ABSTRACT

We are developing an on-line voting system by taking advantage of centralized database with a web interface. The main concept of this project is to build a website , which will be able to allow people to cast their vote through on-line. Time saving , working load reduced , information available at time and it provides security for data.

In a democratic country like India we are not getting 100% of voting. People are not ready to poll their vote because of many factors like people can't go to the polling stations to cast their vote(especially aged persons and physically challenged people). People may be at remote places

There are several issues with traditional paper based voting like ridging votes during election , insecure or inaccessible polling stations , inadequate polling materials and also inexperienced personnel.

This On-line Voting System seeks to address the above issues. With this system , the citizens may get ample time during the voting period.

Every citizen is registered first and all the details are managed at centralized database. And at the time of elections the citizens will be login through their credentials and cast their vote

ACKNOWLEDGMENT

A successful project is a fruitful culmination of efforts of many people. Some directly involved and others who have quietly encouraged and extended their invaluable support throughout its progress.

We would also like to convey our heartfelt thanks to our **Management** for providing us with the good infrastructure laboratory facility, qualified and inspiring staff whose guidance was of great help in successful completion of this project.

We are extremely grateful and thankful to our beloved **Principal Dr. K E Prakash** for providing a congenial atmosphere and also the necessary facilities for achieving the cherished goal. We feel delighted to have this page to express my sincere thanks and deep appreciation to **Prof.Nishamitha M.R**, **Head of the Department, Artificial Intelligence And Machine Learning And Data Science,** for her valuable guidance, keen insert and constant encouragement throughout the entire period of this project work.

We would like to thank my project guide **Mrs.Nishmitha M.R**, guide Head of the department, **Artificial Intelligence And Machine Learning And Data Science** for her valuable guidance and constant support throughout the project work.

We are thankful to all teaching and non-teaching staff for allowing us to successfully carryout the project work.

Finally, we also thank our family and friends who provided a lot of support in this project work.

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CHAPTER 1

INTRODUCTION

Elections allow the populace to choose their representatives and express their preferences for how they will be governed . The election system must be suf;iciently robust to withstand a variety of fraudulent behaviours and must be suf;iciently transparent and comprehensible that voters and can- didates can accept the results of an election. The voting system must be tamper-resistant

Online voting systems are software platforms used to securely conduct elections.

As a digital platform

, they eliminate the need to cast votes using paper or having to gather in person . Presently voting is performed by using ballot paper and the counting is done manually , hence it consumes a lot of time . There can be possibility of invalid votes.

In our proposed systems , voting and counting is automated . It makes the election process easy and secure

It also protect the integrity of every vote by preventing voters from being able to vote multiple times . Voting services helps to save time , stick to best practices , and meet internal requirements and/or ex- ternal regulations , such as third-party vote administration needs .

1. MOTIVATION

Elections play a major role in the country. Usually elections follow the Traditional Paper based Voting or EVMs . Citizens has to move to the polling stations to cast their vote. It leads to gathering of peo- ple in large number .In this pandemic situation its not safe to encourage gatherings. And also we cannot avoid the elections. People at remote areas from their native places find difficult to reach their hometowns to cast vote due to various reasons . Aged people cannot travel to polling stations and wait for longer time in queue to cast vote. In order t overcome all these issues ,we decided to find a solution and that is on-line vot- ing system.

3. PROBLEM DEFINITION

Now-a-days people find very less time to cast the vote .And there are several issues where India, democratic country is unable to get polling of 100%.In order to make voting easy and secure , online voting system is

helpful. Voter has to register first and then login .Voter is authenticated and then proceed to voting page . Voter cast the vote and logout. One can view the results at any instance of time .

4. OBJECTIVES OF PROJECTS

- As everything became on-line now-a-days , making the voting process As everything became on-line now-a-days , making the voting process also on-line
- To make more convenient for the people to vote especially for people who stay at remote places like army or people who migrated to other places for their studies or occupations
- To prevent tampering of votes To Provide high security by using secured authentication mechanisms

5. LIMITIONS OF PROJECTS

We are developing a website for casting the vote online. While casting the vote the most important thing is security. We are providing security through the otp authentication . OTP also provides strong secu- rity but it would be more secure if we use fingerprint detection and cornea detection and map it with the aadhar database details.

6. ORGANIZATION OF DOCUMENTATION

In the document,

1) The first section provides the literature survey done for the project
2) Second section discusses the requirements of the project
3) Third section shows the project design
4) Fourth section discusses the results of the project
5) The fifth section discusses the validation and the last section gives the conclusion of the project

CHAPTER 2

LITERATURE SURVEY

1. INTRODUCTION

Now-a-days , there are tons of things we do online , from shopping to doing of any of;icial ar- rangement .So , why don't we make the elections also to be online .

In this pandemic situation , gatherings is very danger . So , if we are trying to make voting process online

Vote at any time from anywhere : Today's way of living doesn't leave much free time . We havelittle to no time to do anything or go anywhere . So it would be good that may be giving the chance to the members of our country to cast their vote in just a few minutes , without the need to go to a certain place , would be a good option . So probably online voting would be better op- tion . Unlike traditional voting , that makes voters go to a speci;ic time in order to vote, online voting allows them to cast their vote at anytime of the day and from any place , just with the need of an Internet connection

Boost Participation : As a result of previous point , choosing online voting for election will more likely boost the participation . Many people can participate in the elections to cast their vote so that the turnout increases

Less Physical Infrastructure : When running a online voting system , we can avoid the need forall the physical infrastructure usually required on a traditional voting . No need of paper, print- ing , physical urns or staff. This may therefore lead to a lower monetary investment Fast and easy votes tally : Since the counting of votes takes place through machines(automated), human errors can be avoided . And also the process becomes more faster so that the results are also processed faster.

Security : Most important factor for voting systems . In our proposed system security is pro- vided by OTP authentication .We have observed some major components provided in their website. Some of them are

Voters : Target users of the website. Website provides platform to utilize their right to vote. Services : It allows citizens to cast the vote .

Results: Every citizen can view the results of elections at any point of time Security: Security is provided by the website using the otp authentication technique We used html, css, javascript for the front end development and PHP for connecting to the database and storing the data.

Visual Studio code is the tool used for writing the code code.XAMPP is also used for developing the project since it is a free and open source cross platform.It consists APACHE HTTP server,MARIA DB database, and interpreters for scripts written in the PHP and Perl programming languages.We have gone through the OTP authentication codes and chose to implement the random OTP generation.

2. EXISTING SYSTEM

In our country , we are following the traditional paper based voting system or EVMs which has several drawbacks .Whatever the system we follow , we need to move to the polling stations to cast the vote and it leads to gathering of people in larger number.

3. PROPOSED SYSTEM

In order to overcome the issues of existing voting system that is traditional paper based voting system we are developing an online voting system by taking the advantage of centralised database with a web interface . Online Voting System enables voter to cast the from any remote place

It will help to increase the level of population to cast the vote that is it increases the total turn- out

High security is provided since aadhar number is taken as primary key User is authenticated by OTP

Voting on internet provides a safe and private channel that allows all users t participate on equal terms Increased accessibility for residents abroad and for persons with dif;iculties in travelling or re-duced mobility.

The reduction in organizational and implementation costs signi;icantly increases the ef;iciency of online voting compared to traditional voting system

Since the counting of votes takes place through machines(automated), human errors can be avoided And also the process becomes more faster so that the results are also processed faster

Advantages :

It removes the possibility of invalid and uncertain votes which, in many cases, are the root causes of dispute and election appeal.

- It makes the procedure of counting the votes much faster than the traditional system.

CHAPTER 3

SYSTEM ANALYSIS

1. INTRODUCTION

Analysis is gathering and interpreting the data needed for the dental clinic and website.It is used for understanding how the system works. It gives a good understanding about the requirements of the project.

Software Requirement Specification: It captures complete description of how system works and the requirements of the system

User Requirement: The website should allow the voter to cast the vote and give services only to the genuine user.

Genuine user should be identified via OTP authentication. User should be able to cast the vote only once and only during the time of elections.

2. SOFTWARE REQUIREMENTS

Operating System: Windows,Linux,Mac Languages:PHP,HTML,CSS,Java Script Database:MYSQL

Server:Apache

Tools:Visual Studio Code,XAMPP Browser:All compatable browsers

3. HARDWARE REQUIREMENT:

Processor:core i3 or higher RAM:2GB

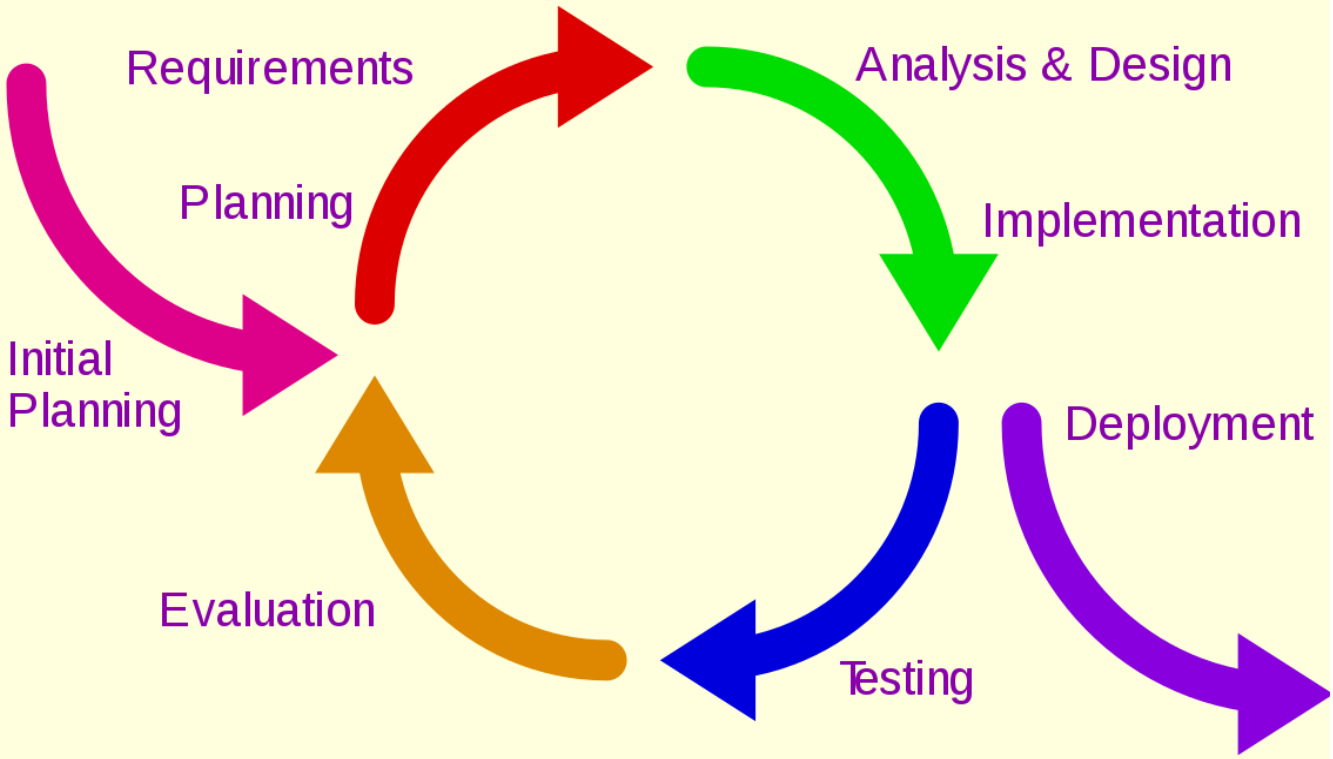
Hard disk:25GB

4. ARCHITECTURE PROJECT

Admin maintains a database to maintain voters data.Voters cast the vote by registering through the website. To reduce the manual work we have built a online voting website for a elections to automate the elections process like generating the results. It works as follows:

A new user should register to access the services provided by the website. Then the user has to login. Later, user will be verified by sending an OTP to his/her email. If user is a genuine user .

The information given by the user will be stored in the database.so it can be retrieved whenever



required. Users can cast the vote online, view the results at any point of time.Once the users are with their activities they can log out of the website.In this way, their work becomes easier, sec.

5. TECHNOLOGIES USED

HTML:

HTML stands for Hyper Text Markup Language.HTML is the standard markup language for creating Web pages.HTML describes the structure of a Web page.HTML consists of a series of elements.HTML ele- ments tell the browser how to display the content.

CSS:

CSS stands for Cascading Style Sheets.CSS describes how HTML elements are to be displayed on screen, paper, or in other media.CSS saves a lot of work. It can control the layout of multiple web pages all at once.External stylesheets are stored in CSS files

JS: JS(Java Script) is used for:

(i)Client side validation of form elements instead of sending data to server every time.

(ii)To insert new elements such as text box etc. to the website on the go.

(iii) To provide users notifications from the server.

(iv) To load data in the background from the server and loaded on to the page side.

PHP:

PHP is an acronym for "PHP: Hypertext Preprocessor".PHP is a widely-used, open source scripting language.PHP scripts are executed on the server.PHP is free to download and use

PHP can be used for the following:

- PHP can generate dynamic page content
- PHP can create, open, read, write, delete, and close files on the server
- PHP can collect form data
- PHP can send and receive cookies
- PHP can add, delete, modify data in your database
- PHP can be used to control user-access
- PHP can encrypt data

CHAPTER 4

DESIGN

1. INTRODUCTION

The design phase shows how the project has been implemented.The components involved in the project.In this one or more designs are developed which gives the apparent results for the project. UML(Unified Modelling language) is a standard language for specifying, visualising, constructing, and documenting the artifacts of software systems.UML diagrams are simple to understand.UML represents two different types of diagrams:

1) Structural diagrams:

These diagrams represents how the system is going to be built.These define the structure of the sys- tem and the components involved in the system.It shows the static features of the system **The structural diagrams are:**

- Class diagrams
- Object diagrams
- Components diagrams
- Deployment diagrams

2) Behavioural diagrams:

These diagrams represent the dynamic behaviour of the system.The interactions in the system are shown using the behavioural diagrams

The behavioural diagrams are:

- Activity diagrams
- Interaction diagrams
    1. Sequence diagram
    2. Collaboration diagram
- Usecase diagrams

We have chosen class diagram,Usecase diagram and Sequence diagram for showing the static.

The behavioral diagram for an Online Voting System describes how actors (voters, authentication service, voting application, audit/tally service, and administrators) interact over time to accomplish voting tasks and handle exceptions. It begins with the voter initiating a session by requesting the ballot, followed by the authentication flow where credentials and an OTP are verified; on success the voter is shown the ballot

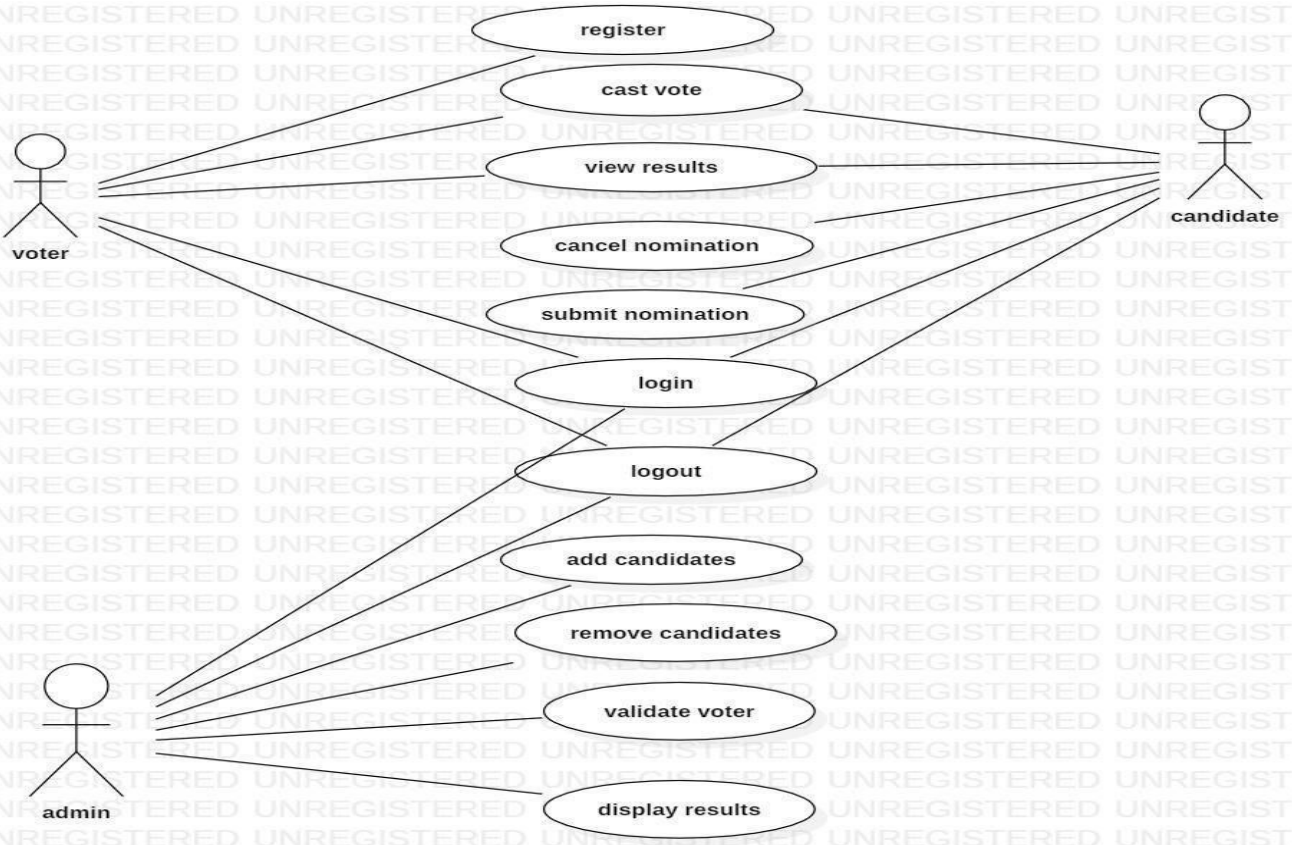
and may select candidates, while on failure the flow returns error and retry states. When the voter submits their choice the system validates the input, checks for double-vote prevention, and either rejects the submission or moves the vote into a “store encrypted ballot” state; a cryptographic receipt (hash) is generated and returned to the voter as confirmation.Simultaneously the audit component appends an immutable log entry for the submission event and the session ends, but the vote remains in a protected “pending-tally” state until the election closes. At close, the tally service transitions through a controlled sequence—lock voting, verify integrity of stored ballots, decrypt or aggregate as appropriate, compute results, and publish signed results—while logging each step for non-repudiation. The administrator actor can trigger setup and tally actions, receive alerts from monitoring states (e.g., suspicious activity, high error rates), or move the system into maintenance or emergency shutdown states if an integrity or availability threat is detected Error and security-handling pathways (failed OTP, network timeouts, integrity mismatches) are explicitly modeled so each failure either retries, alerts admins, or safely aborts without compromising ballot secrecy, making the behavioral diagram a clear map of normal, exceptional, and administrative flows across the election lifecycle.

2. DFD / ER / UML DIAGRAM

UML Diagrams:

Usecase Diagram:

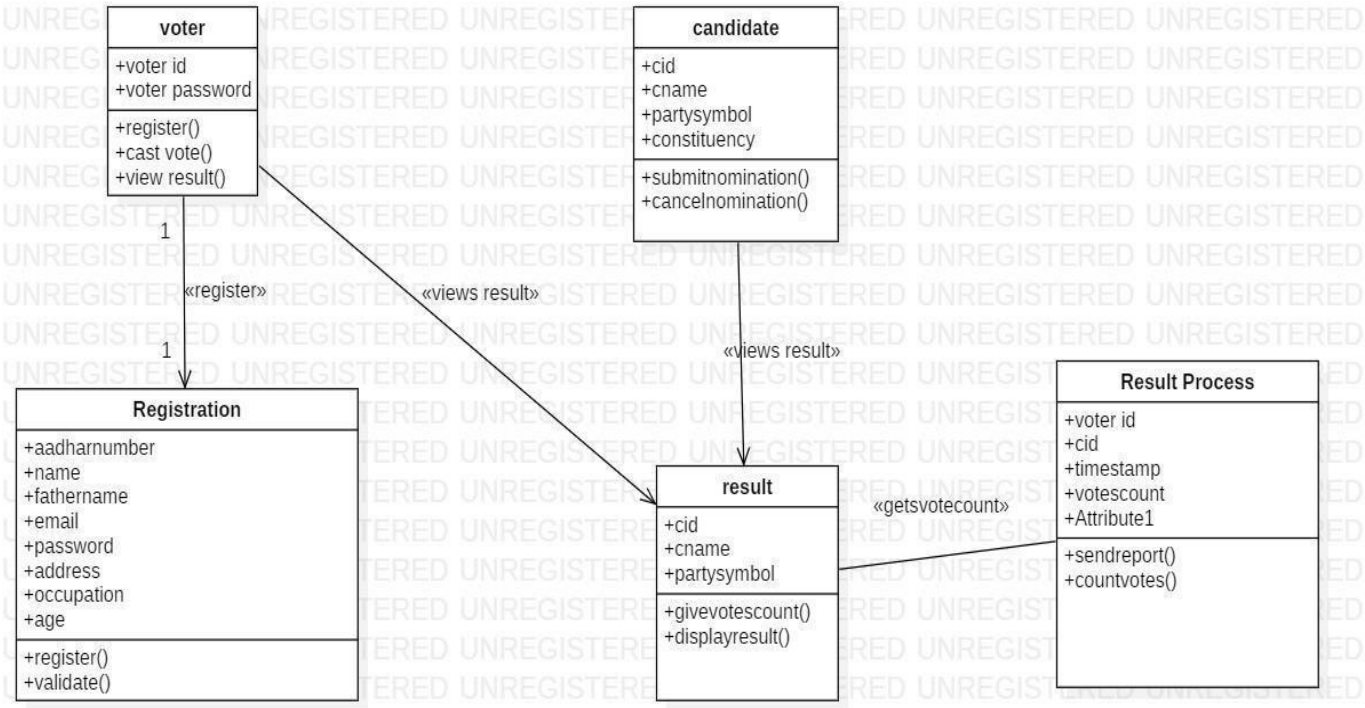
Usecase diagram represents the user interactions with the system.It shows customer relationship with different usecases. It helps in designing a system from users perspective.It also shows the different function- alities provided by the system.



This usecase diagram shows that a voter can login and logout of the system ,cast the vote, update profiles, manage votes, manage candidates, manage voters, display results.

Class Diagram:

It represents the structure of the system showing systems classes, attributes, operations and relation- ships among among the objects.It is a basic notation for other structure diagrams in UML



This class diagram has the following classes:

1) voter

2) candidate

3) result

4) process

5) registration

One or more voters can use the web app and cast the vote.

Sequence diagram:

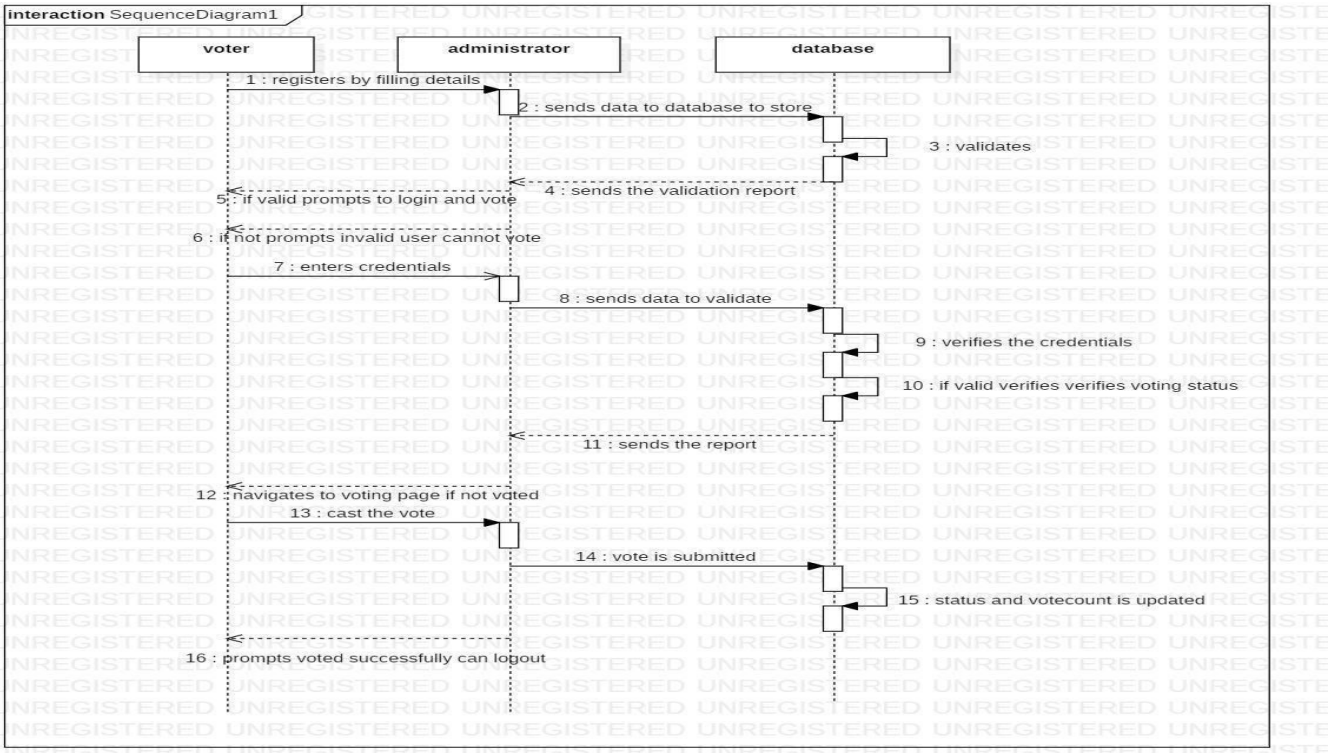
It is a type of interaction diagram which shows how a group of objects work together in the system.

It shows how objects and components interact with each other to complete a process.

This sequence diagrams represent how the interactions in our website takes place once a valid

user logins into the system, the system checks if the credentials are present in the database.If he is a valid user he will be navigated to next page where he can perform different operations like casting votes, managing their details viewing results.Once he finished his tasks he can logout of the system

.



CHAPTER 5

IMPLEMENTATION AND RESULT

5)1. INTRODUCTION

Implementation is the carrying out plans mentioned in our system planning.Implementation gives the opportunity to see the plans become a reality.Implementation is executing the project.It makes the reality and helps in understanding the project.

5)2. EXPLANATION OF KEY FEATURES

The main function used in our project is OTP authentication. We have generated a random OTP and sent to mail using PHP mailer and mail function .Once the OTP is sent the user can type the OTP and again login into the system and access the services.

5)3. METHOD OF IMPLEMENTATION

We have followed iterative model for implementing the project.

In the Iterative model, iterative process starts with a simple implementation of a small set of the software requirements and iteratively enhances the evolving versions until the complete system is implemented and ready to be deployed.

An iterative life cycle model does not attempt to start with a full specification of requirements. Instead, de- velopment begins by specifying and implementing just part of the software, which is then reviewed to identify further requirements. This process is then repeated, producing a new version of the software at the end of each iteration of the model.

Iterative process starts with a simple implementation of a subset of the software requirements and iteratively enhances the evolving versions until the full system is implemented. At each iteration, design modifications are made and new functional capabilities are added. The basic idea behind this method is to develop a sys- tem through repeated cycles (iterative) and in smaller portions at a time (incremental)

Iterative and Incremental development is a combination of both iterative design or iterative method and in- cremental build model for development. "During software development, more than one iteration of the soft- ware development cycle may be in progress at the same time." This process may be described as an "evolu- tionary acquisition" or "incremental build"

In this incremental model, the whole requirement is divided into various builds. During each iteration, the development module goes through the requirements, design, implementation and testing phases. Each release of the module adds function to the previous release. The process continues till the complete system is ready as per the requirement.The key to a successful use of an iterative software development lifecycle is rigorous validation of require- ments, and verification & testing of each version of the software against those requirements within each cycle of the model. As the software evolves through successive cycles, tests must be repeated and extended to verify each version of the software.

Like other SDLC models, Iterative and incremental development has some specific applications in the soft- ware industry. This model is most often used in the following scenarios −

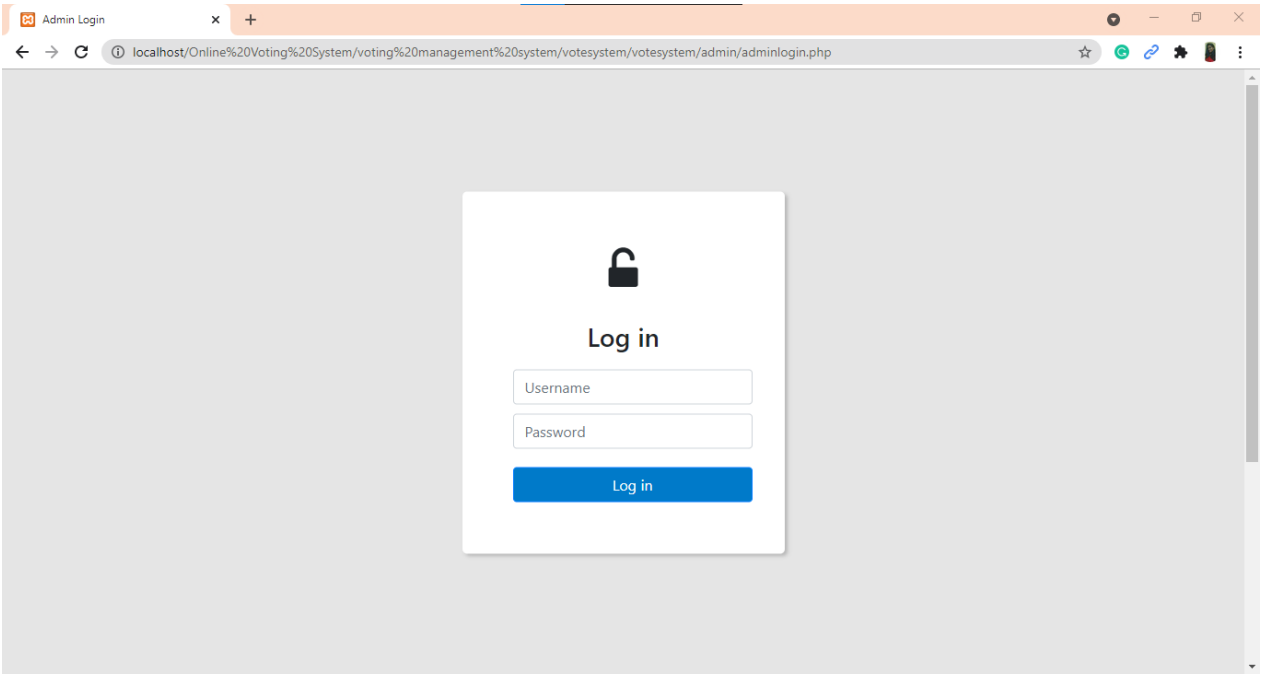
- Requirements of the complete system are clearly defined and understood.
- Major requirements must be defined; however, some functionalities or requested enhancements may evolve with time.
- There is a time to the market constraint.
- A new technology is being used and is being learnt by the development team while working on the project.
- Resources with needed skill sets are not available and are planned to be used on contract basis for specific iterations.
- There are some high-risk features and goals which may change in the future

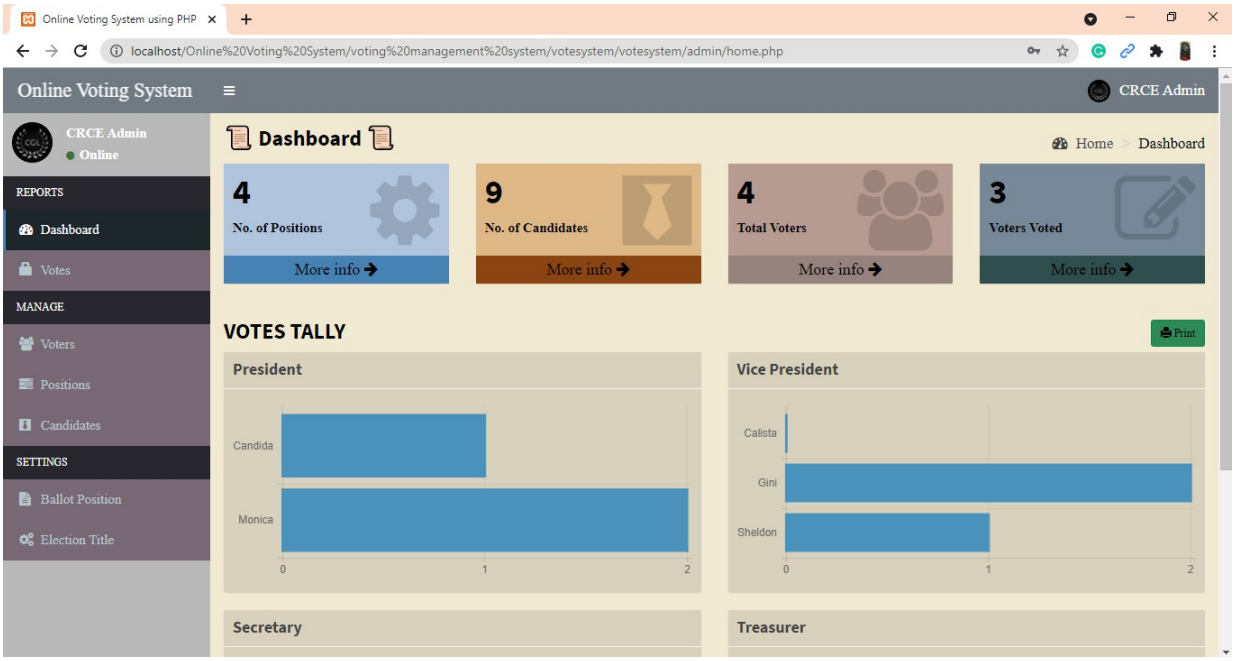
5)4.OUTPUT SCREEN

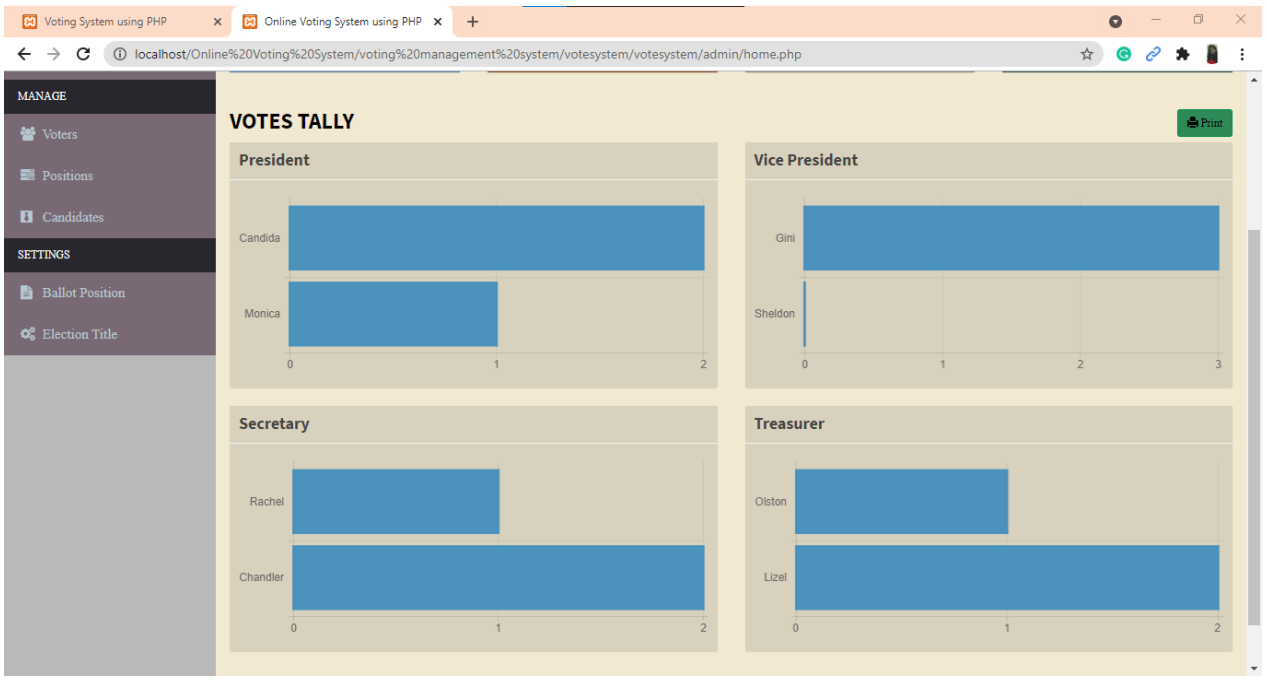
The Online Voting System provides a set of user-friendly output screens that guide both voters and administrators throughout the election process. The first screen is the Login Page, where users must enter valid credentials to access the system, ensuring security and preventing unauthorizes access.

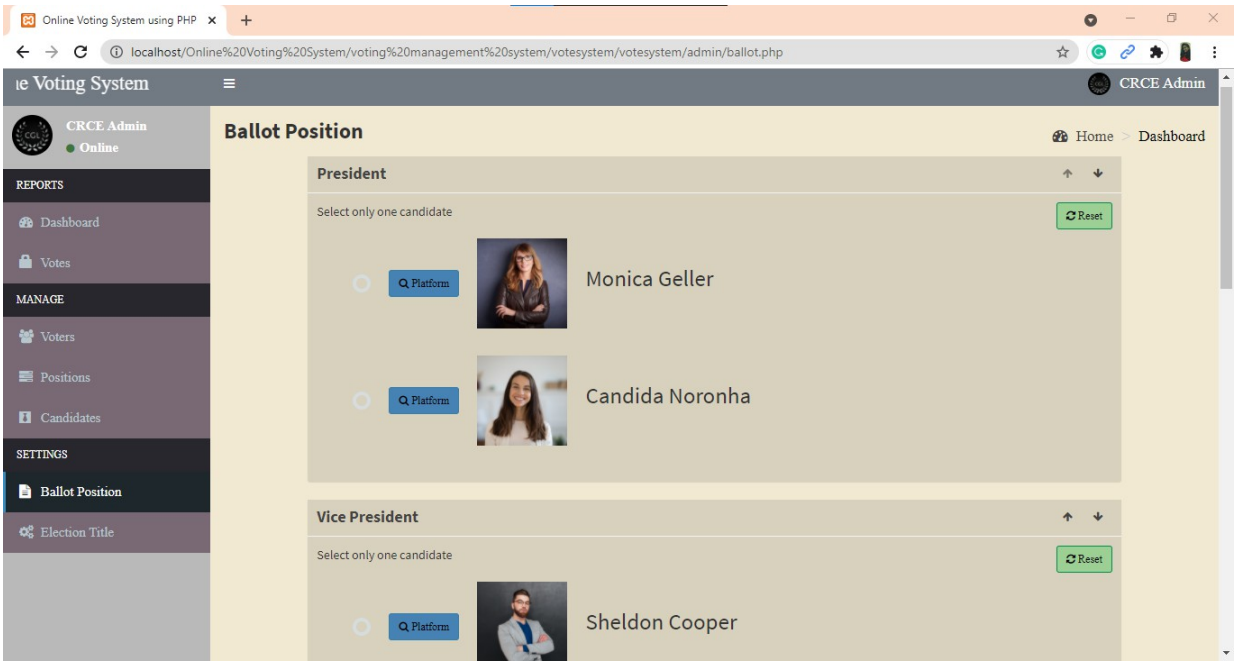

Online Voting System
Home Register Login Results
ONLINE VOTING
WELCOME TO ONLINE VOTING WEBSITE
CHOOSE WHAT'S BEST FOR YOUR COUNTRY

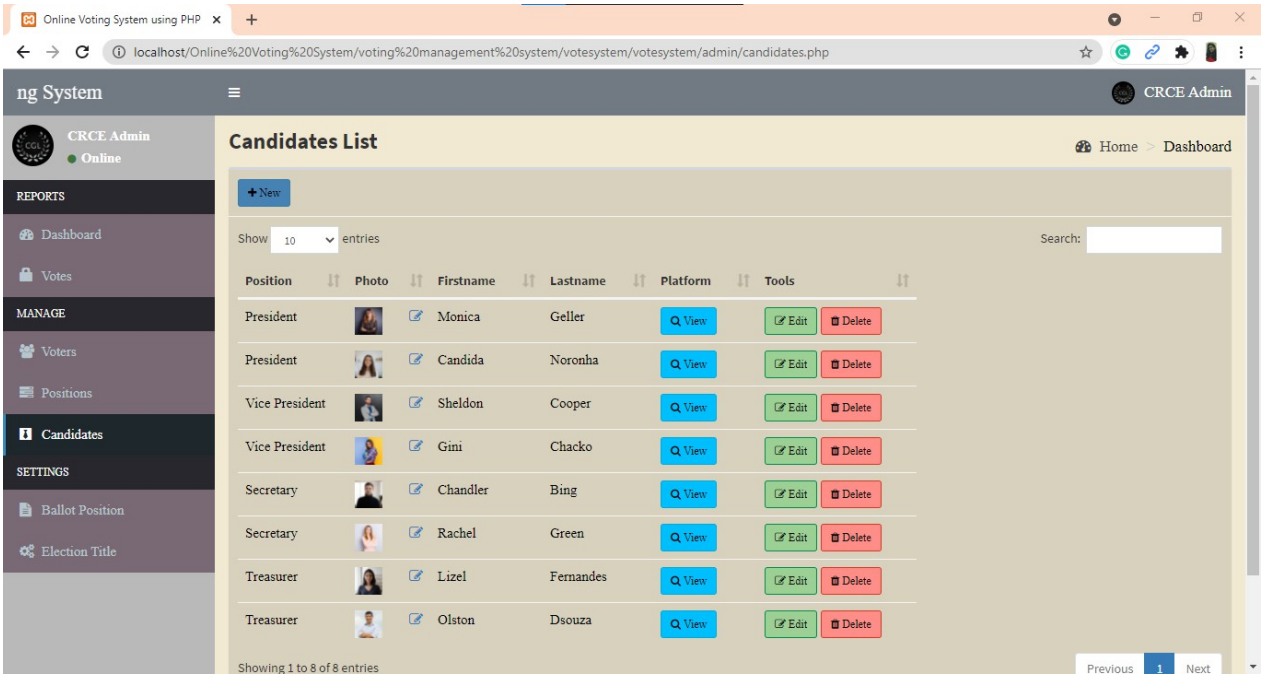

WELCOME TO ONLINE VOTING WEBSITE
CHOOSE WHAT'S BEST FOR YOUR COUNTRY
WORRIED ABOUT HOW TO CAST THE VOTE!!!
HAVE A LOOK

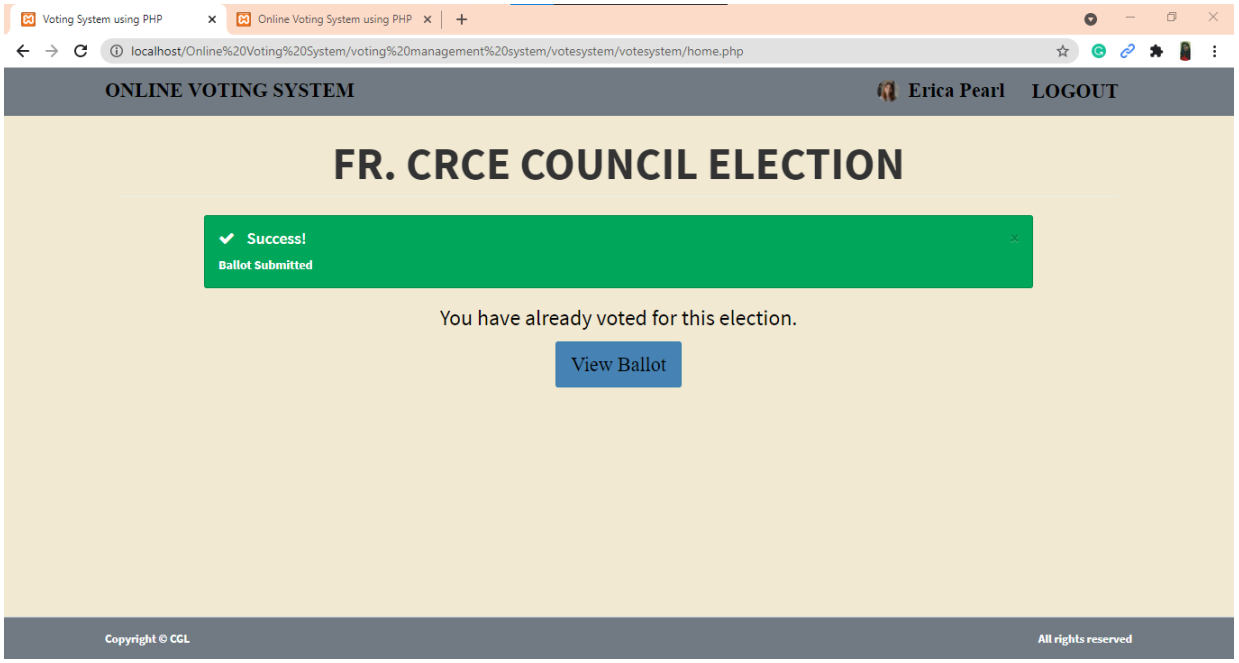

Admin Login
localhost/Online%20Voting%20System/voting%20management%20system/votesystem/votesystem/admin/adminlogin.php
Log in
Username
Password
Log in


Online Voting System using PHP
localhost/Online%20Voting%20System/voting%20management%20system/votesystem/votesystem/admin/home.php
Online Voting System
CRCE Admin
CRCE Admin
Online
REPORTS
Dashboard
Votes
MANAGE
Voters
Positions
Candidates
SETTINGS
Ballot Position
Election Title
Dashboard
Home > Dashboard
4
No. of Positions
More info
9
No. of Candidates
More info
4
Total Voters
More info
3
Voters Voted
More info
VOTES TALLY
Print
President
Candida
Monica
0
1
2
Vice President
Calista
Gini
Sheldon
0
1
2
Secretary
Treasurer


Voting System using PHP
Online Voting System using PHP
localhost/Online%20Voting%20System/voting%20management%20system/votesystem/votesystem/admin/home.php
MANAGE
Voters
Positions
Candidates
SETTINGS
Ballot Position
Election Title
VOTES TALLY
Print
President
Candida
Monica
Vice President
Gini
Sheldon
Secretary
Rachel
Chandler
Treasurer
Olston
Lizel


Online Voting System using PHP
localhost/Online%20Voting%20System/voting%20management%20system/votesystem/votesystem/admin/ballot.php
CRCE Admin
Online
REPORTS
Dashboard
Votes
MANAGE
Voters
Positions
Candidates
SETTINGS
Ballot Position
Election Title
Ballot Position
Home > Dashboard
President
Select only one candidate
Reset
Platform
Monica Geller
Platform
Candida Noronha
Vice President
Select only one candidate
Reset
Platform
Sheldon Cooper


Online Voting System using PHP
localhost/Online%20Voting%20System/voting%20management%20system/votesystem/votesystem/admin/candidates.php
ng System
CRCE Admin
CRCE Admin
Online
REPORTS
Dashboard
Votes
MANAGE
Voters
Positions
Candidates
SETTINGS
Ballot Position
Election Title
Candidates List
Home > Dashboard
+ New
Show 10 entries
Search:
Position Photo Firstname Lastname Platform Tools
President Monica Geller View Edit Delete
President Candida Noronha View Edit Delete
Vice President Sheldon Cooper View Edit Delete
Vice President Gini Chacko View Edit Delete
Secretary Chandler Bing View Edit Delete
Secretary Rachel Green View Edit Delete
Treasurer Lizel Fernandes View Edit Delete
Treasurer Olston Dsouza View Edit Delete
Showing 1 to 8 of 8 entries
Previous 1 Next


Voting System using PHP
Online Voting System using PHP
localhost/Online%20Voting%20System/voting%20management%20system/votesystem/votesystem/home.php
ONLINE VOTING SYSTEM
Erica Pearl LOGOUT
FR. CRCE COUNCIL ELECTION
Success!
Ballot Submitted
You have already voted for this election.
View Ballot
Copyright © CGL
All rights reserved

5.6AUTHENTICATION OUTPUT SCREENS:

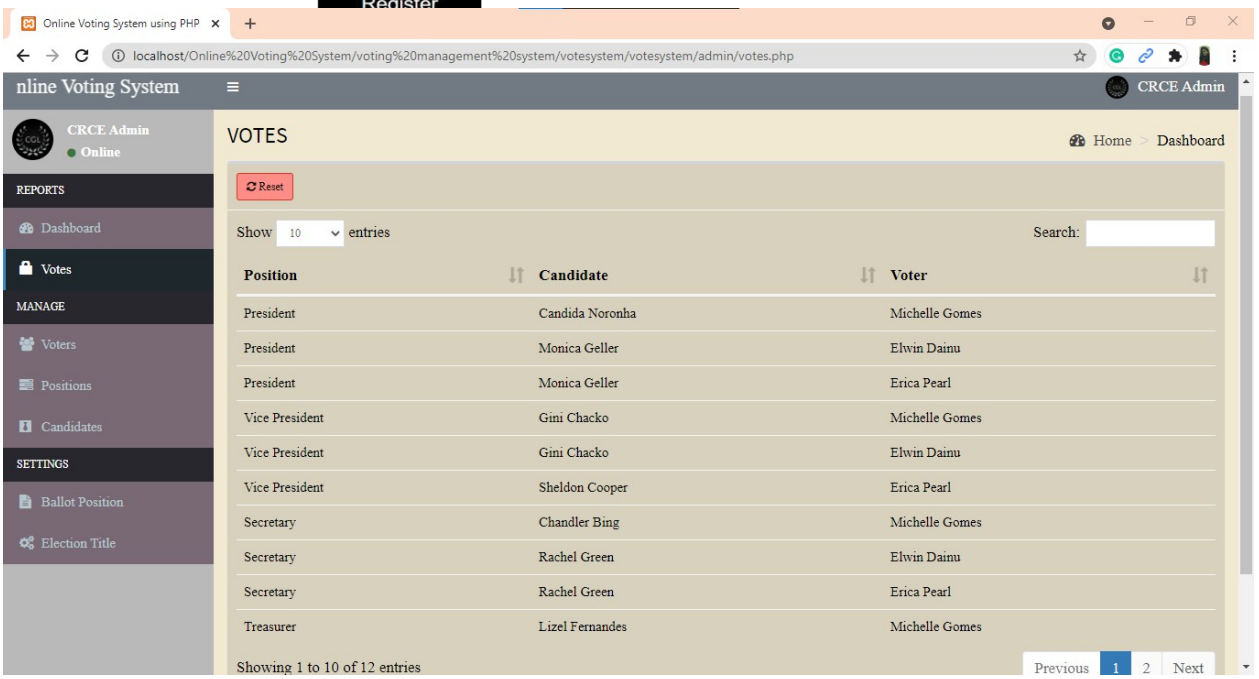
VOTER ALREADY EXISTS
PLEASE LOGIN

Login

INVALID CREDENTIALS

NO SUCH USER PLEASE DO REGISTER

Register



5.6 RESULT ANAYLISIS

We have made a detailed analysis of various results and their expected output of our project. The given below are the results we have identified in the result analysis.

1.collecting registration details:

We collect all the user registration details which they fill in the registration form and that user details we store in our database.

2.Validate Registration form:

At the time of new user registration, we validate the form so that already registered users cannot be regis- tered again

3.Collect login details:

A user can log in once he has successfully registered with us and we verify the user credentials with the user details which we have stored in our database

4.Authenticate user:

Using OTP(One Time Password) authentication we authenticate the user. So that we can know that our user was genuine or not.

5.Access Services:

Once the user is successfully login with our site then user can access all our services like casting the vote, viewing the results .

6.Logout:

A user can log out at any time after successful login.

Expected	Actual
Collect registration details	Yes
Validate registration form	Yes
Collect login details	Yes
Authenticate user	Yes
Access services	Yes
Log out	Yes

CHAPTER 6

TESTING AND VALIDATION

6.1. INTRODUCTION

Validation is ensuring that all the customer needs are satisfied .Software testing is evaluating software re- quirements against requirements gathered from users and system specifications. Testing can be done using two approaches:

1. Functionctionality testing
2. Implementation testing Black box testing:

In black box testing the functionality of the system is tested.Here we do not check how the project is implemented.For a certain input if expected output matches with the actual output then the project is success otherwise it has bugs.It is also known as behavioural testing.

White box testing:

In white box testing the implementation is also checked.It is also known as structural testing.In this design and code structure are known to the tester.

6.2. DESIGN OF TEST CASES AND SCENARIOS

Test ID	Operations	Input	Expected Output	Actual Output	Result
1	Login	User name and password are taken as input	Navigate to authentica- tion page	Navigates to au- thenticatio n page	Pass
2	Register	All inputs are given cor- rect where aadhar number is primary key	Navigate to login page	Navigates to login page	Pass
3	Cast vote	Click	Stores the vote and navigates to thankyou page	Stored the vote and navigates to thankyou	Pass

Test ID	Operations	Input	Expected Output	Actual Output	Result
4	Enter otp	Otp number	Navigates to voting page	Navigates to voting	Pass
5	Logout	Click	Logout	Logouts and shows home page	Pass

6.3. VALIDATION

After the testing phase, following outcomes were achieved.

1) User can access the website at any time.

2) User can cast the vote from any remote area.

3) User can get instance results of elections without any delay.

4) Security is provided with otp authentication and there is no issue of tampering of votes

CHAPTER 7

CONCLUSION

CONCLUSION

We are designing an alternative voting system besides the conventional voting system . Since , todays world has become very familiar with internet and people don't find time to go out for voting

By doing this project we were able to bring a new system for online national voting for our country. With the advent of technology and Internet in our day to day life, we were able to offer advanced voting system to voters both in the country and outside through our online voting system.

We are designing an alternative voting system besides the conventional voting system . Since , todays world has become very familiar with internet and people don't find time to go out for votingGatherings are also very dangerous in this pandemic situations. Providing better solution to overcome the issues with existing system

- On-line web-based voting system which reduces the cost of voting
- Instant results of election
- Higher voter turn-out
- Enables large number of people to cast their vote evn at remote places
- Time saving process
- Improves the accessibility
- Security and Confidentiality

Future Scope:

- It will increase the overall voting percentage
- It will reduce election expenditure
- It can be made more secure by using the advance security methods like biometrics

CHAPTER 8

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