

E-Voting: Using NFC

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ABSTRACT

Voting is duty of every citizen of this country. But people face so many problems such as fake voting, name not found, don't know the exact place of poll, don't have enough time etc. There are also some political influences over the poling and tendency of people for not voting. Considering all these problems we have come up with a solution. A system with web application as well as android application. Android application is using NFC tags for identification and poling. The vote will be counted accordingly hence the less fraud probability. The web application is for managing all election related activities. Managing date, time and area are some of its main features. It will make elections easier and will increase the voting percentage.

An electronic voting (e-voting) system is a voting system in which the election data is recorded, stored and processed primarily as digital information. There are many security challenges associated with the use of Internet voting solutions. Authentication of Voters, Security of voting process, Securing voted data are the main challenge of evoting. This E-Voting system mainly for those people who are unable to come to the voting booth due to on duty leave or the people who are physically handicapped. In voting system there are many processes. This system having main four processes: firstly, application control process which involves the identification and authentication phases for the applied citizens. Secondly, the voting process which will be done by voter information. In Third section confirmation process, in this system check the image captured in application duration and match the image of voter which is online for giving vote for their identification. Finally the election server, administrator will sort out the final result by decipher the received encrypted information using private key.

Keywords: Encryption, Decryption, KDC, TGS.

I. INTRODUCTION

Voting is duty of every citizen of this country. But people face so many problems such as fake voting, name not found, don't know the exact place of poll, don't have enough time etc. There are also some political influences over the poling and tendency of people for not voting. Considering all these problems we have come up with a solution.

A system with Web Application as well as Android application. Android application is using NFC tags for identification and poling. The vote will be counted accordingly hence the less fraud probability. The web application is for managing all election related

activities. Managing date, time and area are some of its main features. It will make elections easier and will increase the voting percentage.

This system presents a novel e-voting framework that satisfies the security prerequisites of e-voting. The proposed framework is executed on an android mobile phone which acts as a voting machine. The framework utilizes NFC to store all conditions that conform to the rule of the government to check eligibility of voter. NFC is one of these proficient technologies. It is a short range radio communication technology and uses Radio Frequency Identification (RFID).

The software engineering challenges:

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- Accuracy: It is not possible for a vote to be altered eliminated the invalid vote cannot be counted from the finally tally.
- Democracy: It permits only eligible voters to vote and, it ensures that eligible voters vote only once.
- Privacy: Neither authority nor anyone else can link any ballot to the voter
- Verifiability: Independently verification of that all votes have been counted correctly.
- Resistance: No electoral entity (any server participating in the election) or group of entities, running the election can work in a conspiracy to introduce votes or to prevent voters from voting.
- Availability: The system works properly as long as the poll stands and any voter can have access to it from the beginning to the end of the poll.
- Ability: The system allows any voter to interrupt the voting process to resume it or restart it while the poll stands the existing elections were done in traditional way, using ballot, ink and tallying the votes later.

II. LITERATURE SURVEY

1. Jambhulkar, chakole and pradhi [3] proposed a novel security for online voting system by using multiple encryption schemes. Provide security for cast vote when it is submitted from voting poll to voting server. Multiple encryptions to avoid DOS attack. Security provide submissive as well as active interloper. This system is to take a judgment of certain issues. This paper use cryptography concepts to take pros of digital signature. Encrypting the send forth vote to client server then send to voting server with the help of net. After sending encrypted vote then server side decrypt the vote before counting.

2. Pashine, ninave and kelapure [4] proposed an android platform for online voting system. This application provide diversion of long process also provide security to the voter and its voter comfort system voter no need to go polling booth easily vote for candidate in hometown itself. And also provide the option of gesture recognition but authentication is the problem of android platform.

3. Khasawneh [2] Proposed An E-Voting System For Biometric Security Is Providing A Two Sided Solution Such As Server And User Side. After Casting The Vote System Will Generate Hardcopy For Voter And Also Generate Unique Number. This Unique Number And Voter Name And Identification Number Is Secured. All Content Are Stored In Special Box This Box Is Secured Box, This Information Is Used For Verifying The Vote Before Stored In Final Database. This Side Copy Is Printed With Unique Barcode That Can Be Easily Readable Automatically And Scanned Then Randomly Choose One Copy, Then This Copy Is Tested.

4. Shridharan [1] Implemented a three models such as, Authentication model, franchise excising model, distributed database and central server model. In authentication model voter with smart card and voter identification number and also gives the biometric information this all information is used in future election voting process. After verification and validation voting interface means candidate name and sign are displayed, this is verified by vote casting database, and then votes are counted and declared the result. In this system security and traceability also ensures to auditing the vote and voter information.

In such a system, the correctness burden on the voting terminal's code is significantly less as voters can see and verify a physical object that describes their vote and are allowed to vote in terminal only after their identity is proved. The voters, who cast multiple votes during the process of voting is ensured to be prevented. Also to ensure the maintenance of authenticity, any biometric identification of the voters could be used for accessing the terminal to cast their vote and restricting them to cast again. The process of online voting could be deployed with three phases - the voter registration online vote capturing and the instant online counting and result declaration.

III. SYSTEM ARCHITECTURE

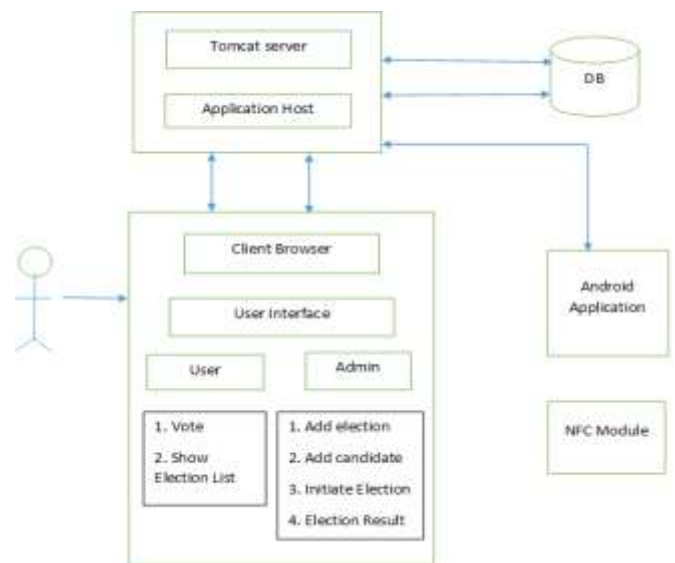


Fig-1:-A simple block diagram of E-Voting system.

IV. TECHNOLOGIES USED

SOFTWARE REQUIREMENTS:

- 1) Java 1.7
- 2) MySQL
- 3) Tomcat 7
- 4) Eclipse
- 5) Android Studio

HARDWARE REQUIREMENTS:

- 1) 500 mb HD
- 2) i5 Processor
- 3) 4 GB RAM
- 4) NFC Reader and Tags

V. OBJECTIVE

The main motto to develop the E-Voting System is to increase a voting count in our country because of only few people are going to voting Centre due to their tight schedule or remote work. So the people can vote from any location in the world with using this system.

The E- Voting System is to make secure with some algorithm and techniques. There is no need go at any voting Centre. Avoid the phishing attackers, decrease bogus voting and provides the security to the system.

Proposed system does not require large scale hardware interfaces only internet connection is needed so easily accessible from any position.

This system is useful for election commission to conduct their elections for different posts. The elections can be conducted easily and effectively in a proper manner with Proper security.

VI. CONCLUSION

This system is designed for election commission to conduct their elections for different posts. The elections can be conducted easily and effectively in a proper manner by using this Mobile based voting system using NFC module because the voter can vote from the place where he is working by using this system. It can be converted for public elections and also parliament elections.

Proposed E- voting system is very effective and it will be useful for voters in many ways and it will reduce the cost and time. Internet-based voting offers many benefits including low cost and increased voter participation. Voting systems must consider security and human factors carefully, and in particular make sure that they provide voters with reliable and intuitive indications of the validity of the voting process.

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