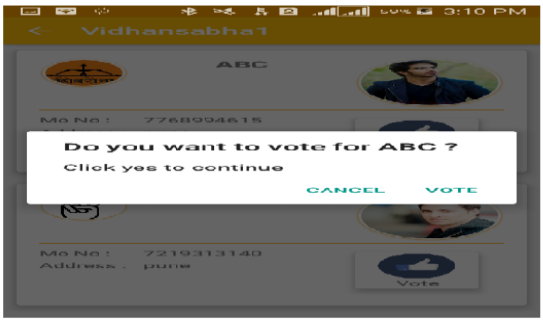
Applications

1.This application can be used by government to conduct the elections.
2. As well as this application can be used in collages, company voting, pubic issue voting.

RESULTS

The results of the voting can only be displayed once the voting process ends. This is ensured by two safeguards: First, the Result Button cannot be pressed until the **Close** button is pressed (which ends the voting for the day). Also, the Result button is sealed and can only be broken at the vote counting station.following imges shows the result of e-voting system.





CONCLUSION

E-voting is used today. Developing a good system is critical to the success of the system to prevent system failures and to gain wide acceptance as the best method available. A good e-voting system requires some characteristics such as Accuracy, Convinience, Reliability, Mobility and Social Acceptance. The standards must be national. Mobile voting will be an low-cost, and less time consuming method once a system exhibiting national standards and the above mentioned characteristics is implemented

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