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| ONLINE VOTING SYSTEM DESIGN DOCUMENT  **PROJECT COMPILED BY:-**   * NAFISH AFTAB ALAM IT-A Roll-30 14150031 * PRAKASH RANJAN IT-A Roll-34 14150035 |

# 1.INTRODUCTION:-

# Defintion of Terms:-

ECI - Election Commission of India

OVS - Online Voting System

# 1. 1 PROJECT OVERVIEW:-

“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 by the Election Commission of India in which all the names of voters with complete information is stored.

In “ONLINE VOTING SYSTEM” a voter can use his\her voting right online without any difficulty. He\She has to be registered first for him/her to vote. Registration is mainly done by the system administrator for security reasons. The system Administrator registers the voters on a special site of the system visited by him only by simply filling a registration form to register voter. Citizens seeking registration are expected to contact the system administrator to submit their details. After the validity of them being citizens of India has been confirmed by the system administrator by comparing their details submitted with those in existing databases such as those as the Registrar of Persons, the citizen is then registered by the as a voter.

After registration, the voter is assigned a secret Username and Password with which he/she can use to log into the system and enjoy services provided by the system such as voting, checking results among others. If invalid/wrong details are submitted, then the citizen is not registered to vote.

With the “OVS”, a voter can use his\her voting right online without any difficulty. He\She has to register as a voter first before being authorized to vote. The registration should be done prior to the voting date to enable data update in the database.

However, not just anybody can vote. For one to participate in the elections, he/she must have the requirements. For instance, he/she must be a registered citizen i.e. must be 18 and above years old. As already stated, the project ‘Online Voting' provides means for fast and convenient voting and access to this system is limited only to registered voters.

## 1.1.1 Problem definition

The voting/polling process by registered voters in India is very cumbersome. So many cases of missing data in the voter registration files have been reported. There are also scenarios where unregistered voters flock in the polling centers as “Dead Voters” to participate in the voting process. Even after voting, malicious clerks and officers-in-charge of a polling station end up playing with the results figures. This results in the release of wrong results leading to cases of post election violence such as the one that happened in early 2008 in India.

Such cases can be solved by insisting on voters exercising that task online using the OVS-INDIA. The voters can also vote from anywhere around the globe, they don’t need to travel back to India during election time in case they are abroad.

## 1.2 SIGNIFICANCE OF STUDY

The main purposes of OVS include:

* Provision of improved voting services to the voters through fast, timely and convenient voting.
* Reduction of the costs incurred by the Indian Electoral Commission during voting time in paying the very many clerks employed for the sake of the success of the manual system.
* Check to ensure that the members who are registered are the only ones to vote. Cases of “Dead People” voting are also minimized.
* Online voting system (OVS) will require being very precise or cost cutting to produce an effective election management system.
* Therefore crucial points that this (OVS) emphasizes on are listed below.

1. Require less number of staff during the election.
2. This system is a lot easier to independently moderate the elections and subsequently reinforce its transparency and fairness.
3. Less capital, less effort, and less labor intensive, as the primary cost and effort will focus primarily on creating, managing, and running a secure online portal.
4. Increased number of voters as individual will find it easier and more convenient to vote, especially those abroad.

## 1.3 Objectives of the project

The specific objectives of the project include:

* Reviewing the existing/current voting process or approach in ;
* Coming up with an automated voting system in India;
* Implementing a an automated/online voting system;
* Validating the system to ensure that only legible voters are allowed to vote.

## 1.4 Project justification

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.

## 1.5 SCOPE OF STUDY

It is focused on studying the existing system of voting in India and to make sure that the peoples vote is counts, for fairness in the elective positions. This is also will produce:

* Less effort and less labor 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.

## 2. THE SECURITY ISSUES OF ONLINE VOTING

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 Sql Injection.

## 3. Problems with the Existing Voter Registration System

The problems of the existing manual system of voting include among others the following:

1. Expensive and Time consuming: The process of collecting data and entering this data into the database takes too much time and is expensive to conduct, for example, time and money is spent in printing data capture forms, in preparing registration stations together with human resources, and there after advertising the days set for registration process including sensitizing voters on the need for registration, as well as time spent on entering this data to the database.
2. Too much paper work: The process involves too much paper work and paper storage which is difficult as papers become bulky with the population size.
3. Errors during data entry: Errors are part of all human beings; it is very unlikely for humans to be 100 percent efficient in data entry.
4. Loss of registration forms: Some times, registration forms get lost after being filled in with voters’ details, in most cases these are difficult to follow-up and therefore many remain unregistered even though they are voting age nationals and interested in exercising their right to vote.
5. Short time provided to view the voter register: This is a very big problem since not all people have free time during the given short period of time to check and update the voter register.
6. Above all, a number of voters end up being locked out from voting.

Hence there is great desire to reduce official procedure in the current voter registration process if the general electoral process is to improve.

## 4. System Implementation Technologies

The web-based OVR was developed as an online information system to offer users convenient access to the voter register. Several tools used during implementation include the following:

## 4.1 SOFTWARE

1. **MYSQL DBMS-**it allows combination, extraction, manipulation and organization of data in the voters’ database. It is platform independent and therefore can be implemented and used across several such as Windows, Linux server and is compatible with various hardware mainframes. It is fast in performance, stable and provides business value at a low cost.
2. **HTML -Hypertext Markup Language-**This is currently the core of the web world, it is a language used to makeup web page. It is the glue that holds everything together. Although HTLM was used for the implementation of the OVS, it is highly compatible with eXtensible HTML (XHTML) which is designed to be a replacement of HTML made to handle data and is also portable between different browsers and platforms with little or no alterations in code. Macromedia Dreamweaver is a prefer tool for designing HTML pages and that is the tool used in coming up with this OVS system.
3. **PHP coding-**This is for advanced user who find PHP codes easy to work with.
4. **Testing** is done via WAMPSERVER.
5. **Web browsers**: Mozilla Firefox, Google chrome, Opera and Internet Explorer
6. **Reporting Tool** i.e. through Data Report.

## 4.2 HARDWARE

Desktop or laptop with at least 2.0 GHz Processor speed, At least 40 GB Hard Disk Capacity and 512 RAM and Printer.

## 5. User Requirements for the Proposed System

The OVS should:

1. Be able to display all registered voters in the database to the SYSTEM ADMIN(s) as per their access rights and privileges.
2. Have a user-friendly interface and user guides understandable by people of average computer skills.
3. Be robust enough so that users do not corrupt it in the event of voting.
4. Be able to handle multiple users at the same time and with the same efficiency, this will cater for the large and ever growing population of voters.

## 5.1 REQUIREMENT SPECIFICATION

A system should meet the following requirements for it to run the OVS:

1. Web browsers: Mozilla Firefox, Google chrome, Opera and Internet Explorer, MYSQL DBMS, WampServer, Macromedia Dreamweaver 8, Programming language such as JAVA and XML
2. Windows OS Xp, Windows Vista or Windows 7. At least 2.0 GHz Processor speed, At least 40 GB Hard Disk Capacity and 512 RAM

## 5.1.1 Functional Requirements

1. Secure storage and retrieval of voters’ details from the database.
2. Enable secure login of voters, that is to say non- legitimate voters should never be allowed to login to the tool, these include the under aged and non nationals.
3. Maintaining and manipulating records in database through functions like edit, delete, and view.
4. Validate and verify input and output data.

## 5.2 SYSTEM LOGIN

As already stated, to login into the system, one has to have a valid username and password. It has also been noted that there are absolutely different privileges for the voter and the system administrator.

At the first visit of the system, the voter/admin interacts with the login page where he/she is required to provide a valid username and password in order to login. Once logged in, then the voter/user is allowed to perform activities such as voting, viewing results and voter registration as per the privileges.

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## 6. SYSTEM DESIGN

## 6.1 THE LOGIN FLOWCHART

LOGIN

HOME PAGE

ABOUT US

ONLINE SUPPORT

FAQS

CONTACT US

VOTE

RESULTS

REGISTER

DOWNLOADS

VIEW REGISTERED VOTERS

Note that for one to experience the system administrator’s privilege, he/she must login as the system admin with the admin’s password and username which is kept secret/confidential at all costs

At the first visit of the OVS site, the user interacts with the system via the interface below.

**6.2 USER INTERFACE**

1. **First page a user interacts with.**

It includes the **Home**, **About OVS, Login, Contact Us, Admin.**

## 6.3 DATABASE DESIGN

The OVS uses a database called Online Voting comprising of two tables as illustrated below;

**Database Online Voting**

1. **Registration details table-**the table holds records of registered users/voters with their respective preferred usernames and passwords. It also has the contacts {phone numbers, and email address} of voters/users.

## Table structure for table registration details

|  |  |  |  |
| --- | --- | --- | --- |
| **Field** | **Type** | **Null** | **Default** |
| ***P*** | int(1) | No | 0 |
| Voter\_Id | varchar(15) | No |  |
| User\_name | varchar(15) | No |  |
| User\_password | varchar(15) | No |  |
| User\_age | varchar(50) | No |  |
| User\_sex | varchar(15) | No |  |
| User\_city | varchar(20) | No |  |
| User\_mob | int(10) | No |  |

This same table is used by the user to get the username and password for logging in.

1. **Vote table-**That holds records of the candidate, and the voter who casts a vote in favor of the candidate. Its primary key is the *id* field which is also necessary during vote counting. The database is queried to find out how many voters casts their votes for a given contestant.

**Table Structure for City-Wise Votes**

|  |  |  |  |
| --- | --- | --- | --- |
| **Field Name** | **Type** | **Null** | **Default** |
| City\_A | **I**nt(5) | No |  |
| City\_B | **I**nt(5) | No |  |
| City\_C | **I**nt(5) | No |  |
| City\_D | **I**nt(5) | No |  |

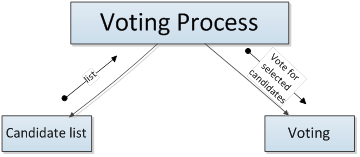
**3.Admin Table:-**

|  |  |  |  |
| --- | --- | --- | --- |
| **Field Name** | **Type** | **Null** | **Default** |
| Admin\_Name | Varchar(10) | No |  |
| Admin\_Password | Varchar(10) | No |  |

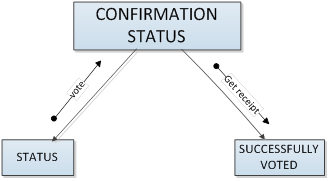
**4. Party Table:-**

|  |  |  |  |
| --- | --- | --- | --- |
| **Field Name** | **Type** | **Null** | **Default** |
| BJP | Varchar(10) | No |  |
| CONGRESS | Varchar(10) | No |  |
| ABVP | Varchar(10) | No |  |

**CONTROL FLOW DIAGRAM**



**CONTROL FLOW OF O/P MODULE**



## 8. IMPLEMENTATION OF THE SYSTEM

This INDEX gives an overview of the implementation and explains how users can navigate through the newly developed tool in order to use it easily.

disabled for ordinary users.

## 8.1 System Modules and Components

The system was implemented as a web-based online voting and modification solution using MYSQL server, Java web server, Internet explorer as the main browser and accessible on the World Wide Web; other web browsers such as Mozilla Firefox, Opera and Google Chrome are also applicable. The implementation and deployment was made successfully using N-tier architecture. Web security and accessibility to the system is ensured

## 8.1.2 Shortcomings with the System

The System implemented is hindered by the following factors:

1. There are limited finance resources to fully implement the system.
2. There is resistance from; commissioners who believe their work will all be done by the tool, and voters who do not believe it is a secure way to go about with voting online.
3. Power supply to the various areas of the country is not reliable and therefore may deter voters from using the OVS to vote.
4. Just like any other computer based information system, garbage in is garbage out, that is if wrong information is entered to the OVS, so will be the output.
5. There is a significant loss of human touch in the voting process.

## 8.2 Testing and validation

Traditional software testing procedures were used for the web-based OVS where testing took place throughout the development process.

## 9. CONCLUSION & FUTURE WORK:-

The main aspect behind OVS is that it enabled us to bring out the new ideas that were sustained within us for many for many days. This project offers the voters to cast easily through internet. Vote counting is also made easy by the OVS since it’s just a matter of querying the database. OVS is used by a number of countries 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 OVS system requires ten characteristics which this system already has. These are:

|  |  |  |
| --- | --- | --- |
| Accuracy | Convenience | Reliability |
| Verifiability | Flexibility | Consistency |
| Democracy | Mobility | Social Acceptance |
| Privacy |  |  |

In analyzing, designing, implementing, and maintaining standards, we considered these characteristics as the foundation. These standards were made national. OVS will be an inexpensive, and less time consuming method once a system exhibiting national standards and the above mentioned characteristics is implemented.

**10.REFERENCE:-**

1. Robert W. Sebesta: Programming the World Wide Web, 4th Edition.

2. M. Deitel, P.J. Deitel, A. B. Goldberg: Internet & World Wide Web How to Program, 4th Edition, Pearson Education, 2004.

3. Chris Bates: Web Programming Building Internet Applications, 3rd Edition, Wiley India, 2007.

4. Xue Bai et al: The web Warrior Guide to Web Programming, Cengage Learning, 2003.

5.Linda PHP and MYSQL video.