

SOFTWARE
REQUIREMENTS
SPECIFICATION
FOR
ONLINE VOTING SYSTEM FOR CENTURION



Centurion
UNIVERSITY

Shaping Lives...
Empowering Communities...

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1. Introduction

1.1 Purpose

The purpose of an online voting system is to provide an efficient way for voters to cast their votes remotely without having to physically visit a polling station. By using an COVSP, voters can access the voting platform from anywhere with an internet connection.

Online voting system can also increase voter turnout by removing barriers to voting such as transportation issues etc... Additionally, COVSP can reduce administrative burden (such as counting and maintaining the records). For this COVSP is also having OVS Dashboard.

OVS must be designed and implemented carefully to ensure the security for the voting process. Therefore, it is essential to implement security measures such as authentication to protect the online voting system and ensure the trustworthiness of the results.

1.2 Scope

This project is intended for making use of the internet for COVS. Online voting website provides the users to vote their nominated persons. The system shall provide features to the user of an online voting system such as user and nominee registration, Ballot creation, security, Results reporting.

1.3 Definitions, Acronyms and Abbreviations

1.3.1 Eligibility Verification

The process of verifying that a voter is registered and authorized to vote in an election.

1.3.2 Ballot System

The process where the eligible voters can cast their vote.

1.3.3 OVS Dashboard

Dashboard tells about the registered user is voted or unvoted with a registered user profile.

Abbreviations

COVSP - Centurion Online voting system platform

1.4 References

1. <https://transmitter.ieee.org/makerproject/view/91d35>
2. <https://nevonprojects.com/online-election-system-project/>
3. https://www.eac.gov/sites/default/files/eac_assets/1/28/California4%20-%202009.19.14%20-%20RFP-for-On-Line-Voting-System.pdf
4. <https://jpinfotech.org/online-election-system-online-voting-system/>

1.5 Overview

The overview of the project is about the voter can vote their correct nominee present in the ballot system. There are two registration and login systems one is voter and another one is nominee. Before login into the ballot system, you must and should register (If you are voter select voter registration otherwise select nominee registration) the account with some specific restrictions given in the register form page. If you login with nominee you will get form where you can create a nominee profile. This profile will be present in the ballot system. These all data can be securely stored in the database.

2. Overall Description

2.1 Product Perspective

Online voting system website is one of the best platforms which will be helpful to vote the nominated people in the secure manner. Secure in the sense generating OTP message to your registered mobile number. After completion of vote, you will get status like voted or unvoted. These all votes are accepted by the system on the server.

2.1.1 System Interface

Apache will be used as web server. The user inputs the data via the web server using HTML forms. The actual program that will perform the operations is written in PHP.

2.1.2 User Interface

User can be easily navigating through our COVSP menu page which contains voter and nominee registration, voter and nominee login, vid checker, nid checker.

Register for Voter – Those who are not have voter id they can register with given form. Form contains upload profile and Aadhar image, name, DOB, mobile number, branch, domain.

VID checker – If you want to see your voter id you should login with registered mobile number and username.

Voter login – If you login with user name and mobile number you get OTP message to your number. By submitting OTP, you can enter into the ballot system

Register for nominee – Those you are participating in the nominee you must and should have nominee id. If you didn't have nominee id you must and should register with vid number and mobile number.

NID checker – If you want to see your nominee id login with mobile number and vid number.

Nominee login – If you login with nid and mobile number you should get form. This form for creating nominee profile which contains upload image and name.

2.1.3 Hardware Interface

a) Server Side

The web application will be hosted on a web server which is listening on the web standard port, port 80.

b) Client Side

Monitor screen – the software shall display information to the user via the monitor screen

Mouse – the software shall interact with the movement of the mouse and the mouse buttons. The mouse shall activate areas for data input, command buttons and select options from menus.

Keyboard – the software shall interact with the keystrokes of the keyboard. The keyboard will input data into the active area of the database.

2.1.4 Software Interface

a) Server Side

An Apache web server will accept all requests from the client and forward it accordingly. A database will be hosted centrally using MySQL.

b) Client Side

An OS which is capable of running a modern web browser which supports JavaScript and HTML5.

2.1.5 Communication Interfaces

The Hypertext transfer protocol (HTTP) (or) Hypertext transfer protocol service (HTTPS) will be used to facilitate communication between the client and server.

2.1.6 Memory Constraints

Memory constraints will come into play when the size of MySQL grows to a considerable size.

2.1.7 Operations

The product shall have operations to protect the database from being corrupted or accidentally altered during a system failure

2.2 Product functions

2.2.1 Context Diagram

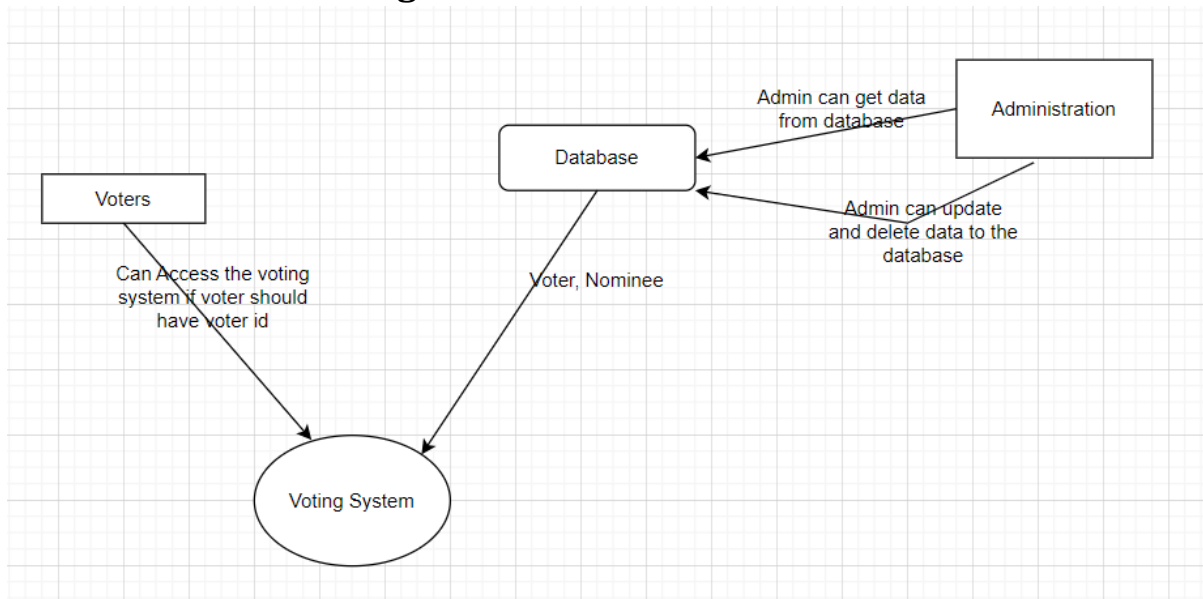


Figure1: Context diagram

2.2.2 Use Case Diagrams (USER)

2.2.2.1 User menu page

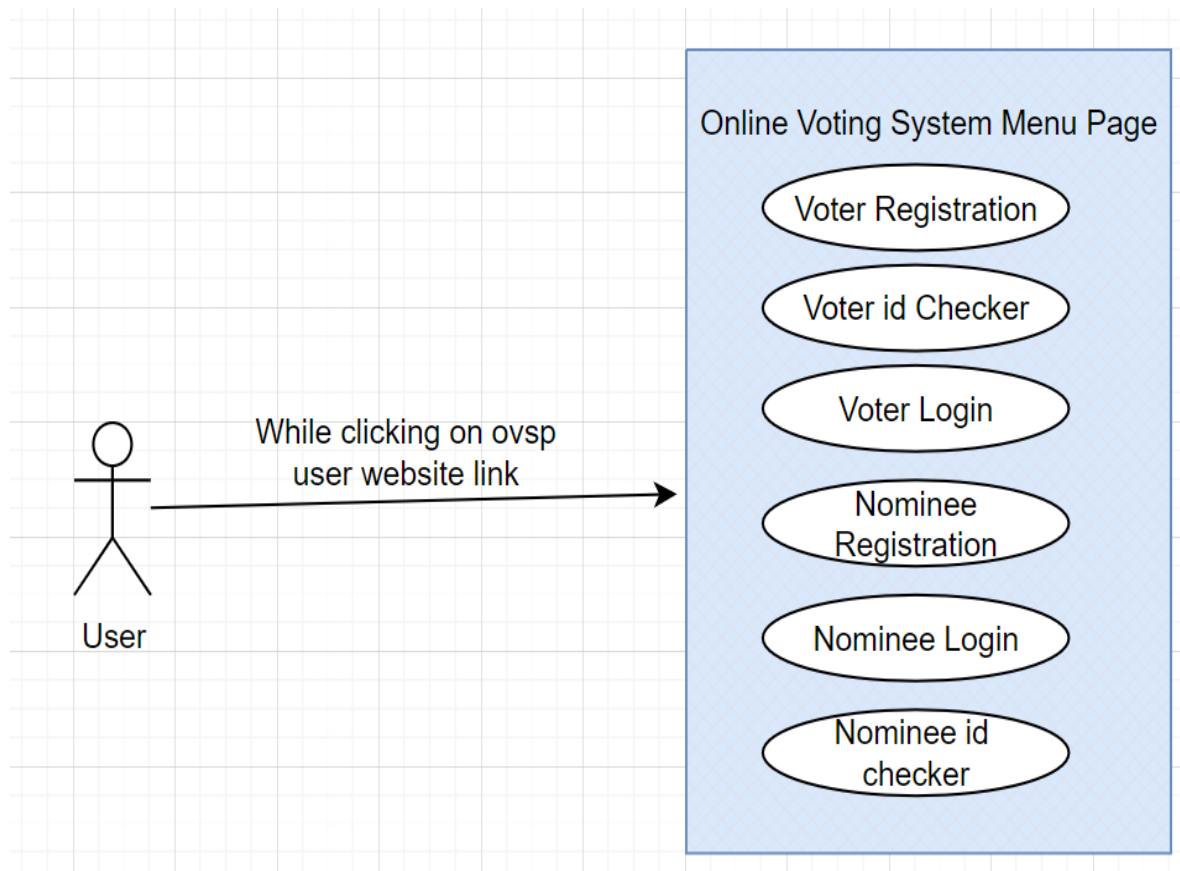


Figure 2: User menu page

2.2.2.2 User Registration

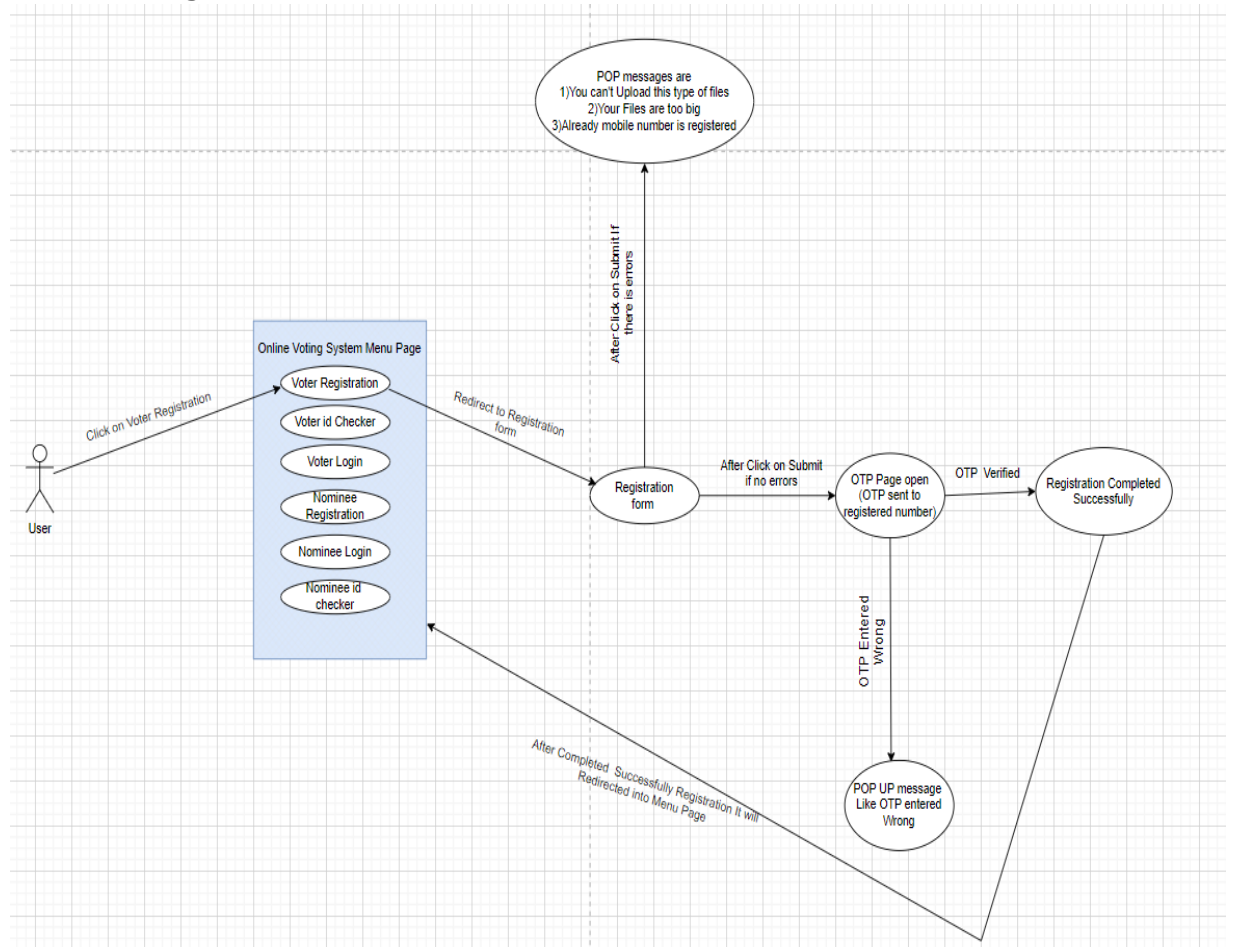


Figure 3: Voter Registration

2.2.2.3 User Voter id checker

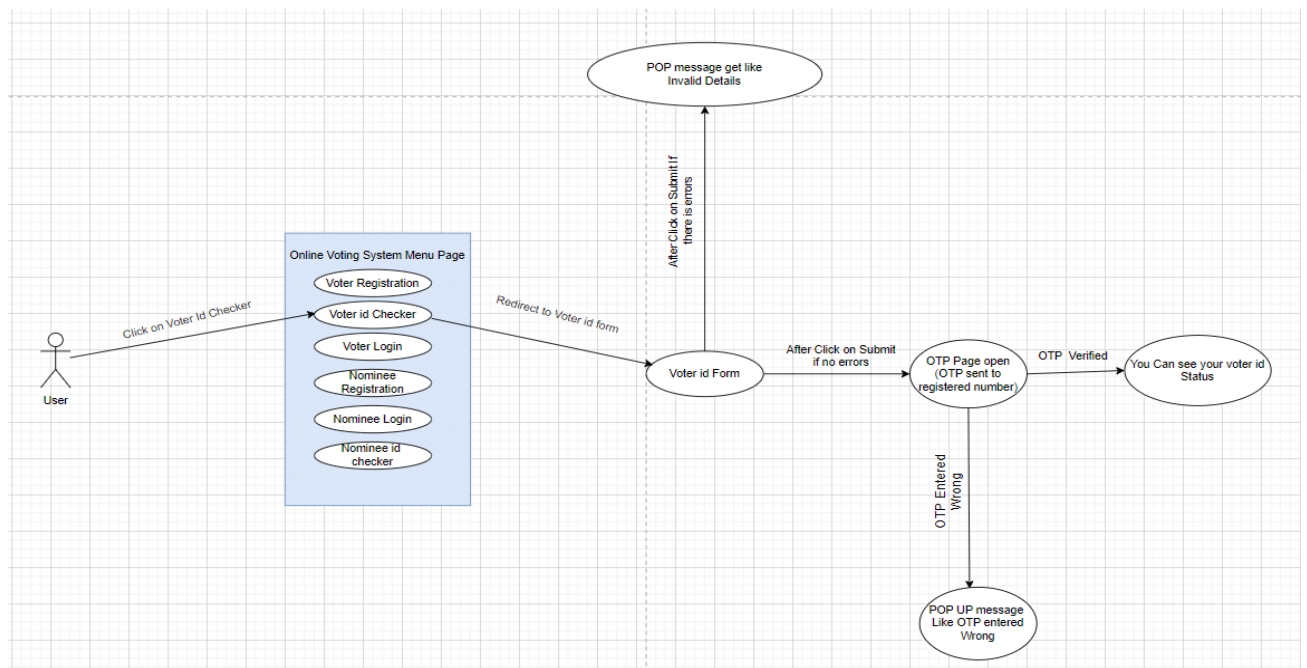


Figure 4: Voter Id Checker

2.2.2.4 User Voter Login

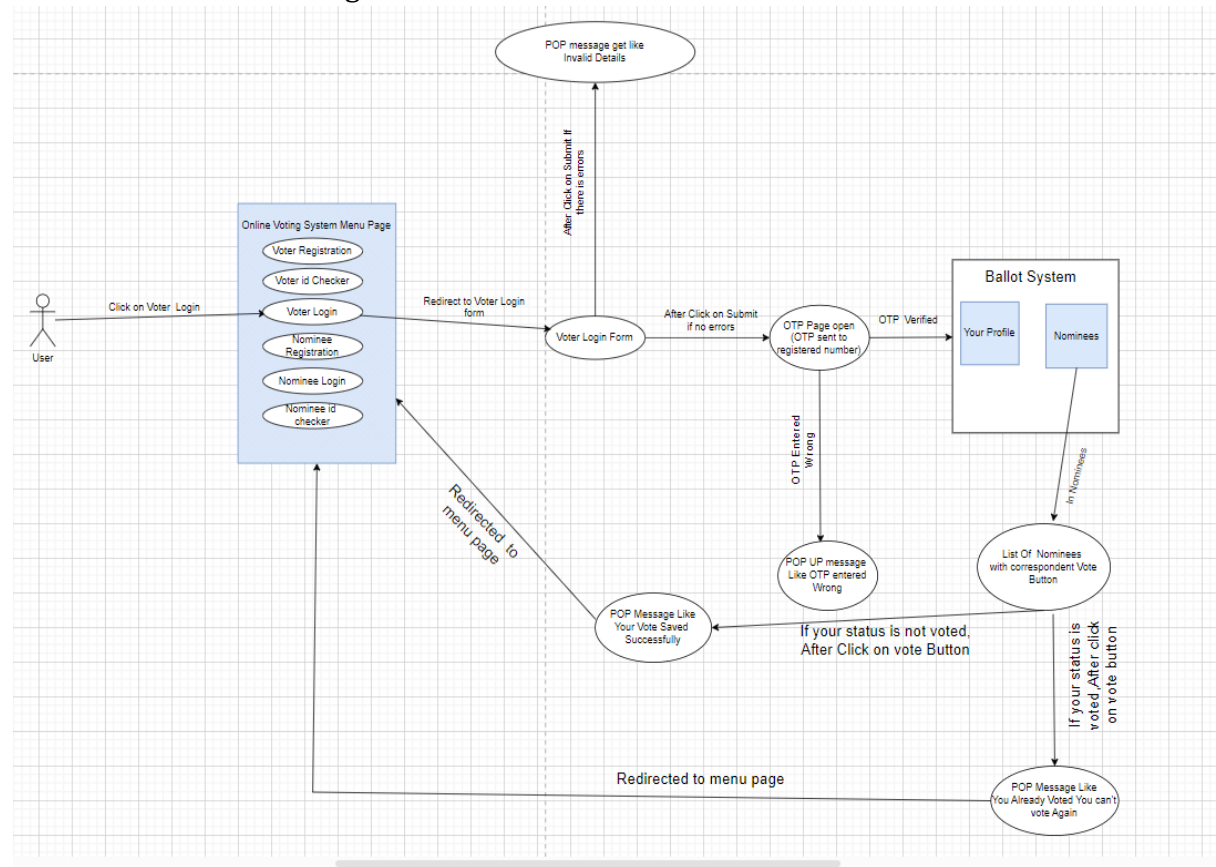


Figure 5: Voter Login

2.2.2.5 User Nominee Registration

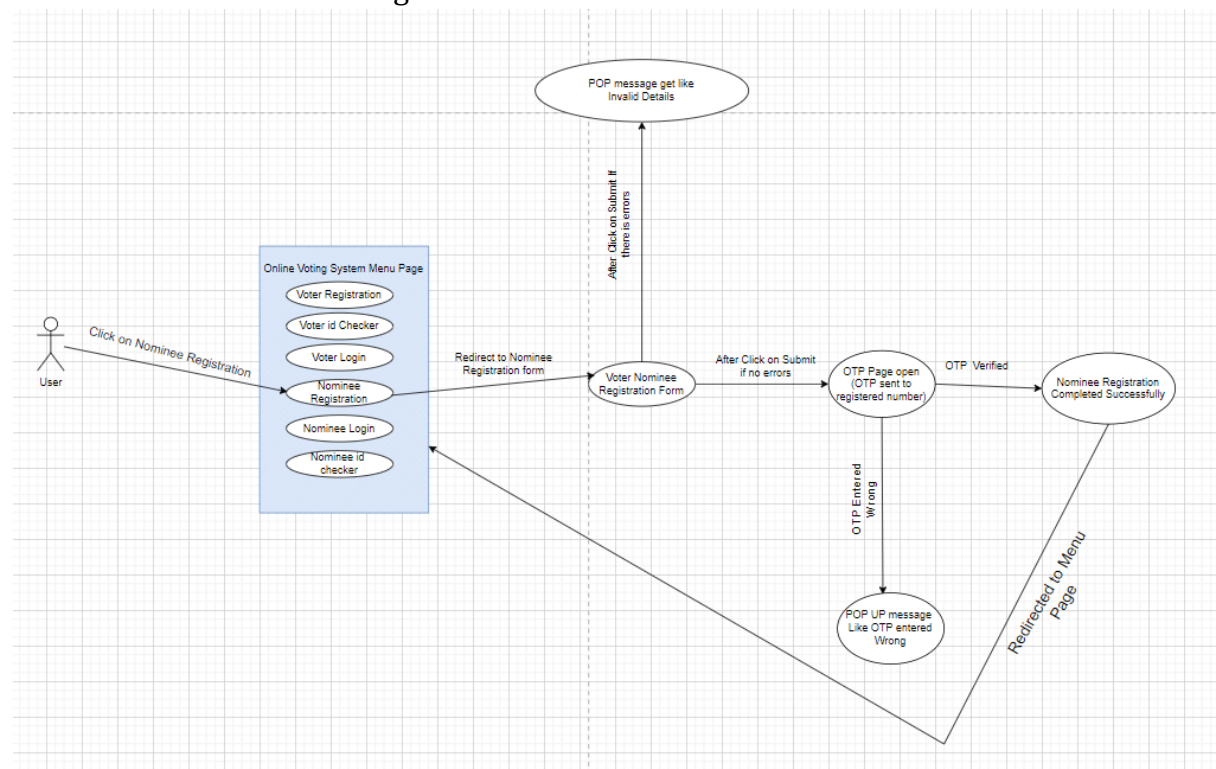


Figure 6: Nominee Registration

2.2.2.6 User Nominee Login

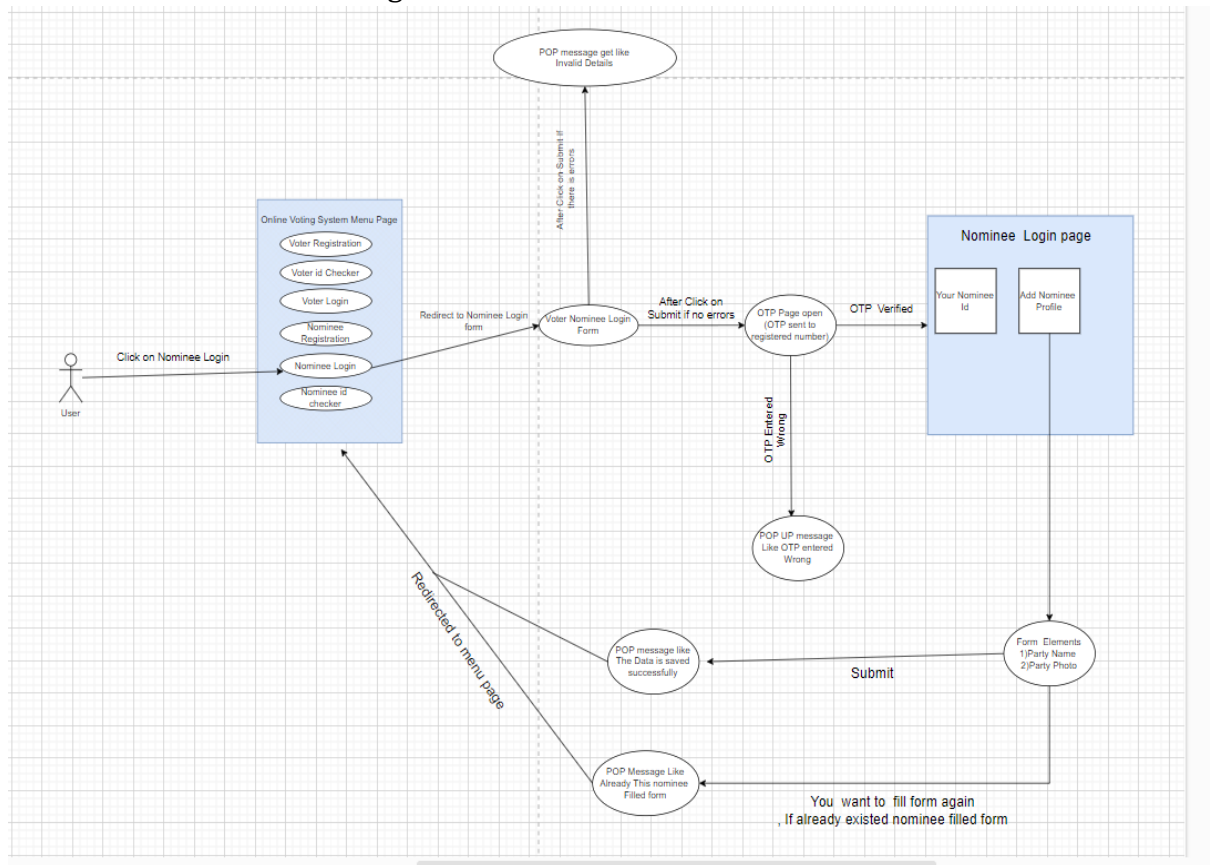


Figure 7: Nominee Login

2.2.2.7 User Nominee Id Checker

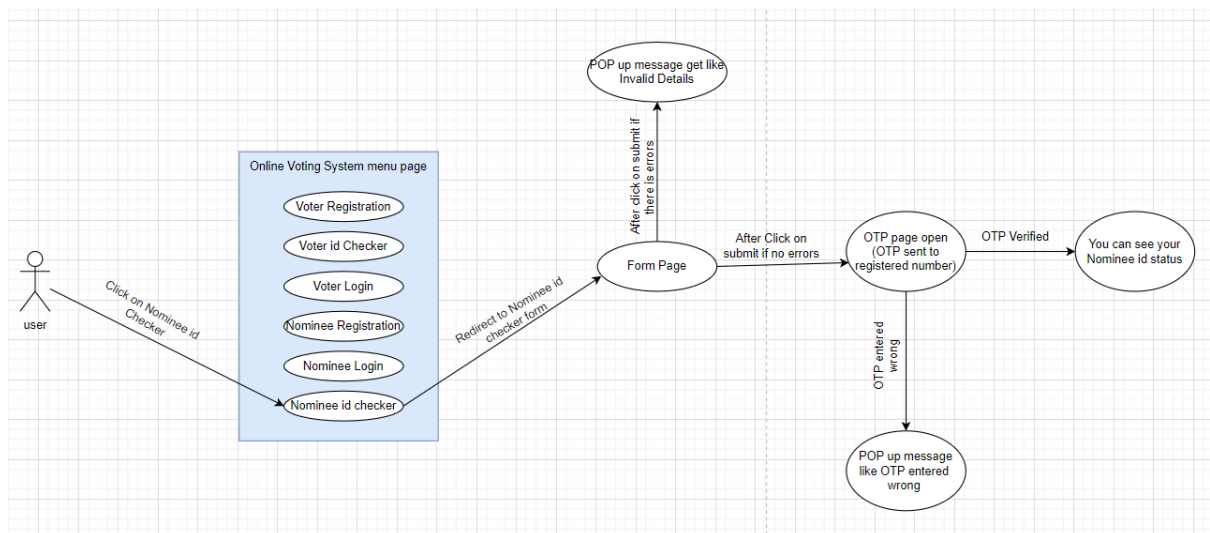


Figure 8: Nominee Id Checker

2.2.3 Use Case Diagrams (Administration)

2.2.3.1 Administration menu page

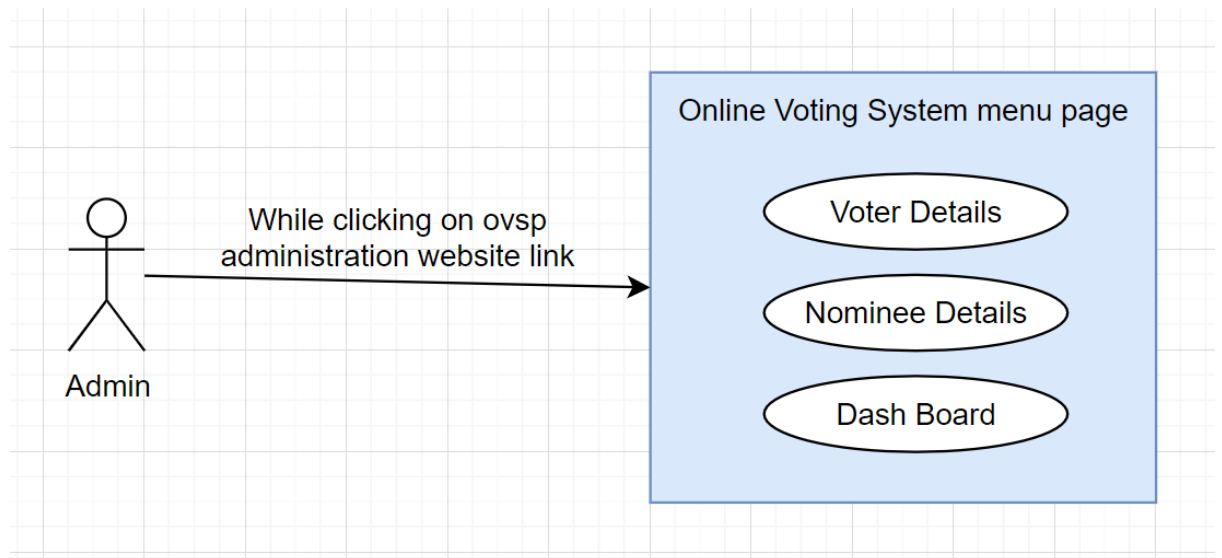


Figure 9: Administration menu page

2.2.3.2 Voter Details

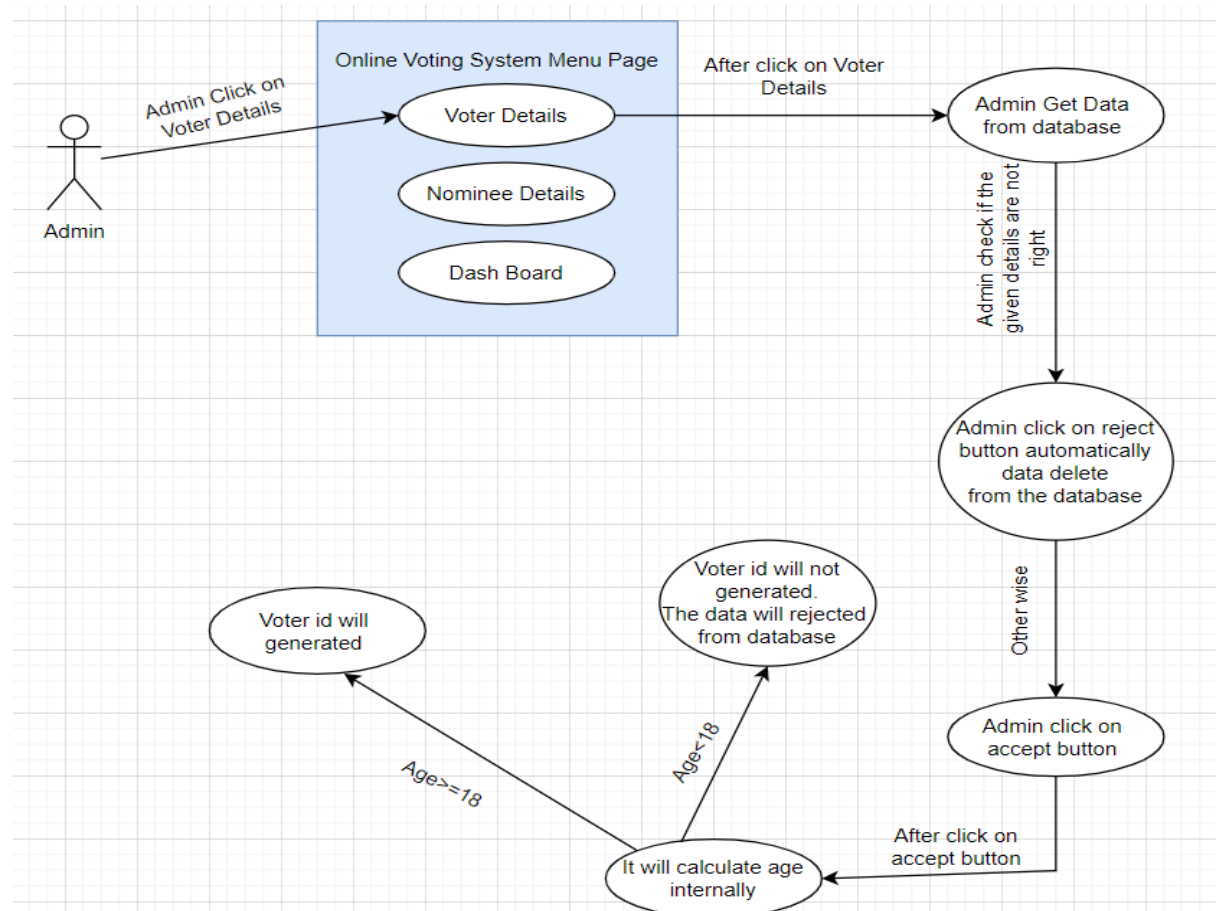


Figure 10: Voter Details

2.2.3.3 Nominee Details

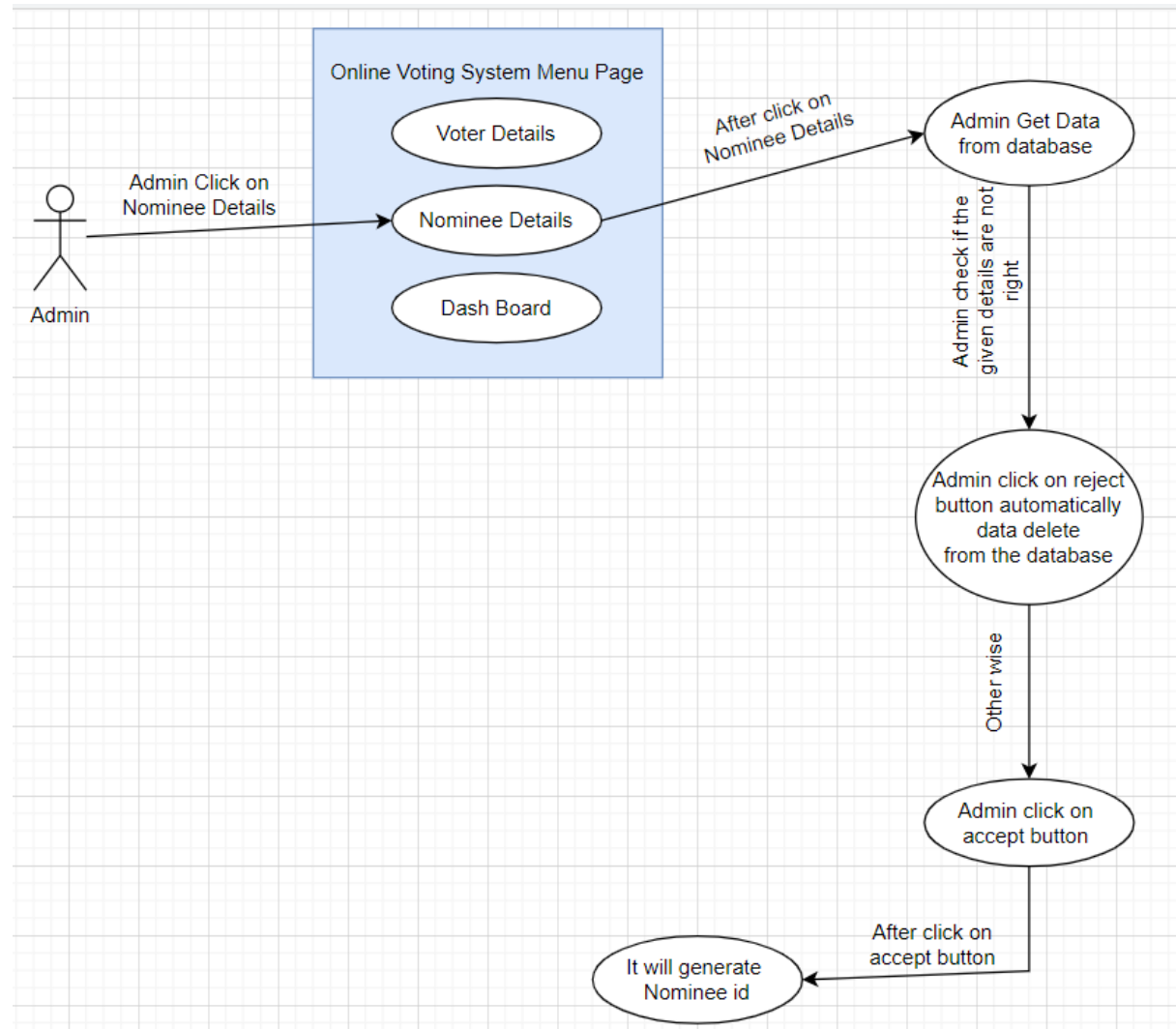


Figure 11: Nominee Details

2.2.3.4 Dash Board

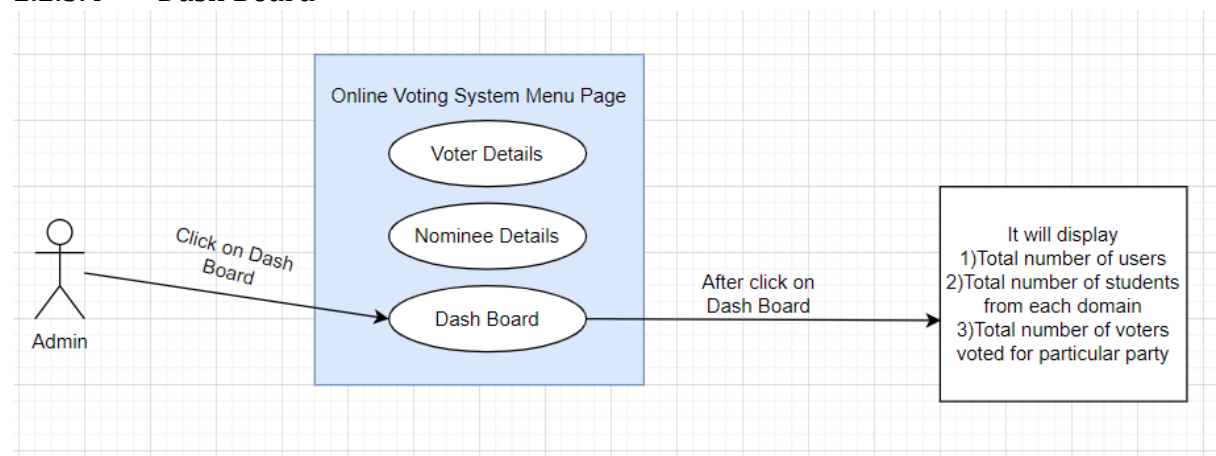


Figure 12: Dash Board

2.2.4 Use Case Descriptions / Introductions

2.2.4.1 Voting System for Universities

An online voting system tailored for universities and educational institutions. The system allows students, faculty, and staff to participate in various polls, surveys, and student government elections electronically. It should offer secure authentication, ensuring that only eligible voters can participate. The system should also support multi-candidate elections, vote tracking, and result generation, enabling transparent and fair decision-making processes within the academic community.

2.3 User Characteristics

2.3.1 Voters

Eligible voters can access the voting system and enter into the ballot system. In ballot system where the voter can able to see the nominees participated. Here you can vote single person to the nominees present in the given ballot system

2.3.2 Administration

Admin can get the data from database and admin can only generate the voter id and nominees' id based on the given voters' data correctly or not. Admin can modify and delete the data. And also, he can access the results by using dashboard.

2.4 Constraints

2.4.1 User Interface Constraints

Using this system is fairly simple and intuitive. A user familiar with basic browser navigation skills should be able to understand all functionality provided by the system.

2.4.2 Hardware Constraints

The system should work on most home desktop and laptop computers which support JavaScript and HTML5.

2.4.3 Software Constraints

The system will be intended to run on Firefox 4 and above, Google Chrome 10 and above and Internet Explorer 8 and above.

2.4.4 Data Management Constraints

System shall be able to interface with other components according to their specifications.

2.4.5 Operational Constraints

The system is limited by its operating server in terms of the maximum number of users it can support at a given time.

2.4.6 Design Standards Compliance

The system shall be implemented in PHP.

2.5 Assumptions and dependencies

Most of the Voting portals have a lot of redundant features which are rarely used in a voting portal. Our new system focuses on the features which are most important to the users of a voting system along with introduction of some new features which other portals lacks.

2.6 ER Diagram

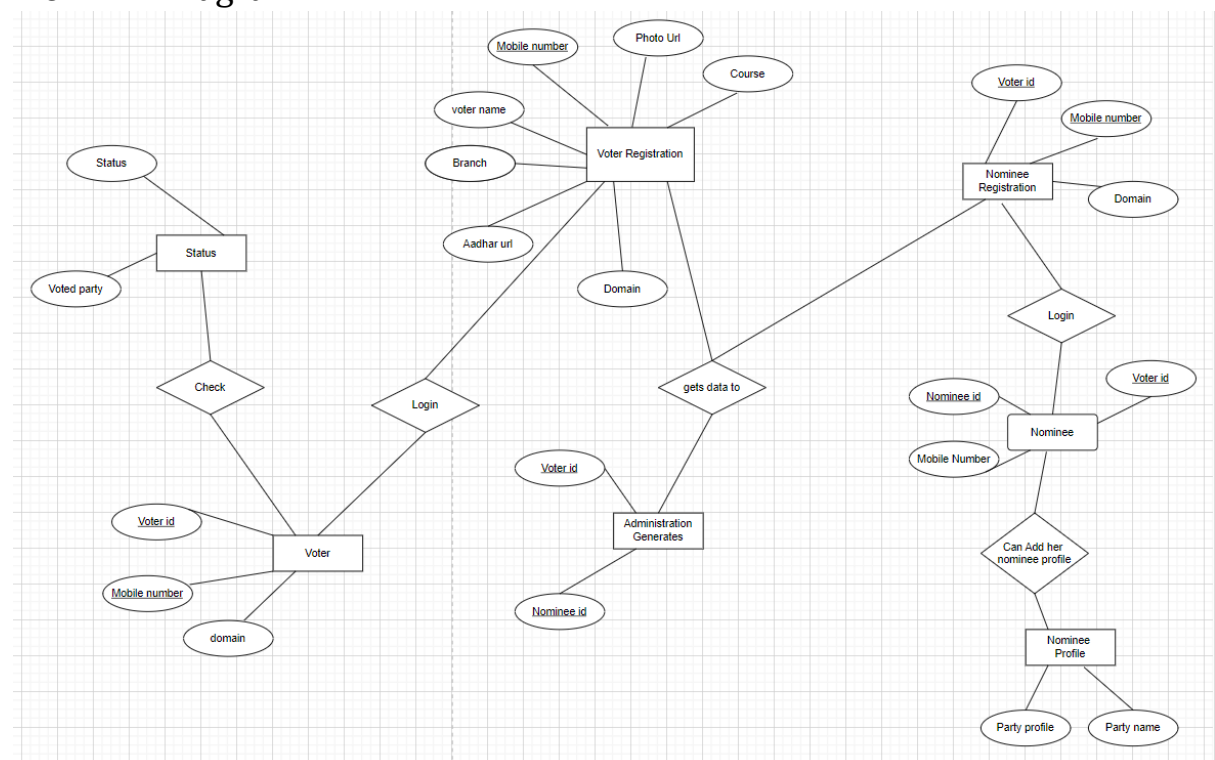


Figure 13: ER Diagram

3. Specific Requirements

3.1 External Interface

3.1.1 Web Server

- Apache will be used as web server
- The user inputs data via the web server using HTML forms
- The web server executes the PHP as a module and PHP script retrieves the post data if available
- The web server receives information back from the PHP script
- The web server displays a HTML page as a result to the end-user.

3.1.2 PHP Application

The actual program that will perform the operations is written in PHP. All data will be stored in a database.

3.1.3 MySQL Database

It's an open-source SQL database to store all data which communicates with the application on the server.

3.2 Functional Requirements

3.2.1 Voter Register

purpose	Before login into website, registration is must and should
User	User can create own profile
Input data	Upload aadhar and profile image, name, dob, branch, domain, mobile number
Output data	Registered successfully
Invariants	Data is uploading into the server

Pre-conditions	Profile and aadhar image must and should be in the format of jpg, jpeg(or) png. And duplicate mobile numbers are not accepted.
Post-conditions	The data entered in the form is directly stored in the voter database
Basic flow	User enter into the covsp website and click on voter register you will get form where you can enter the required details and submit it. You will get otp to registered number and the uploaded files are transfer from server to user's computer.

3.2.2 Voter id checker for user

purpose	Before voter login you need to check your voter id.
User	Registered users can check their voter id
Input data	User name and mobile number
Output data	User can get their voter id with their user's name
Invariants	The user and voter id data
Pre-conditions	Enter valid details and valid OTP message send to your mobile number
Post-conditions	If the verified documents and data what you have entered correctly you will get voter id.
Basic flow	When you click vid checker present in the menu page you will be redirected into the

	voter id login form. After filling details and submitted the form, you will get OTP. after submitted OTP you will get voter id.
--	---

3.2.3 Voter login

Purpose	For entering into the ballot system to vote the particular nominee.
User	Registered and voter id user can only login.
Input data	Vid number, user name, mobile number.
Output data	User can get into the ballot system.
Invariants	The login data
Pre – conditions	Entered valid data and OTP message send to your mobile number
Post – conditions	The user has entered into ballot system successfully
Basic flow	When you click on voter login present in the menu page you will be redirected into voter login form. After filling details and submitted the form, you will get OTP. after submitted OTP you will enter into ballot system.

3.2.4 Ballot system

Purpose	Users can vote
User	Users those are successfully completed voter login.

Input data	You can click on the vote button for the particular nominee.
Output data	User can get pop up message like successfully completed your vote.
Invariants	User and the ballot system itself.
Pre conditions	Before click on vote read instructions carefully provided in that web page.
Post conditions	After completion of reading instructions, you can click on the vote button.
Basic flow	After submitted voter login form you will get ballot system where the participated nominees will be present and then click on vote button correspondent to the nominee.

3.2.5 Nominee Registration

Purpose	Users can Nominee
User	Those you have voter id those users can only nominee
Input data	Voter id, select domain, mobile number
Output data	Registered successfully
Invariants	Data is uploading into the server
Pre – conditions	Enter valid voter id and correspond to mobile number
Post conditions	The data entered in the form is directly stored in the nominee database
Basic flow	User enter into the covsp website and click on nominee register you will get form

	where you can enter the required details and submit it. You will get otp to registered number and the data is saved in database.
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3.2.6 Nominee Id Checker

purpose	Before nominee login you need to check your nominee id.
User	Registered nominee users can check their nominee id
Input data	Voter id and mobile number
Output data	User can get their Nominee id with their user's name
Pre-conditions	Enter valid details and valid OTP message send to your mobile number
Post-conditions	It verified details what you have entered correctly then you will get nominee id.
Basic flow	When you click nominee id checker present in the menu page you will be redirected into the nominee id login form. After filling details and submitted the form, you will get OTP. after submitted OTP you will get nominee id.

3.2.7 Nominee Login

Purpose	It is used to add nominee party and nominee logo
User	Registered and voter id and nominee id user can only login.

Input data	Vid number, Nid number, mobile number.
Output data	User can get the form to add nominee. After filling the form, you will get popup message like registered successfully
Pre – conditions	Entered valid data and OTP message send to your mobile number
Post – conditions	The user has entered into nominee adding form.
Basic flow	When you click on nominee login present in the menu page you will be redirected into nominee login form. After filling details and submitted the form, you will get OTP. after submitted OTP you will enter into nominee add form page.

3.2.8 Voter Details (Administration)

Purpose	It is used to generate voter id to the particular user
User	Admin can access these details
Input Data	Click on accept or reject buttons.
Output Data	If the admin clicks on accept button it will generate voter id and display on the admin screen. If the admin clicks on reject button it deletes the entire record from the database
Pre conditions	Admin can check whether the enter details correct or not

Post conditions	After click on accept button. Internally it calculates the age. If age \geq 18 then it generates voter id otherwise it deletes the records automatically
Basic flow	Admin enter into the admin covsp website and click on voter details it will get entire data from the database. Based on the data the admin can accept or reject the application

3.2.9 Nominee Details (Administration)

Purpose	It is used to generate Nominee id to the particular user
User	Admin can access these details
Input Data	Click on accept or reject buttons.
Output Data	If the admin clicks on accept button it will generate nominee id and display on the admin screen. If the admin clicks on reject button it deletes the entire record from the database
Pre conditions	Admin can check whether the enter details correct or not
Post conditions	After click on accept button. It generates nominee id otherwise it deletes the records automatically
Basic flow	Admin enter into the admin covsp website and click on

	nominee details it will get entire data from the database. Based on the data the admin can accept or reject the application
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3.2.10 Dash Board (Administration)

Purpose	It is used to see the overall results of the voting system
User	Admin can access these details
Output Data	It will display results individually according to their domain.

3.3 Performance Requirements

The system should support at least 100 concurrent users. This statement provides a general sense of reliability when the system is under load. It is important that a substantial number of users be able to access the system at the same time, since a voting portal is important to vote the nominees. The times when the system will be under the most stress is likely during a greater number of voters accessing the link. Therefore, it must be able to handle at least 100 concurrent users.

3.4 Logical Database Requirements

All data will be saved in the database: voter details and nominee details, profiles. The database allows concurrent access and will be kept consistent at all times, requiring a good database design.

3.5 Design Constraints

1. The communication between the portal software and the database will be in SQL.
2. The portal layout will be produced with HTML/CSS.
3. The product will be written in PHP.
4. The source code must follow the coding conventions of PHP.

3.6 Software System Attributes

The source code must follow the coding conventions of PHP.

1. The apache web server
2. The PHP application
3. The MySQL database
4. The database should remain consistent at all times in case of an error.

3.6.1 Reliability

The reliability of the overall program depends on the reliability of the separate components.

3.6.2 Availability

The system should be available at all times, meaning the user can access it using a web browser, only restricted by the down time of the server on which the system runs. In case of a hardware failure or database corruption, a replacement page will be shown. Also, in case of a hardware failure or database corruption, backups of the database should be retrieved with the MySQL server and saved by the administrator.

3.6.3 Security

Generating OTP to the registered mobile number.

3.6.4 Maintainability

MySQL is used for maintaining the database and the Apache server takes care of the site. In case of a failure, a re-initialization of the program is recommended.

3.6.5 Portability

Apache, PHP and MySQL programs are practically independent of the OS-system which they communicate with. The end-user part is fully portable and any system using any web browser should be able to use the features of the application