**A Mini Project Report**

**on**

**“Online Voting System”**

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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. Most countries, Kenya not an exception, have problems when it comes to voting.

Some of the problems involved include rigging votes during election, insecure or inaccessible polling stations, inadequate polling materials and also inexperienced personnel. 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.

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**Introduction**

* 1. **Purpose**

The Online voting system (OVS) also known as e-voting is a term encompassing several different types of voting embracing both electronic means of counting votes. Online voting is an electronic way of choosing leaders via a web driven application. The advantage of online voting over the common “queue method” is that the voters have the choice of voting at their own free time and there is reduced congestion. It also minimizes on errors of vote counting. The individual votes are submitted in a database which can be queried to find out who of the aspirants for a given post has the highest number of votes.

As Voting is to be done online it will be feasible for everyone to vote and which will increase voting count as well.

* 1. **Scope**

It is focused on studying the existing system of voting in Kenya 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 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.
  1. **Objective of Work**

The specific objectives of the project include:

* Reviewing the existing/current voting process or approach in Kenya;
* Coming up with an automated voting system in Kenya;
* Implementing a an automated/online voting system;

Validating the system to ensure that only legible voters are allowed to vote

**1.4 Developers’ Responsibility**

1. **Planned approach towards working: -** The working in the organization will be well planned and organized. The data will be stored properly in data stores, which will help in retrieval of information as well as its storage.

2. **Accuracy: -** The level of accuracy in the proposed system will be higher. All operation would be done correctly and it ensures that whatever information is coming from the centre is accurate.

3. **Reliability:** - The reliability of the proposed system will be high due to the above stated reasons. The reason for the increased reliability of the system is that now there would be proper storage of information.

4. **No Redundancy: -** In the proposed system utmost care would be that no information is repeated anywhere, in storage or otherwise. This would assure economic use of storage space and consistency in the data stored.

5. **Immediate retrieval of information: -** The main objective of proposed system is to provide for a quick and efficient retrieval of information

**General Description**

**2.1 Product Function Perspective**

* To reduce error in counting of votes which is manual error.
* To increase the percentage of voting .
* To allow every citizen to vote from any place if he has voting rights.
* To make voting procedure fast, easy and transparent.

**2.2 User Characteristics**

Every user should be:

* Comfortable with Internet Browser.
* He must have brief knowledge of voting system.
* He must also have basic knowledge of English too.

**2.3 General Constraints**

* GUI is only in English.
* Login and password is used for identification of voter.

**2.4 Assumptions and dependencies**

* User must be registered in the list of voters with valid mobile number and Aadhar card.
* User age must be greater than 18.

**General Description**

* 1. **Inputs and Outputs**

According to our proposed online voting system, there are 4 major inputs that are adding voter information, adding candidates information, setting up the election (which can be done by the admin in our case i.e. the election commission) and also casting the vote.

Also, while the registration procedures, the candidates need to fill up a form and give their information and documents as an input.

The output of our system are that the candidates will be registered, the votes will be cast and the voter will be given a unique id so that he/she is not able to vote again once the vote is given to a candidate.

* 1. **Functional Requirements**

1. **Manage Electors**: The fundamental assumption of this system use case is that almost all citizens above a certain age should be able to participate in the election procedure.
2. **Provide Authentication Means**: A fundamental requirement of this system use case is to be able to anticipate for a range of contemporary, along with future, authentication mechanisms.
3. **Manage Candidates**: This system should also be able to manage the candidates in a proper manner.
4. **Provide Party/Candidate Info**: This is an optional use case that can be available either before the voting procedure or during the actual voting.
5. **Cast Vote**: This use case has drawn particular attention due to the problems it poses with regards to security.
6. **Tally Votes**: This system use case deals with the final tally calculation.
7. **Verify Result Integrity**: This use case serves the requests for the verification of the procedure integrity.
   1. **Functional Interface Requirements**

The basic functional interface requirements are mainly related to the above mentioned 7 points.

The interface should be capable of performing these operations and functionalities with utmost ease and security. It should be able to accept the candidate registrations and let the users cast their vote once per individual.

This system interface should also be able to functionally calculate the number of votes casted to each candidate/party very accurately so that there is no bias and a fool proof online voting is held.

* 1. **Specific Requirements**

These are the requirement specific to the voting system and they are listed as follows:

* **Multi-user**: A number of voters can vote simultaneously.
* **Multi-campaign**: A number of elections can be running simultaneously.
* **Accessibility**: The system can be accessed by voters from any location using secure Internet and/or mobile devices.
* **Availability**: The system must have high-availability during an election campaign.
  1. **Performance Constraints**

The performance constraints of an online voting system includes various aspects. The first and the most important constraint is that no voter should be able/allowed to vote more than one time.

Such systems have a large scale usage so the second constraint we require in these systems is security and integrity. Fair voting means and methods are the priority of the system.

A fair number of candidates should be allowed to register into the system and stand for voting and they should only be allowed to register once they enter valid personal information and also provide valid documents for the admin to verify and accept them into the system. The system very strictly requires these constraints for fair and secure functioning.

* 1. **Design Constraints**

1. **Usability**: Many old people are also expected to use this system and usually it is not easy for them to learn new functionality. Therefore, one of the constraints is usability of the system.
2. **Standardised interface**: The placement of buttons, images and information is done is such a manner that it is easy for the user to navigate through the system.
3. **Input validations**: The forms that the voters or candidates fill in this system are fully validated so that it doesn’t accept invalid inputs.
4. **Authority controls to the admin**: This constraint is most important of the whole lot. The admin should be able to edit and monitor the voters and candidates according to his/her will.
5. **Results display**: This should be taken care by the system and it should verify the design integrity so that the results are unbiased and the users can easily view them.
   1. **Acceptance criteria**

Our voting system shall reduce the time spent 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.

**System Design**

**4.1 ER Model**

**Diagram

Description automatically generated**

**Fig 4.1**

This figure (fig. 4.1) shows the particular modules used in our system and how they are interconnected and related to each other.

**4.2 Schema Description**

***loginUsers***

id

username

password

rank

status

Login

***Voter***

Firstname

Lastname

Username

Status

voted

vote

***Candidate***

Id

Fullname

About

Votecount

**Fig 4.2**

This diagram shows the schema description of the system and how each module can access the various functionalities.

**4.3 Database Tables**

**1. Loginusers**

|  |  |  |
| --- | --- | --- |
| **Field Name** | **Data Type** | **Description** |
| Id | int | Unique user Id |
| Username | varchar | Unique username |
| Password | varchar | User password |
| Rank | varchar | To differentiate between admin and user |
| Status | varchar | Active or not |

**2. Voters**

|  |  |  |
| --- | --- | --- |
| **Field Name** | **Data Types** | **Description** |
| First name | varchar | First name of voter |
| Last name | varchar | Last name of voter |
| username | varchar | username |
| status | varchar | Active or not |
| voted | varchar | Voted or not |

**3. Candidates**

|  |  |  |
| --- | --- | --- |
| **Field Name** | **Data Types** | **Description** |
| Candidate id | int | Candidate unique id |
| Full name | varchar | Full name |
| about | varchar | about |
| votecount | int | Total votes for particular candidate |

**4.4 System Flow Chart / Activity Diagram**

Voter

Admin

Login

Login Process

Voter Registration

Information Checking

Voting Process

Final Result

**Fig 4.4**

The above figure (fig. 4.4) represents the whole activity of our system and how the procedures take place.

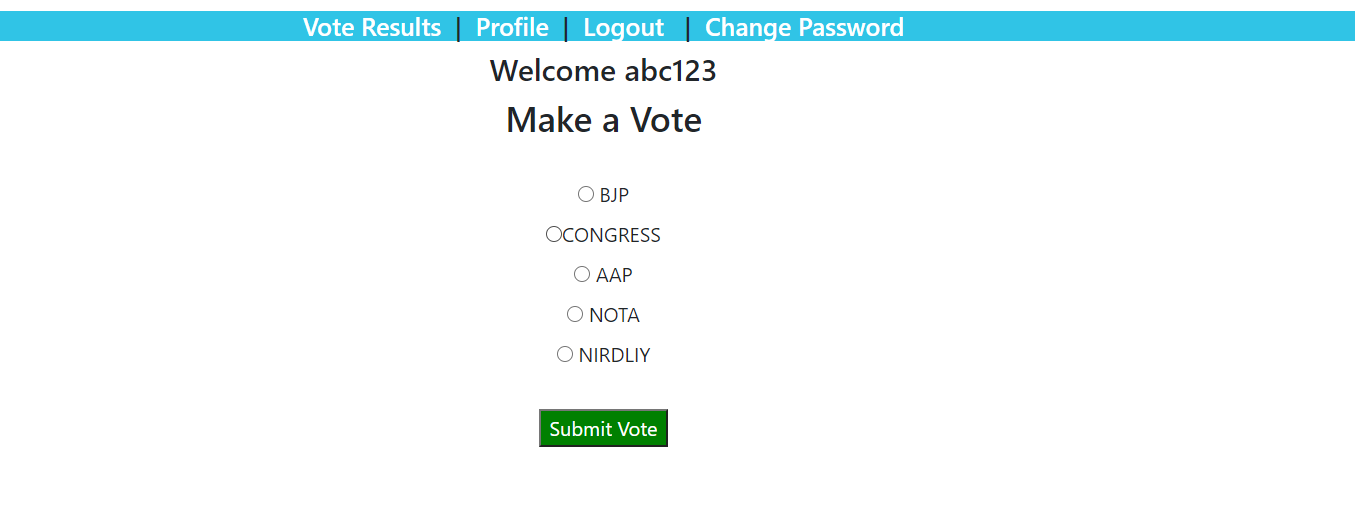
**4.5 User Interface Design**

**Header**

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**Registration WindowGraphical user interface, application

Description automatically generated**

**Voting window**

**4.6 Error Message/Alerts Design**

Successful

Login

Invalid Credential

Failed

You have already voted

Already Voted

Vote

Voting for First time

**Fig 4.6**

This figure shows the criteria of wheatear a particular vote will be casted of it will be failed. Each user can vote only once and not more than that.

**System Implementation**

**5.1 Hardware and Software Platform description**

**Hardware :-**

* **Microsoft Windows 10:**
  + **Processor:**800MHz Intel Pentium III or equivalent
  + **Memory:**512 MB
  + **Disk space:**750 MB of free disk space
* **Ubuntu 9.10:**
  + **Processor:**800MHz Intel Pentium III or equivalent
  + **Memory:**512 MB
  + **Disk space:**650 MB of free disk space

**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. **PHP coding-**This is used for server side Scripting.
3. **Bootstrap, JavaScript –** Bootstrap , JavaScript and CSS are used for designing front end of the system.

**5.2 Tools Used**

1. **Testing:** is done via WAMPSERVER.
2. **Web browsers**: Mozilla Firefox, Google chrome, Opera and Internet Explorer
3. **Sublime Text:** Used for writing Codes.
4. **Reporting Tool** i.e. through Data Report

**5.3 System Verification and Testing**

1. System should support basic version of internet explorer 7 , Google Chrome or any web browser, user should have username details.

2. For testing of data basic validations and constraints are applied on the different input data’s.

3. Verification and testing is done so that no unauthorize user can access the information.

**5.4 Future Work**

1. This Online Voting System can be implemented with Blockchain to increase its security so that it can be used on large scale.

2. Using fingerprint and iris scans for authentication purposed and be applied for more feasible use. Data for the fingerprint scanner and iris can be stored with Aadhaar for its implementation.

3. Moreover online voting system can used webcam for visual authentication.

**5.5 Conclusion**

This Online Voting system will manage the Voter’s information by which voter can login and use his voting rights. The system will incorporate all features of Voting system. Its provide the tools for maintaining voter’s vote to every party and it count total no. of votes of every party. There is a DATABASE which is maintained by the ELECTION COMMISION OF INDIA in which all the names of voter with complete information is stored.

Thus, we have successfully implemented property management system which helps us in managing the tasks performed in buying/selling/renting a property.

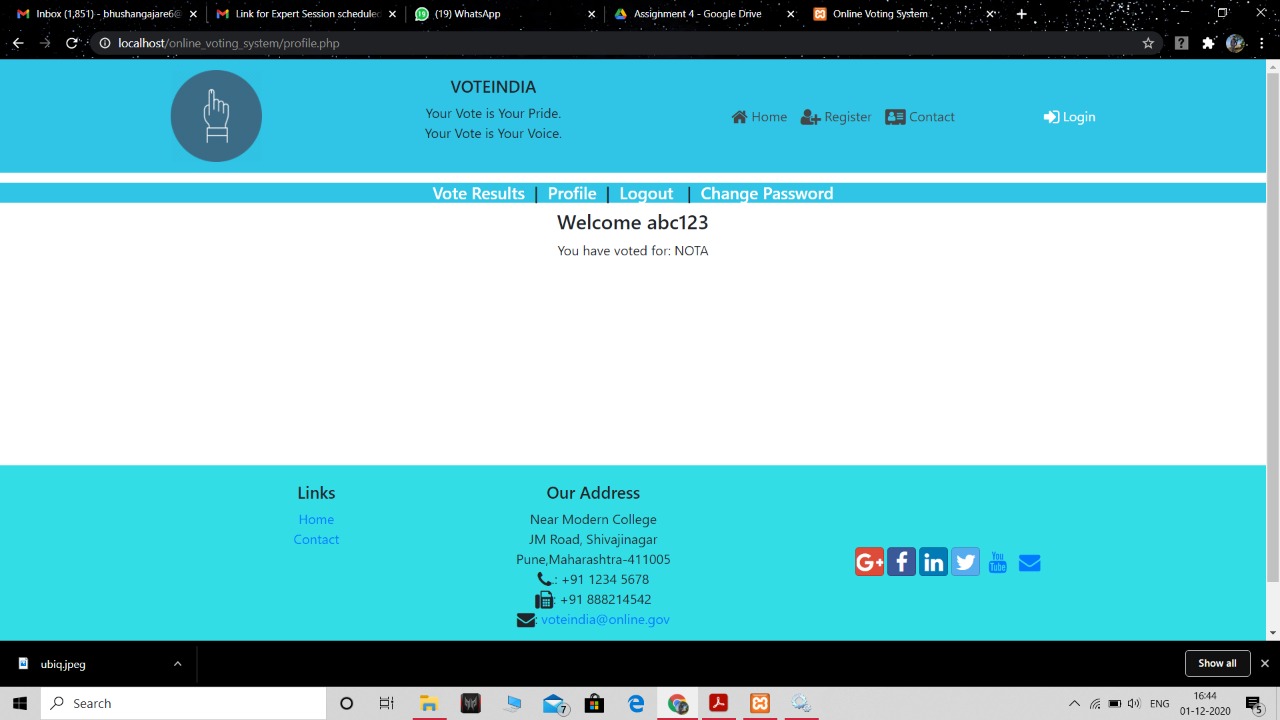
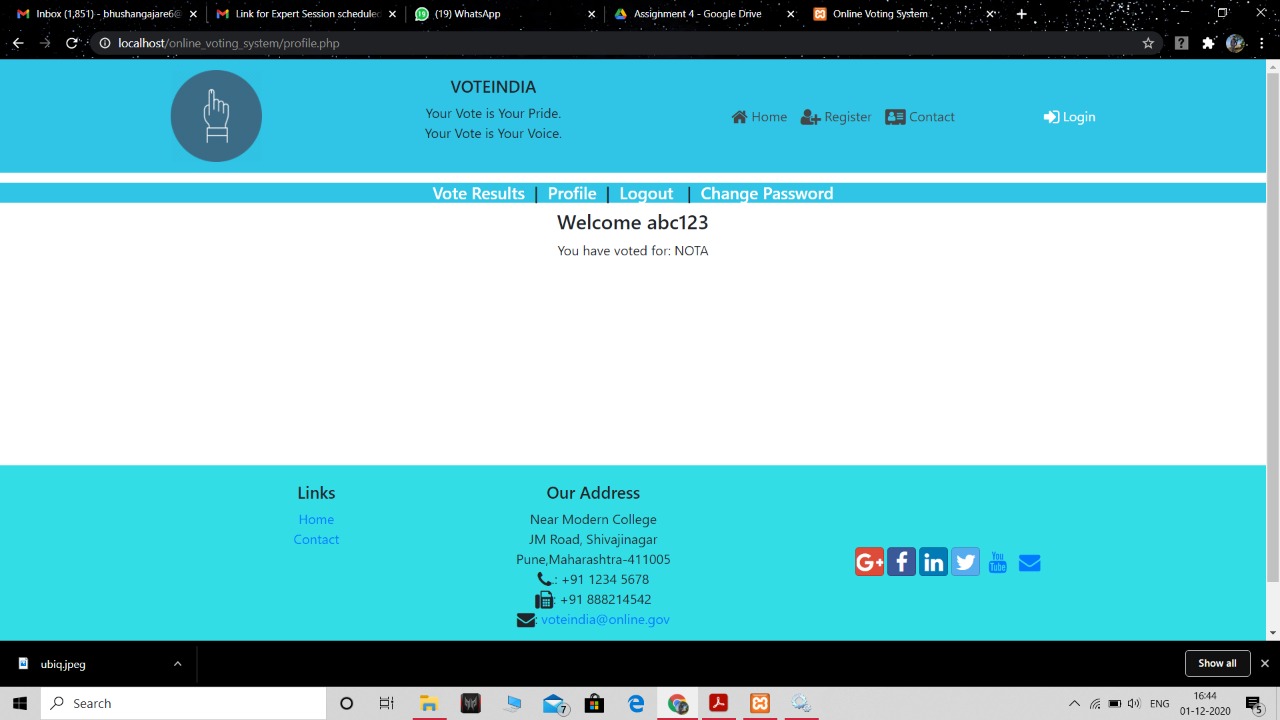
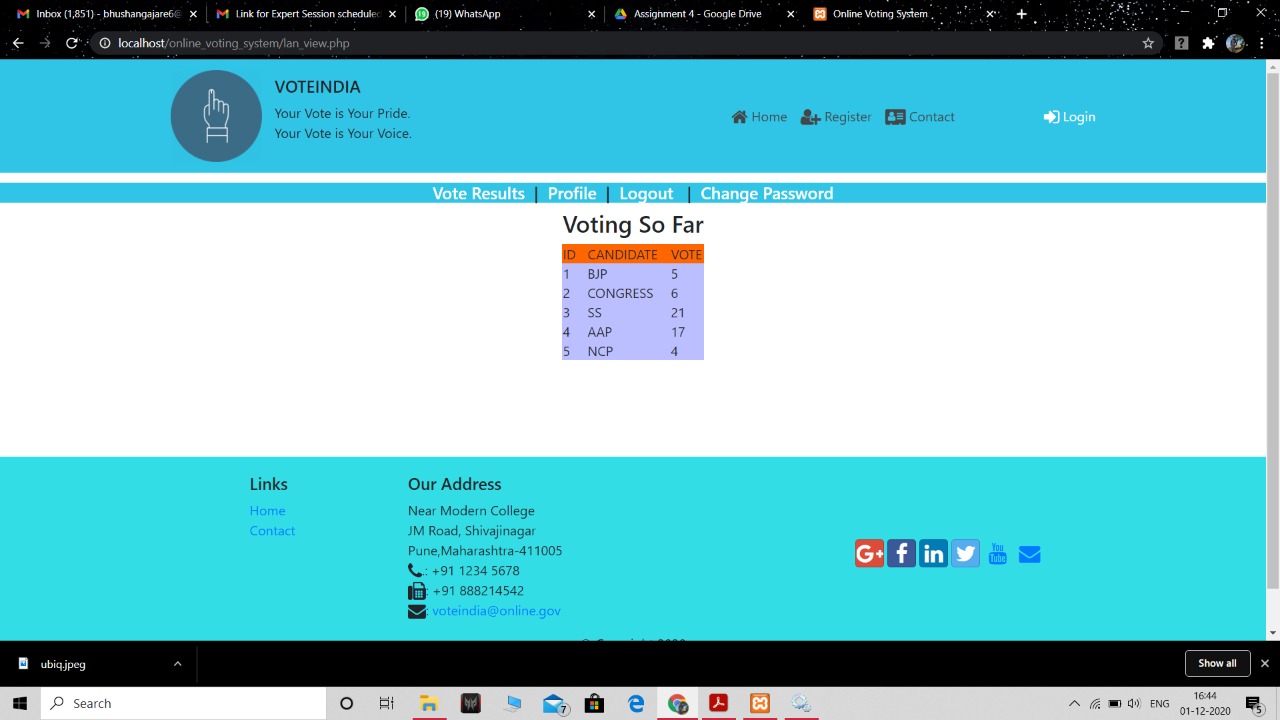
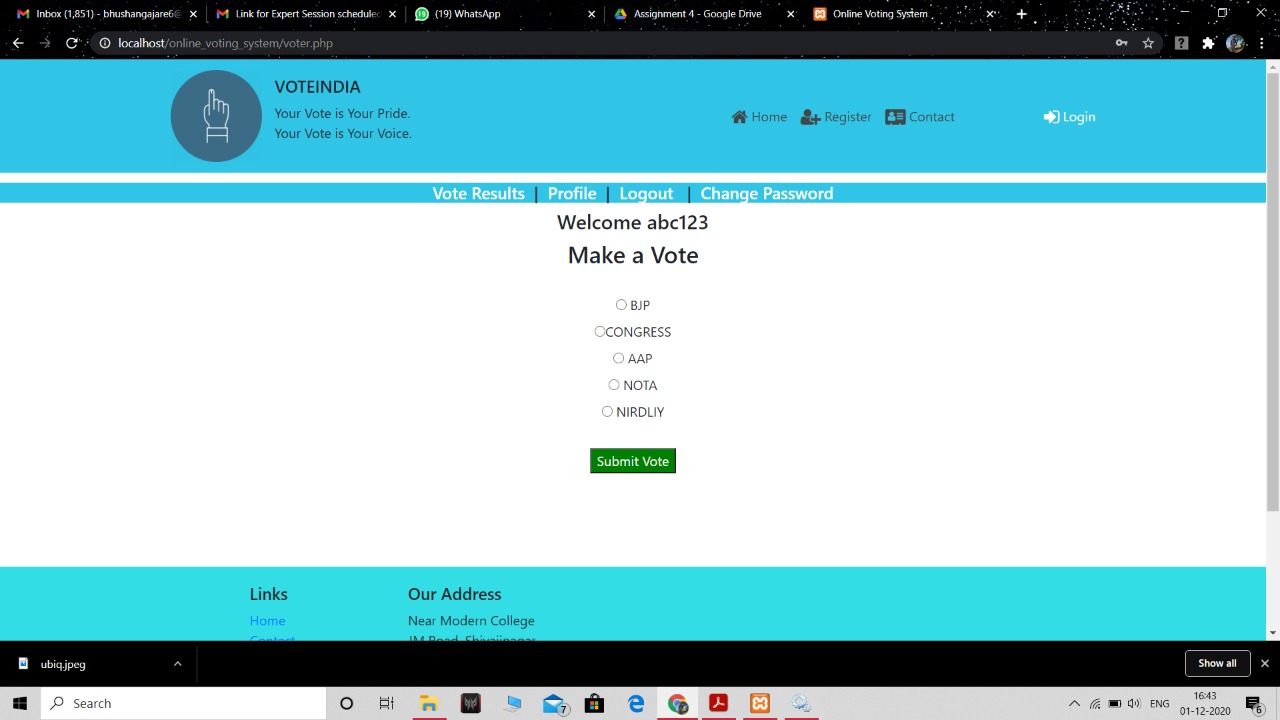
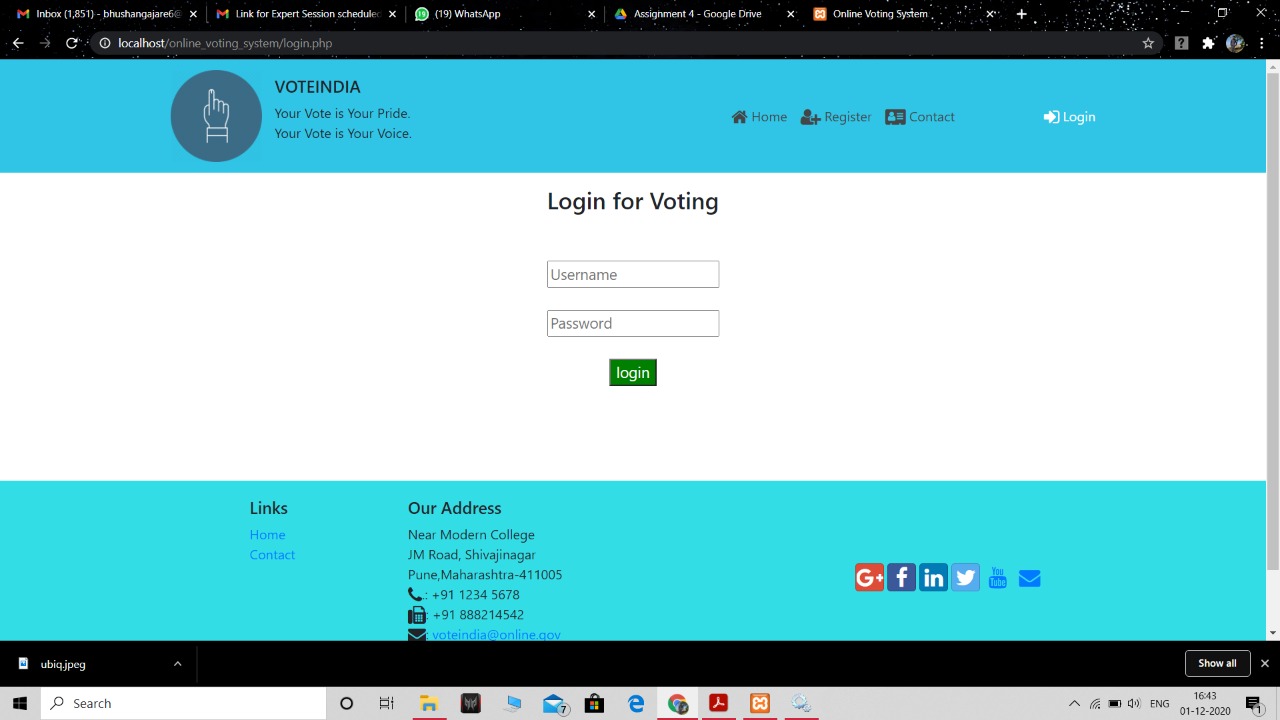
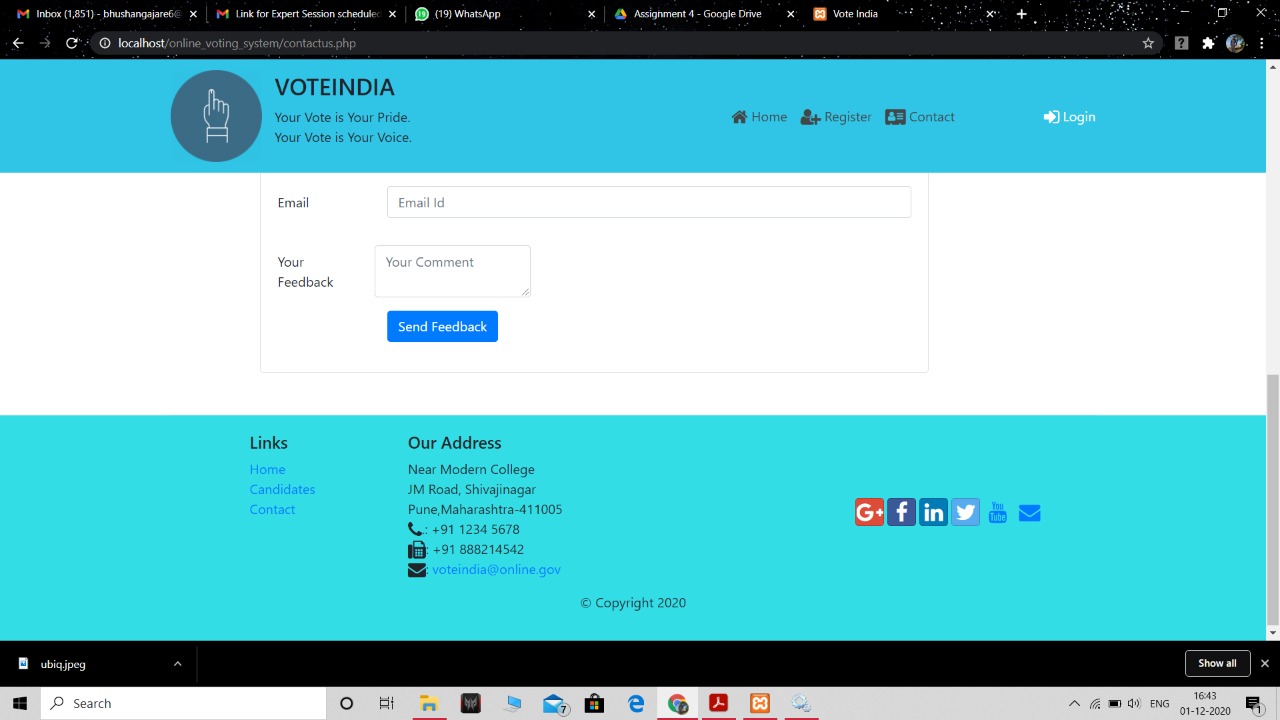
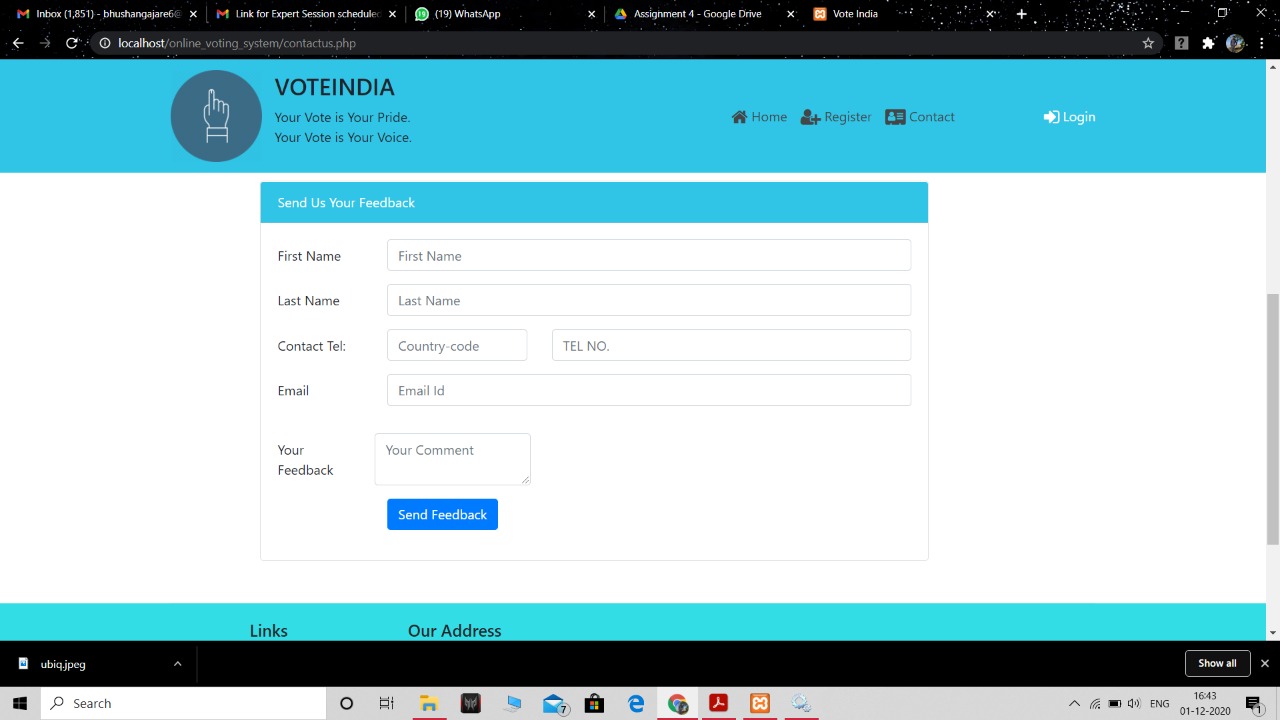
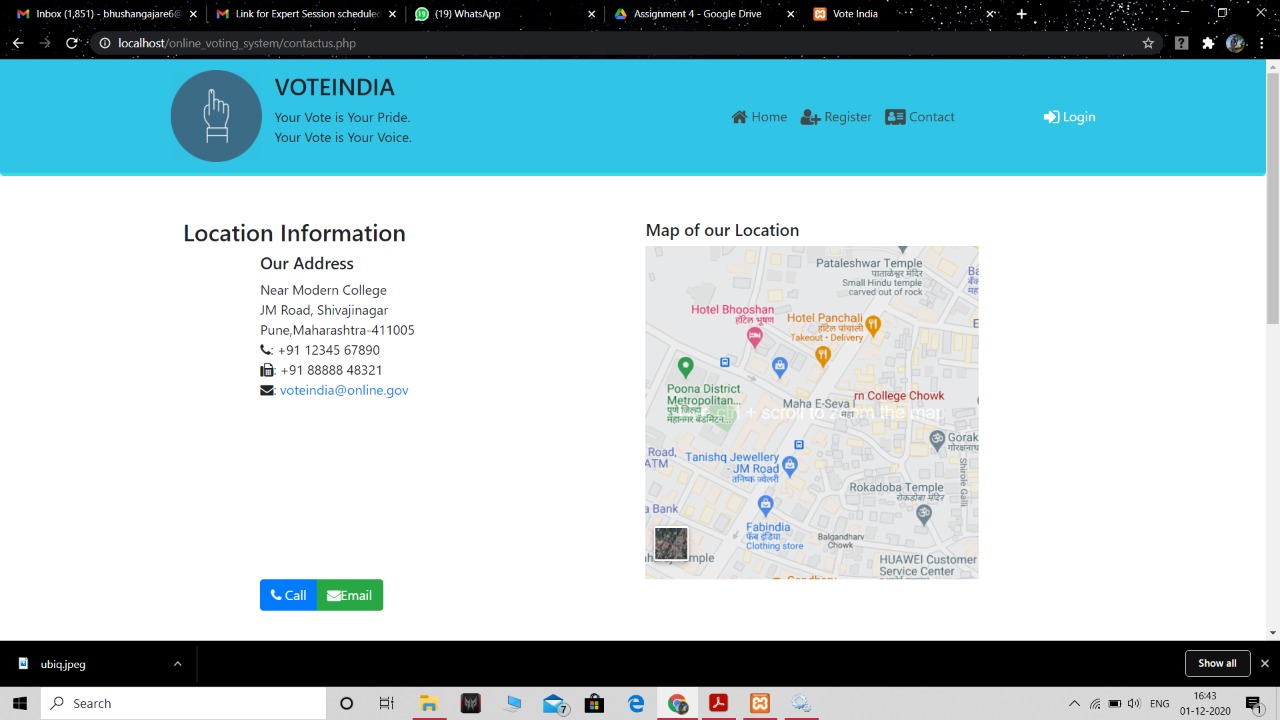
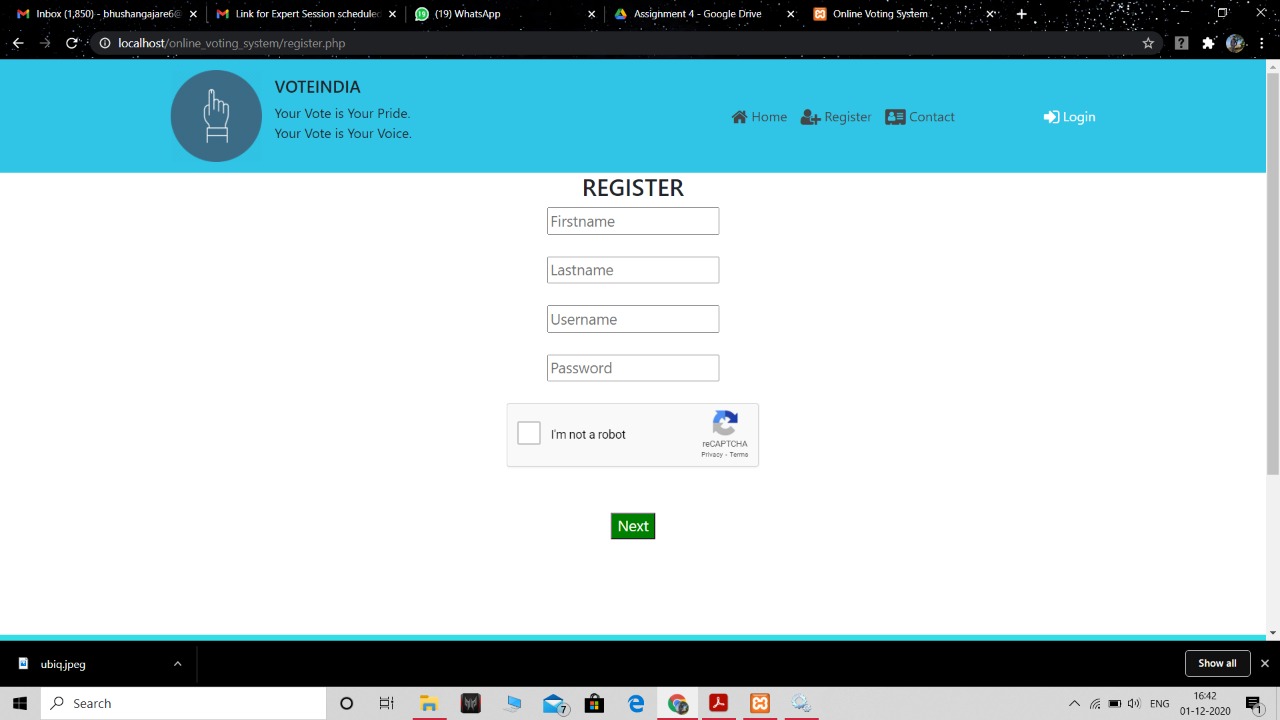
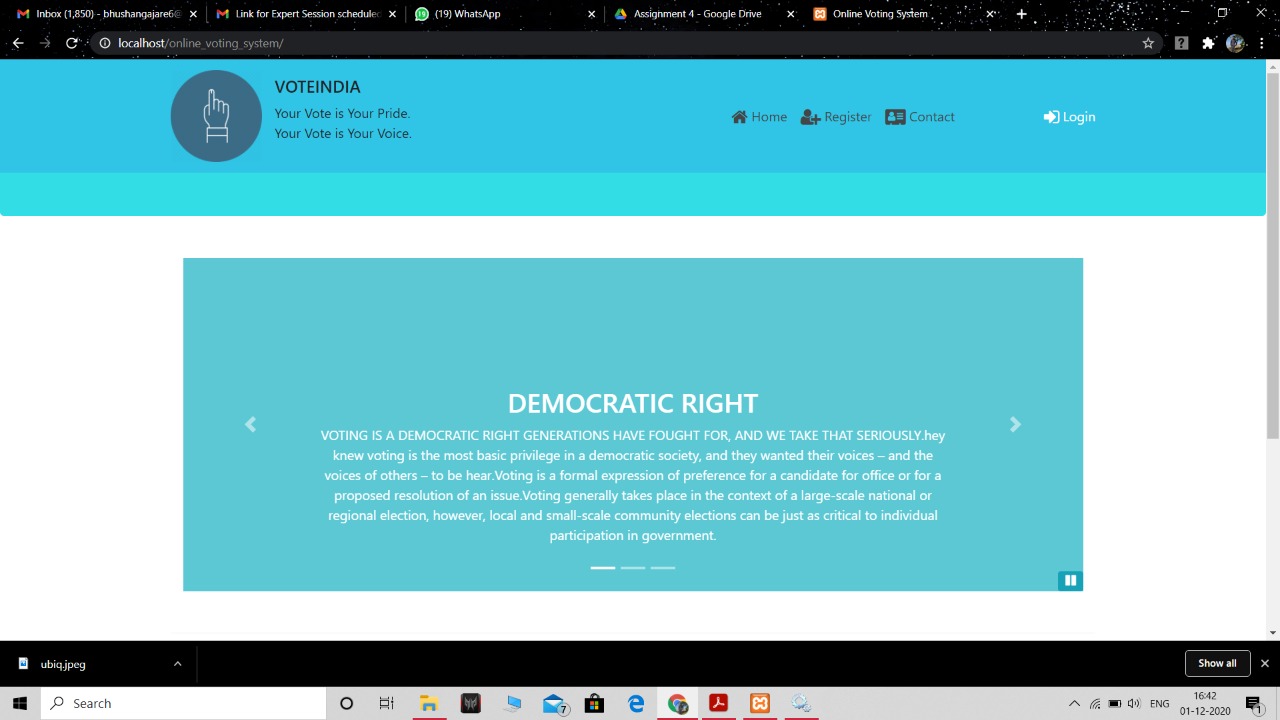
We have successfully implemented various functionalities of MYSQL and html, CSS, JavaScript and bootstrap and created the fully functional database management system.

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**References**

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**System Snapshots**

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