Secured Voting System using Near Field Communication

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Abstract— Voting is duty of every citizen of this country. But people faces so many problems such as fake voting, name not found, don't know the exact place of polling, don't have enough time etc. There are also some political influences over the polling 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 polling. The vote will be counted accordingly so less fraud probability. The web application is for managing all election related activities. Managing date and time and area, are some of its main features. It will make elections easier and will increase the voting percentage.

Key words: NFC, fraud probability, Voting System

I. INTRODUCTION

We always notice that the percentage of voting varies between 50 to 60% only. Everyone knows the truth behind this percentage. There are many problems behind this and to overcome these problems we are going to develop a voting system.

Such as people don't have enough time, they don't know about the exact polling centre to vote, don't have name in voting list, people those who are out of station cannot able to vote etc.

Our proposed system can overcome these problems because it has main feature as mobility i.e we can vote from any polling centre also we are providing much security so as to avoid false voting. Motivation of the Project is to solve some problems such as fake voting, name not found, don't know the exact place of pole, don't have enough time etc.

Main problems behind low voting percentage are some of us are out of station, some of us don't havingnames in voting list etc. As a student we are also leaving far from our assembly hence cannot vote from current position. Thus we are designing such voting system which will allow you to vote from any polling center.

II. RELATED WORK

A. Direct Recording Electronic (DRE) Voting Systems

DRE systems completely eliminate paper ballots from the voting process. As with traditional elections, voters go to their home precinct and prove that they are allowed to vote there, perhaps by presenting an ID card, although some states allow voters to cast votes without any identification at all. After this, the voter is typically given a PIN, a smartcard, or some other token that allows them to approach a voting terminal, enter the token, and then vote for their candidates of choice. When the voter's selection is complete, DRE systems will typically present a summary of the voter's selections, giving them a final chance to make changes. Subsequent to this, the ballot is "cast" and the voter is free to leave.

B. Electronic vote collector (EVC)

In this platform, the voters deposit their votes on their own personal computers, while a mobile device pass close those machines and collect their stored votes, under the coordination of a management software working in a stationary server. It is presented as a taxonomy of e-Voting systems, and the authors present requirements for the project and implementation of e-Voting systems. It is described a local e-Voting system which eliminates physical ballot-boxes, reducing costs and efforts, and consequently being less time consuming. It is described an experimentation about e-Voting by cell phones, by SMS protocol.

C. Online Voting System with Multi Security Using Biometric And Steganography

Highly Secure Online Voting System with Multi Security using Biometric and Steganography, the basic idea is to merge the secret key with the cover image on the basis of core image. The result of this process produces a stego image which looks quite similar to the cover image. The core image is a biometric measure, such as a fingerprint image. The stego image is extracted at the server side to perform the voter authentication function. It used secret message with 288 bit length. As the actual secret key is never embedded in the stego image, there will be no chance of predicting secret key from it.

III. OVERVIEW OF VOTING SYSTEMS

India has an asymmetric federal government, with elected officials at the federal, state and local levels. At the national level, the head of government, Prime Minister, is elected by members of the Lok Sabha, the lower house of the parliament of India. The elections are conducted by the Election Commission of India. The Election Commission of India is an autonomous, constitutionally established federal authority responsible for administering all the electoral processes in the Republic of India.

Electoral Process in India starts with the declaration of dates by the election commission. Publishing of electoral rolls is a key process that happens before the elections and is vital for the conduct of elections in India. The Indian Constitution sets the eligibility of an individual for voting as any person who is a citizen of India and above 18 years of age. It is the responsibility of the eligible voters to enroll their names.

Electronic voting machines (EVM) are being used in Indian general and state elections to implement electronic voting in part from 1999 elections and in total since 2004 elections. The EVMs reduce the time in both casting a vote and declaring the results compared to the old paper ballot system. After rulings of Delhi High Court and Supreme Court and demands from various political parties, Election Commissiondecided to introduce EVMs with Voter-verified paper audit trail (VVPAT)system.

The normal scenario of Voting system in india is:

Step 1. Obtain a ballot.
Find the location of your polling place.
Step 2. Marking the ballot.
An optical scan ballot consists of columns of names of offices and candidates with an incomplete arrow or small oval adjacent to the name.
Step 3. Check your ballot.
Look at the positions you have marked.
Step 4. Preserve the secrecy of your ballot.
Place your voted ballot in the security sleeve provided to preserve the secrecy of your ballot.
Step 5. Cast your ballot.
Take your ballot to the judge of election in charge of the ballot box who will cast the ballot for you.

IV. PROBLEM FORMULATION

A. Set Theory Analysis

1) Let 'S' Be The Advance Voting System Using R-Language And Cloud As The Final Set
S = {……
2) Identify The Inputs As
S = {P,I, N…
N3, N4, …| 'N' gives NFC }
I = {I1, I2, … |'I' gives voter identity information }
P= {P1, P2, … |'P' gives the Pole}
3) Identify the outputs as O
S = {P, I, N, K, L…
I = {I1, I2, … |'I' gives voter identity information }
K= {K1, K2 …| 'K' is the voting count}
L= {L1, L2, L3 ……| 'L' is giving foul voting logs}
4) Identify the functions as 'F'
S = {P, I, N, K, L, F…
F = {F1(), F2(), F3(), F4()}
F1(N) :: Fetch information from NFC
F2 (I) :: Check for identity match
F3 (I, P) :: poling
F4 () :: Generate results

V. THE PROPOSED SOLUTION

Till the date we know the voting has been done at various polling Centre. We have to register our names in voting list then if our name appears in the list then only we can vote. We know the various problems behind this that if we registered our name still it is not there in Voting list. Sometimes it is not on right polling Centre and so on.

If we actually go through this process then we come to know that many people involved in each voting scenario. There are also many problems while we are not able to find out our name in the list. It is not possible

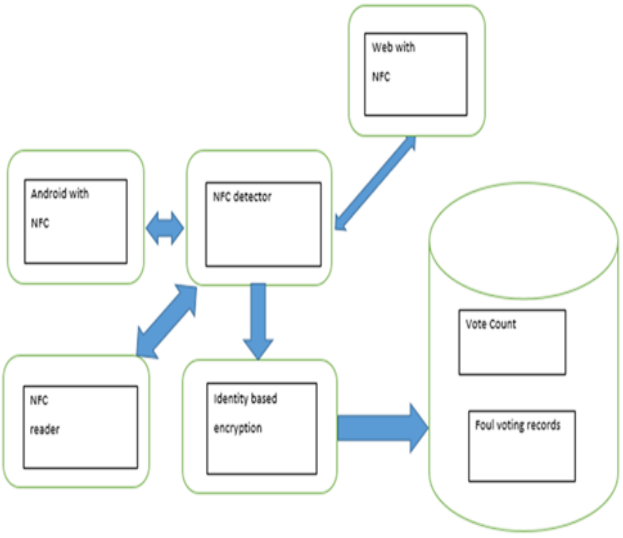

Fig. 4: System Architecture Centre

if we are there at our voting Centre on 5 pm and haven't find out name is list then it is not possible to search our name at another. So for that purpose we can implement new voting system server.

The system will work very much user friendly and can work efficiently. As we focusing on the user who are not able to vote because they are out of station or away from their polling center. We are using the feature called NFC i.e Near Field Communication for user login and next security levels.

Once the user registered themselves in the system they need a smart phone with NFC tag and that NFC tag will be their identity for next login time. Now consider a person want to vote who is already registered in the system, the person will walk in to any of the polling center near to him/her. Login using user name and password, after this NFC matching will be done and he/she can able to vote in that field.

Once user logged in, then no need to stay in the line. He/she can vote from anywhere within NFC range which will solve the problem of waiting.

Android/ smart phones are going to be used for voting, when one of the smart phone is used for voting then that voting application will automatically get uninstalled so as to control over fake voting. So the same smart phone cannot be used for voting.

VI. CONCLUSION

In this voting system we provide user/voter freedom to choose the voting pool center & also it is a remote voting system. With all features give below we provide strong security using NFC Real time OTP etc.
Features

- To able to vote on any polling booth with one's true identity
- Less issues with foul voting or false voting, Lesser frauds in vote counting
- Probable increased voting percentage
- No Dummy voting

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