

ONLINE VOTING TECHNOLOGY A REVOLUTION IN DEMOCRACY

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Abstract- The word “vote” means to choose from a list, to elect or to determine. The main goal of voting (in a scenario involving the citizens of a given country) is to come up with leaders of the people’s choice. The election system is the pillar of the every democracy. The democratic administration is totally dependent on the results of the election. The election process provides the right to every citizen of a country to select a legitimate representative among themselves who can guide the democratic system towards the welfare of the society. This online voting/polling system seeks to address the above issues. It should be noted that with this system in place, the users, citizens in this case shall be given ample time during the voting period. They shall also be trained on how to vote online before the election time. This paper deals with design, build and test a online voting system that facilitates user (the person who is eligible for voting) this online voting system is highly secured, and its design is very simple, ease of use and also reliable. The proposed software is developed and tested to work on Ethernet and allows online voting. It also creates and manages voting and an election detail as all the users must login by user name and password and click on his favourable candidates to register vote. This will increase the voting percentage in India. By applying high security it will reduce false votes. The primary goal of this paper is to develop an efficient online voting system with high security.

Keywords- CSS, HTML, Java Script, JDBC, MYSQL, ORACLE, online voting, security issue.

I. INTRODUCTION

“ONLINE VOTING SYSTEM” is an online voting technique. In this system people who have citizenship of INDIA and whose age is above 18 years of age and any sex can give his\her vote online without going to any physical polling station. There is a database which is maintained in which all the names of voters with complete information is stored.

Online Voting System is a voting system by which any Voter can use his/her voting rights from anywhere in the country. We provide a detailed description of the functional and performance characteristics of online voting system. Voter can cast their votes from anywhere in the country without visiting to voting booths, in highly secured way. That makes voting a fearless of violence and that increases the percentage of voting.

The Online Voting system is a web-based system so fundamental features related with web-based technologies such as client-server and database server properties.

II. VARIOUS VOTING TECHNIQUES

- 1. Paper Ballot Voting System:** Paper ballot system is a commonly used as traditional voting system.

ADVANTAGES

Simplicity:

The paper ballot system gives a simplest way to cast vote. Illiterate people can also cast their vote easily. No need to guide the individual.

1.1 Portable:

The arrangement of this whole system can be made easily and whole system can be assembled easily. With the sufficient man power the arrangement of this system can be done easily and quickly.

1.2 Less costly:

The system is very much affordable than the electronic system as the major requirements are only paper and a ballot box which are provided by the election commission. The voter doesn't have to pay a single bug form his/her pocket for voting.

DISADVANTAGES

1.1 Time Consuming: This system is very much time consuming and slow. As only one person can vote at a time and all the voters has to wait in the queue for their turn. This in turns increases the crowd at the polling stations.

1.2 Booth Capture: It was the major type of electoral fraud found in India, wherein the polling station was taken over by the party loyalists. Better policing makes such attacks less of a threat today.

1.3 Low Tally Speed: Once the voting schedule is over, the result of the election cannot be declared immediately. All the ballot boxes are collected at a specific location and then the counting of the votes is carried out which is very much time consuming.

2. Electronic Voting System: This is the current way of voting in our democracy.

ADVANTAGES

2.1 Convenience: With the well-designed software and system, the voters can simply use his/her voting equipment with the minimal time and skill to finish the voting process.

2.2 Mobility: Voters can cast their votes from home, or any other place from where they can get easy access to the internet. People can even use the mobile device such as cell phone or PDA to vote. There is no restriction on the location.

2.3 Tally Speed: Once the voting time is over, the system can immediately calculate the result of the election. It is much faster than the traditional ballot counting method used in traditional voting system.

2.4 Less Cost: As compared to paper ballot voting, electronic voting is very much affordable.

DISADVANTAGES

2.1 Vulnerable to Security: The security issue is the main concern of the electronic voting system. So far, there are still many classes of attacks which are tough to thwart completely.

2.2 Power: The Many polling places are located in areas that lack electricity service or have only intermittent service. Thus, the EVMs operate entirely from battery power, rather than merely using a battery as a backup.

2.3 Cost: The cost of the system is a major concern. The current EVMs are built from expensive parts and cost approximately \$200 for each set of units. Which costs several thousand dollars.

3. Online Voting System: Online Voting System is the latest electronic voting system introduced. In which the voted ballot is transmitted over the public internet through web browser. The voter can directly vote online from anywhere in the world. Security is the major issue in the Online Voting System. It is very efficient and portable.

ADVANTAGES

3.1 Portable: It is very much portable system as the system works on internet only the internet supporting device is required.

3.2 Fast: It is very fast as compare to traditional paper ballot voting system. The voter doesn't need to wait in long queue for voting. He /She can cast their vote just on a single click.

3.3 Flexibility: As this system is functional on the internet that makes this system more flexible to support variety of paper ballot question formats.

3.4 Mobility: This system gives the freedom of casting the vote from anywhere in country. This is beneficial for the voters who are regularly out of station.

3.5 Reusability: The extent to which the existing application can be reused in new application. The system can be reused a number of times without any technical difficulties.

DISADVANTAGES

3.1 Complexity: The designing phase of this system is highly complex. As the system has deal with large no of users and has to maintain huge database.

3.2 Security Issues: The whole system operates over the internet which makes the system more susceptible to online threats so the security issue is the main concern of this system.

III. PROBLEM STATEMENT

As the statistics shows that the percentage of polling on the day of elections is not satisfactory as majority of students are not coming to vote and thinks is just as wastage of time.

The manual voting system takes long time as there is a lot of paper work first and then human effort is also there for counting of the votes. Manual voting consumes almost 1-2 hrs (approx.) of every voter which is surely a headache.

The voting of the college elections, State elections will be done online such that there is no need to come at the voting booth on the time of elections and every eligible person can vote from the home or from any other place.

A USER ID and PASSWORD will be provided to every people registered in election commission database , so that on the time of elections they can easily login on the election link and can use his/her vote.

IV. RESEARCH OBJECTIVE

The main aim of the system is to provide a set of protocols that allow voters to cast secretly while a group of authorities collect votes and output final results. Since it is standalone application, one or more user may use it at a time and the system is available only at the Election time. The data transaction between client and server must be encrypted using SSL technology.

V. LITERATURE REVIEW BACKGROUND

This system is being developed for use by everyone with a simple and self-explanatory GUI. This is software that can be used by people to vote in an election. All the user must do login according to their regional languages and click on his favourable candidates to register his vote. The development and testing is done on Ethernet. While online voting system has been an active area of research in recent years, the use of insecure Internet, well documented cases of incorrect implementations reported recently. These challenges are to be resolved so that public should cast their vote in secure and convenient way. People can cast their votes efficiently, faster and also maintain confidentiality at the same time. Proposed online voting system is a system by which any Voter can use his/her voting rights from anywhere in the country. Online voting system contains.

- a. Voter's Names with USERID and password. //VERIFICATION PROCESS (BIOMETRIC + RETINA TESTING)
 - b. A database that contains all user related information like user name, password, their email id, slip number that is provided by election commission and most important user's vote.
 - c. Voter's information in database.
 - d. Another database for election commission that mainly stores the total number of votes corresponding to each candidate.
 - e. Voter's language information.
 - f. Voter's e-mail address & Voter's telephone number.
 - g. Generate a unique random number as slip number and mail it to every voters who have registered with their email id.
 - h. Instead of symbol assign a unique number to every candidate.
 - i. Voter's vote in a database. //SPECIALISED WAY FOR CASTING VOTE TO ENHANCE THE SECURITY.
- ** EXPLAINED BELOW IN PROPOSED SECTION
- j. Calculation of total number of votes.

VI. SCOPE OF STUDY

It is focused on studying the existing system of voting in INDIA and to make sure that the people's vote is count, for fairness in the elective positions. This is also will produce:

- Less effort and less labour intensive, as the primary cost and focus primary on creating, managing, and running a secure web voting portal.
- Increasing number of voters as individuals will find it easier and more convenient to vote, especially those abroad.
- The ONLINE VOTING SYSTEM-INDIA shall reduce the time spend making long queues at the polling stations during voting. It shall also enable the voters to vote from any part of the globe as explained since this is an online application available on the internet. Cases of vote miscounts shall also be solved since at the backend of this system resides a well-developed database using MYSQL that can provide the correct data once it's correctly queried. Since the voting process shall be open as early as possible, the voters shall have ample time to decide when and whom to vote for.

VII. KEY SECURITY ISSUES

Foreign experience revealed that they are often confronted by security issues while the online voting system is running. The origin of the security issues was due to not only outsider (such as voters and attackers) but also insider (such as system developers and administrators), even just because the inheritance of some objects in the source code are unsuitable. These errors caused the voting system to crash.

The proposed solutions were correspondingly outlined to hold back these attacks. For example, to avoid hacker making incursion into the voting system via network, we can design our system to transmit data without network. Another example is to limit voter to input particular data, so that we can prevent the command injection from running.

To cope up with such security issues we are working on this project whose functioning modules and various security proposals are explained below.

Product perspective

The product is an election conducting tool with a simple and convenient GUI .this is developed using java .it requires Java Virtual Machine (JVM).

User characteristics

User are considered to be technically inexperienced but expected to be able to login , having email id and cast their vote using number corresponding to each candidate as per prescribed by election commission on GUI.

Product functions

The product has server back-end which is use to take care of authenticating the users and maintaining necessary data structures.

Users are authenticated using user name, password and slip number Slip. number is basically a unique random number of ten digits generated by this system .This slip number has one blank space .This slip number is sent on every user's mail id .When users cast their vote using number then that number internally goes to that blank space in slip number and stored in database . And GUI is not constrained to English means any language, users have option to choose their language comfort zone.

Overview of data requirement

Internal memory will be linearly dependent on number of voters and provision of changing vote at later time. The external data about the candidates and the posts and the answered will be given as input at the server end.

Assumptions and dependencies

Since this product is based on java so the user is assumed to have JVM on his system irrespective of its hardware and software configuration.

Users have their mail id. We also assumed that all the clients running this software are not blocked by firewalls, proxy's etc.

Constraints

User name, password and slip number are used for authentication means voter identification.

Salient feature

This software is system through which a user can vote by registering themselves on voting website. All information entered by user during registration are stored in database .Each voter has to enter name, login password, sex, religion, nationality etc.

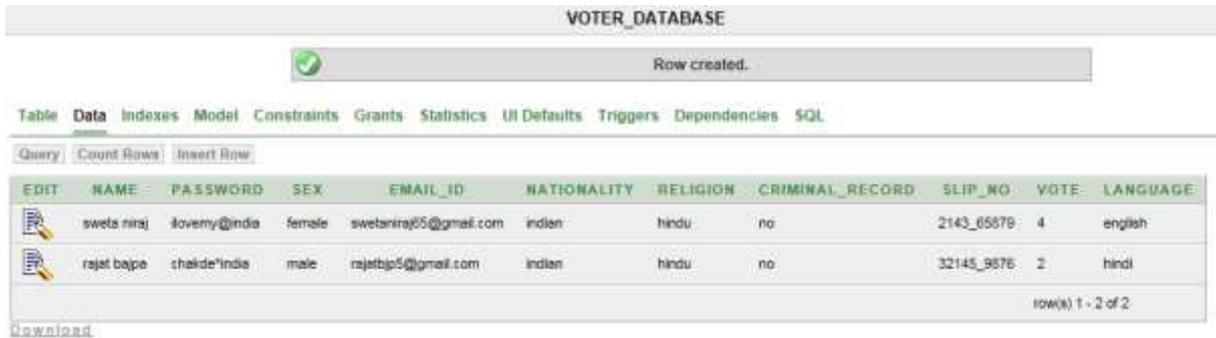
HOME



This is home page of this system having all feature option.

Registration

Registration will contain the registration page ,where users can register themselves .All information entered during are stored in respective database .The Election Commission Officer has to authority to accept eligible user otherwise he/she has right to reject their registration.



The screenshot displays a web interface for a 'VOTER_DATABASE'. At the top, a green notification bar states 'Row created.' Below this, a navigation menu includes 'Table', 'Data', 'Indexes', 'Model', 'Constraints', 'Grants', 'Statistics', 'UI Defaults', 'Triggers', 'Dependencies', and 'SQL'. A sub-menu for 'Data' is open, showing options for 'Query', 'Count Rows', and 'Insert Row'. The main area shows a table with the following columns: EDIT, NAME, PASSWORD, SEX, EMAIL_ID, NATIONALITY, RELIGION, CRIMINAL_RECORD, SLIP_NO, VOTE, and LANGUAGE. Two rows of data are visible:

EDIT	NAME	PASSWORD	SEX	EMAIL_ID	NATIONALITY	RELIGION	CRIMINAL_RECORD	SLIP_NO	VOTE	LANGUAGE
	sweta niraj	lovenry@india	female	swetaniraj05@gmail.com	indian	hindu	no	2143_65879	4	english
	rajat baje	chakde@india	male	rajatbj05@gmail.com	indian	hindu	no	32145_9876	2	hindi

At the bottom right of the table, it says 'row(s) 1 - 2 of 2'. A 'Download' link is visible at the bottom left.

Login

User login

After registering all information's are stored and sent to Election Commission for further use. This module contains login for user and there is option for FORGOT PASSWORD in case user forget his password then he/she can go with option of forgot password.



The screenshot shows a login window titled 'LOGIN'. On the left, the text 'YOUR VOTE IS YOUR VOICE' is displayed in large, bold, orange and green letters. On the right, there are three input fields: 'user name:', 'password:', and 'slip no:'. Below these fields are two buttons: 'SUBMIT' and 'FORGOT PASSWORD'.

Commission login

Election Commission Officer Login here to maintain the functionality of system.



The screenshot shows a login window for the Election Commission of India. At the top, there is a logo with the text 'भारत निर्वाचन आयोग' and 'ELECTION COMMISSION OF INDIA'. Below the logo, there are two input fields: 'Enter your ID:' and 'PASSWORD:'. A 'Submit' button is located at the bottom.

Resources

Front end-JAVA

Back end –ORACLE/SQL
Design-HTML, CSS

VIII. SOME MAJOR CHALLENGES IN THIS REVOLUTION

- 1) In secured Internet Like
- 2) Hacking Issues
- 3) Literacy Level

Solution to these challenges

- SSL Encryption of vote, internet protocols
- To avoid manipulation of vote. We have proposed our idea in below section.
- For ease of the MOB some training camps will be organised in order to teach them how to use this system

IX. PROPOSED IDEA

Every party or candidate will be represented by a unique no. assigned by election commission rather than using of symbols

Every voter will be mailed a 10 digit no. (with a blank space in between the no.) by election commission.

Voter will cast their vote in form of a no. rather than symbol and this no. will automatically get saved in that blank space and the whole 10 digit no. will be sent to the election commission. Moreover, ssl encryption will add on to its security.

Such how if hacker is even able to hack the system then also he/she cant manipulate the vote because location of the vote in a 10 digit no. will only be known to voter and election commission only. Hence if any manipulation is done in that vote then it will be easily caught out while verifying at backend by election commission.

X. CONCLUSIONS

Our proposal enables a voter to cast his/her vote through internet without going to voting booth and additionally registering himself/herself for voting in advance, proxy vote or double voting is not possible, fast to access, highly secure, easy to maintain all information of voting, highly efficient and flexible. Hence, by this voting percentage will increase drastically. The using of online voting has the capability to reduce or remove unwanted human errors. In addition to its reliability, online voting can handle multiple modalities, and provide better scalability for large elections. Online voting is also an excellent mechanism that does not require geographical proximity of the voters. For example, soldiers abroad can participate in elections by voting online.

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