

**Department of Computer Engineering**

**List of PBL Project**

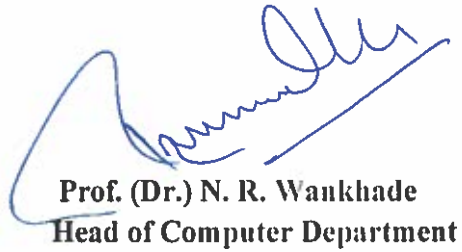
Academic Year	Group No.	Name of Student	Name of Guide/Mentor	Project Title
2021-22	1	Kalokhe Sanket Tukaram	Prof. D. B. Vaidya	E-wallet canteen management system
		Valkande Lalit Narayan		
		Dhatrak Dhanesh Ramakant		
		Shaikh Alish Muktar		
		Vishwakarma Sarvesh Sanjay		
	2	Shimpi Asmita Rakesh	Prof. S. V. Nirgide	The grocery shop
		Nile Mrunal Satish		
		Wagh Vaibhav Onkar		
	3	Kedare Harshdeep Chandrakant	Prof. J. V. Shinde	Fitness and monitoring application
		Patil Uday Kishor		
		Mahajan Harshal Sunil		
		Adhe Mithun Pralhad		
	4	Darunte Bhagyashri Dipak	Prof. J. P. Kakad	Blood bank Management System
		Bhadane Damini Popat		
		Patil Bhagyashri Kailas		
		Chaudhari Yash Vinod		
	5	Desale Chetana Suresh	Prof. S. V. Nirgide	Hospital Management System
		Mahale Nikita Shantaram		
		More Priyanka Shantaram		
		Mahale Kajal Shankar		
	6	Raut Shravani Sandeep	Prof. S. N. Botekar	Online news portal system
		Pachorkar Ankita Ashok		
		Mahale Mayuri Pandharinath		
		Pawar Supriya Prakash		
		Dhatrak Yash Rajendra		
	7	Andhale Siddesh Madhukar	Prof. D. B. Vaidya	Face recognition Using AI
		Brahmankar Sahil Ashok		
		Nalkar Saurabh Shaligram		
		Nemade Prathamesh Satish		
	8	Shivade Siddhesh Sunil	Prof. S. V. Nirgide	Employee management system
		Ghegadmal Akshay Abhaykumar		
		Gite Monika Somnath		
		Bhandare Saurabh Santosh		
	9	Khairnar Vipin Sunil	Prof. S. N. Botekar	E-commerce website on shoes
		Sonar Aditi Mahesh		
		Bhoi Kiran		
Amrutkar Ankush Sanjay				




2021-22	10	Kamble Venkatesh Sandip	Prof. J. V. Shinde	Online Hurb and Fruit Shopping
		Kakulate Kalyani Shivaji		
		Sonawane Anushri Sanjay		
		Surade Rutuja Someshwar		
		Mungase Saurabh Navnath		
	11	Shardul Sayali Ravindra	Prof. J. P. Kakad	Career Guidance System
		Kohok Purva Narendra		
		Patil Pradnya Ganesh		
		Nikita Rajendra Murmure		
		Kharwar Mohani Phoolchandra		
	12	Rahane Unnati Sanjay	Prof. S. N. Botekar	Organ donation system
		Bendkule Perna Pradip		
		Jagtap Sakshi Vitthal		
		Vanse Shubham Ratan		
	13	Gite Nitin Karbhari	Prof. D. B. Vaidya	Library management System
		Shinde Shubham Rajendra		
		Dandagaval Sandip Ravindra		
		Kayastha Pratham Gopal		
14	Patil Pratham Deepak	Prof. J. V. Shinde	Mini games and utility tools	
	More Ruchika Shiram			
	Thorat Pratiksha Vilas			
15	Ruparel Vaibhav Manish	Prof. J. P. Kakad	Airline management system	
	Tayade Darshna Rajiv			
	Date Harshada Dashrath			
	Tidke Vedanti Anilrao			
	Thoke Nikita Rajendra			
16	Sanghavi Saurabh Sunil	Prof. S. V. Nirgide	E-voting system	
	Chaudhari Siddharth Prashant			
	Dhumal Tejas Vinayak			
	Patil Gitoday Devendra			
	Bagul Sagar Yashwant			
17	Jagtap Apurv Uday	Prof. S. N. Botekar	Campus recruitment system	
	Wani Shubham Gopal			
	Rajput Harish Prakash			
	Kapadnis Saurabh Karbhari			
18	Mahajan Vaishnavi Bhalchandra	Prof. D. B. Vaidya	Philanthropy donation application	
	Mahajan Darshana Sayaji			
	Kamble Sneha Nilesh			
	Kande Dipali Gorakh			
	Kolpe Dhanvantari Nana			
2022-23	S1	Diya Radheshyam chauhan Anand Vilas Chavan Samruddhi Ujjwal Singh Girase Swaraj Pravin Deshmukh	Prof. V. C. Satpute	Smart door lock

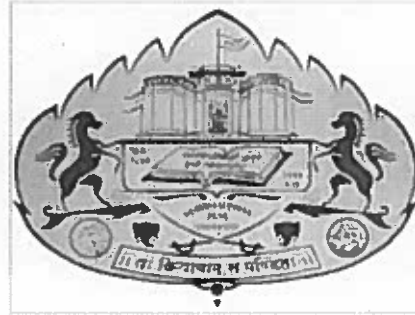
2022-23	S2	Ganesh Kushinath Bagul	Prof.V.A.Khairnar	Book From Table
		Aditi Sunil Jadhav		
		Gauri Rajendra Shinde		
		Saurabh Vijay Jadhav		
		Manjiri Gopal Kasar		
	S3	Bhagyashri Subhash Sadgir	Prof.S.R.Agrawal	Medical Store Management System
		Pooja Laxman Kokate		
		Pranali Anil Ahire		
		Sanket Shivaji Gurgude		
		Pratik Arun Waghmare		
S4	Pratik Bhatu Chaudhari	Prof.S.D.Bagade	Digital clock	
	sidharth Dilip shirsath			
	Sagar Babasaheb parhad			
	Nikhil Rajendra Chavan			
	Mahesh Navnath Sanap			
S5	Girish madhukar shirsath	Prof.K.R.Patil	Group portfolio (HTML, CSS, BOOTSTRAP, JAVA SCRIPT, BLOGGER)	
	Yash Kiran mahajan			
	Dipak Vilas aher			
	Shekhar Subhash Jadhv			
	Rutesh Balasaheb Garud			
S6	Gayatri Bharat Jadhav	Prof. V. C. Satpute	Hangman Game	
	Chaitali Vinayak Patkar			
	Pranjali Shamrao Gangurde			
	Tejaswini Kailas Aher			
	Ujjwal Shriram Dethe			
S7	Mayur Rajendra Rajput	Prof.V.A.Khairnar	QR BASED ATTENDANCE MANAGEMENT SYSTEM IN JAVA	
	Piyush Vijay Patil			
	Pratik Arun Waghmare			
	Avishkar Vasant Kokate			
	Jayesh Vishwas Patil			
S8	Kunal Prashant Salunkhe	Prof.S.D.Bagade	Hotel Management System	
	Kartik bharaat Kapadne			
	Kuldip nitin Patil			
	Akash Ashok Kadam			
	piyush kishor shimpi			
S9	lokesh rajendra jagtap	Prof.S.R.Agrawal	Library management system	
	suyash ravindra rane			
	rahul dhyneshwar dhonar			
	tajes tarachand jadhav			
	Rushikesh Maruti Powar			
S10	Vaibhav ashok gosavi	Prof. K. R. Patil	Hospital Management System	
	Saurav manoj bhamare			
	Umesh bhatu bhadane			

2022-23	S11	jahanvi tusharbhai baria	Prof. S. R. Agarwal	E-Learn Website
		Sumit Bajirao Patil		
		Ganesh Sunil Argade		
		Hrishikesh Arun Wagh		
	S12	Bhagyashri Vishnu Pawar	Prof. S. D. Bagade	Training and Placement System
		Ashwini Manohar Jadhav		
		Tanisha Jayesh Kadu		
	S13	Sneha Ashok Kale	Prof. V. C. Satpute	Hospital Management System
		Gayatri Gokul Nagare		
		Nikita Ganesh Deshmukh		
		Yamini Arun Pawar		
		Tejaswini Bharat Pawar		
	S14	Roshan Vijay Pawar	Prof. V. A. Khairnar	Bank Management System
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		Darshan Sunil Pawar		
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**SAVITRIBAI PHULE PUNE UNIVERSITY**

**A REPORT ON**

**“E-VOTING SYSTEM”**

**SUBMITTED TOWARDS THE**

**PARTIAL FULFILLMENT OF THE REQUIREMENTS OF**

**PROJECT BASED LEARNING (SE COMPUTER) BY**

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**UNDER THE GUIDANCE OF**

**PROF. S.V.NIRGIDE**



**DEPARTMENT OF COMPUTER ENGINEERING LATE G.N.**

**SAPKAL COLLEGE OF ENGINEERING**

**ANJINERI, NASHIK.**

**YEAR 2021-22**



**KCT's**

**LATE G.N. SAPKAL COLLEGE OF ENGINEERING  
DEPARTMENT OF COMPUTERENGINEERING**

**CERTIFICATE**


This is to certify that the Project Entitled

**“E-VOTING SYSTEM”**

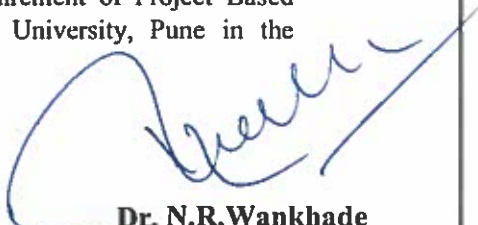
Submitted by

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is a bonafide work carried out by Students under the supervision of **S.V.NIRGIDE** and it is submitted towards the partial fulfilment of the requirement of Project Based Learning (SE.Computer)course of Savitribai Phule Pune University, Pune in the academic year 2021-22.

  
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## **ACKNOWLEDGEMENT**

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**Gitoday Devendra Patil  
Siddharth Prashant chaudhari  
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## Chapter 1

### Introduction

Voting is one of the most crucial ways that allow individuals to participate in governmental decision-making. It is a method that allows electorates to actively participate in decision making or express their opinion. In a democracy, a government is chosen by voting in elections. By voting in elections people have the right to choose their representatives, be it a local official or the prime minister of a country. Paper-based and machine voting techniques are the traditional voting methods. Electronic Voting Machines (EVMs) are being used in Indian General and State Elections from 1999 to till date. EVMs have replaced paper ballots in few election categories, but there are still a number of scenarios in our everyday life where traditional voting practices like paper ballots are still in use. Voting in these typical scenarios can be conducted by online mobile app based voting system. For instance, in many colleges, student council elections, departmental council elections, staff association elections, hostel elections are done with the help of paper ballots. The process of electing office bearers in RWA elections, club elections or professional body elections are still being carried out with the help of traditional paper ballot procedure.

The method of using paper ballots is often more cumbersome, time-consuming and prone to human biases. There are a number of factors like going to polling stations, long waiting queues, bad weather conditions, traffic etc. make traditional elections difficult for voters as well as for the election officials. These factors often result in decrease of voters' participation in the election process.

Online e-Voting is a critical step for the evolution of democracy. It is an ideal means for elections of associations, councils, clubs, trade unions, educational institutions and other organizations etc. Our goal is to develop a mobile-based app that allows users to vote online via mobile phones. In this project, a mobile app is developed with an aim to improve the voting procedure and make it more efficient. This app provides a novel method of casting votes and managing elections thus helps in reducing time, cost and human effort.

Our application is developed for college students to cast their votes anytime and from anywhere using android devices. The aim of this app is to provide convenience to voters as well as election officers who monitor the voting process. The app gives election results accurately and instantaneously. The proper execution of democratic rights has become linked to the availability and reliable functioning of advanced information and

communication technology (ICT). While modern societies fully rely on ICT for business, work and leisure time activities, the use of ICT for democratic decision making is still in its infancy. In fact, the out date technological concepts for voting has been blamed in part for lost and uncounted votes and could therefore be responsible for biased political decisions making. Countries all over the world are examining e-voting, for it has some striking advantages over traditional paper voting, including security for casting votes, accuracy of counting and analysing votes, options to conduct voting in a centralized and decentralized manner, etc. The reasons why the e-voting technology has not matured to equivalent levels as known for business and leisure time activities lies mostly in an inherent lack of trust and fear of electronic threats. While most countries are still conceptualizing or testing e voting systems, three cantons in Switzerland have pioneered the development of e-voting to its full technological maturity. The world is always in improvement and growth in technology, that's why we should go parallel with it, to be able as much as we can get benefit from these improvements. The advanced e-voting technique makes use of main two phases- the registration and login phase. During the registration phase the user need to provide required information and can get a secured password in order to login the application for voting. In the second phase using the user-id and password provided the user can login and can cast the vote from home or office or anywhere securely. The votes are properly encrypted so that any third person cannot able to find voting information of any others. The whole operation is managed by an administrator. The admin can monitor the process and finally announces the result soon after voting session is completed. Even the vote counts are stored in the encrypted form while getting stored in the database maintained and managed by administrator. Hence the overall voting process will be safe and secure.

The current system which is present now is a machine and paper based voting system which needs much man power and requires lot of resources.

## 1.1 Problem Statement

The present voting system application in the electoral system has Proved inefficient as the voters' Registration process is slow, the manual collation of results takes time and gives room for result manipulation also the inaccessible nature of election venues which includes the long distance to be covered by the voters' to their registered location increases voters' apathy towards the election processes, and finally the issues of ballot box snatching and damage and other election violence and issues associated with the traditional ballot paper voting all defiles the purpose of voting in election process as a formal process of expressing individual opinions for or against some motion.

## 1.2 Motivation

Nowadays, there are tons of things we do online, from shopping to doing any kind of official arrangement and you may think, why not voting online too? Whether you are part of a small, medium or large organization, you may have thought at some point about the reasons to choose online voting and how it could benefit your entity. Test our capability and increase our Knowledge. Our main motivation factor was to test our logic building skill when face with a complex implementation like a e-voting which requires constant user input.

## 1.3 Objectives

1. A detailed study of the election processes as it pertains to voting.
2. Design and develop software platforms for voter registration, election voting, real-time election results collation and monitoring and mostly for voters remote access to elections.
3. Design and develop an electronic device that incorporates smart card reader and fingerprints technology for voters accreditation, authentication and verification.
4. Design and develop an administration dashboard for the election administrators
5. Run simulations and compare the results of the designed e-voting system and other voting systems.

## 1.4 Advantages And Disadvantages

### Advantages

- this system will reduce illegal activities held during election.
- this Saves time of the voting procedure
- it reduces the expenses of the election at a great extent.
- this system will provide security for every voter about his/her vote confidentiality.
- this system will act as a trustful platform.

### Disadvantages

- Risk related to security (computer viruses/hacker)
- Problems with access to the Internet in rural Area
- Threat of disintegration of social capital or civic life
- Not everyone can afford fast Internet access

## Chapter 2

### Software and Hardware requirements

- **Hardware Requirement for Development of Project:**

Processor : Intel CORE i3

RAM : 4GB

Hard Disk : 64GB

- **Software Requirement for Development of Project:**

Operating System: Microsoft Windows-7.

Software Package: SDK and Android, Studio, XML, MySQL, PHP.

- **PHP- Hypertext Preprocessor PHP** is a widely-used, open source scripting language. PHP scripts are executed on the server.
- **MySQL- MySQL** is an open source relational database management system. For Word Press sites, that means it helps you store all your blog posts, users, plug in information, etc. It stores that information in separate “tables” and connects it with “keys”, which is why it's relational

## Chapter 3

### Methodology / Proposed system block diagram

#### 3.1 Existing System:

Technological revolutions in computer and communication are enabling the deployment of mobile communication, based on handheld computing devices and wireless networking. Connection capabilities are manifold, and performances of new generation machinery become better and better in terms of computing power and memory size. Their software is able to offer elaborate and complex services, and mobile systems may be exploited for novel applications spread out in a variety of directions. In the past few years the IT industry has witnessed exponential rise of mobile based and web-based software's. Such software's are in demand because they are next to flexible step data access and networking, anytime and anywhere. With operations becoming mobile based one does not have to carry around or depend on PC internet access to perform routine jobs and access online documents and meetings. With the appearance of cell phones with programmable platform, it is possible the development of application for worldwide popular participation, by the digital vote using mobile phones. The voting process by cell phones gives some decision power to the students, which can actuate directly on decisions of their concerns. The main objective of the system is to develop a web based and android based application to help students to vote for the desired candidates and choose their college representatives in a very easy and efficient manner. The project is implemented to allow each and every student to actively participate in the college election process irrespective of the place. Administrator will register all the students with their permanent registration no. and roll nos. It will be the task of the admin to register the candidates. The student will login through the permanent registration number and password. On the date of election, the students can vote for the desired candidates through the application. Students not having android phones can vote through the web application. Result evaluation will take place on the server side and will be posted. The most important benefit of our application over other voting applications is the use of the latest technologies which makes it faster and easy to use.

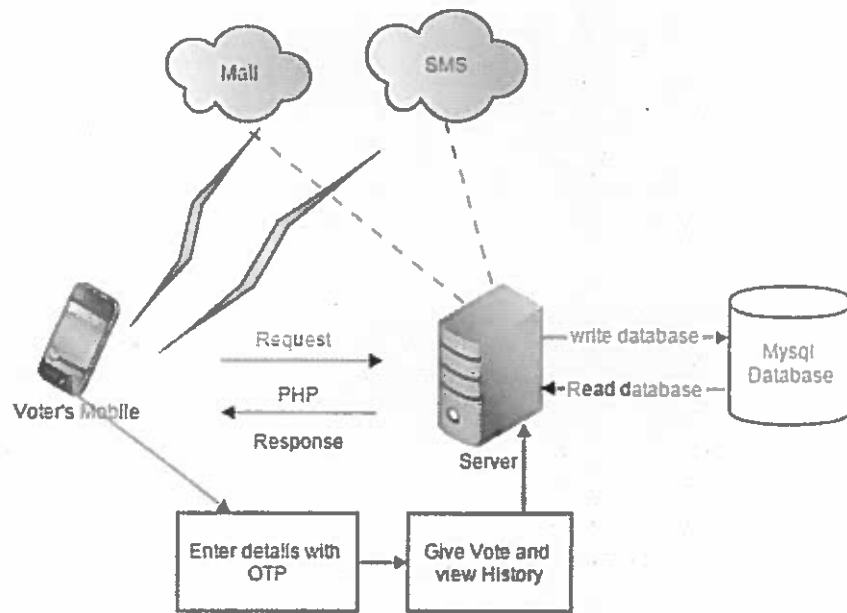
### 3.2 Proposed System:

EVMs have replaced paper ballots in few election categories, but there are still a number of scenarios in our everyday life where traditional voting practices like paper ballots are still in use. Voting in these typical scenarios can be conducted by online mobile app based voting system. For instance, in many colleges, student council elections, departmental council elections, staff association elections, hostel elections are done with the help of paper ballots. The process of electing office bearers in RWA elections, club elections or professional body elections are still being carried out with the help of traditional paper ballot procedure.

The method of using paper ballots is often more cumbersome, time-consuming and prone to human biases. There are a number of factors like going to polling stations, long waiting queues, bad weather conditions, traffic etc. make traditional elections difficult for voters as well as for the election officials. These factors often result in decrease of voters' participation in the election process.

Online e-Voting is a critical step for the evolution of democracy. It is an ideal means for elections of associations, councils, clubs, trade unions, educational institutions and other organizations etc. Our goal is to develop a mobile-based app that allows users to vote online via mobile phones. The application can be installed in the android phones and voting will be enabled by the administrator on the polling day. If there are different stages of polling, then application will enable the user only on the polling day. The user can enter into the application by giving his voter id/Aadhar number (unique number) and a secret password which is provided to the user. As soon as the user enters into the application he selects his constituency and his booth number or place then the user can cast his vote and logout from the application. The vote should be kept secret and it should be available on the voting day in the counting center. To keep the vote secret an encryption and a decryption algorithm is used. So as soon as the user casts his vote the vote is encrypted so that it is secret and the same is encrypted on the polling day.

**Block Diagram:**



**Figure No 3.2: Block Diagram**



## Chapter 4

### Implementation

#### Project Design

##### 4.1 Design Concept:

This chapter gives a detailed outline of the software development methodology used in this project following up the various existing software development methodology. The strength and weaknesses of the chosen methodology have been outlined. Further, the functional and non-functional requirements of the system are explained in detail and the use cases which are a list of steps, typically defining interactions between a role and system, to achieve a goal. Class diagrams have been given to show detailed data modelling of the system which will be translated into code.

- It allows for development of high-risk or major functions first
- Each release delivers an operational product
- Customer can respond to each build
- Uses “divide and conquer” breakdown of tasks
- Lowers initial delivery cost
- Initial product delivery is faster
- Customers get important functionality early
- Risk of changing requirements is reduced

### 4.1.1 System Architecture:

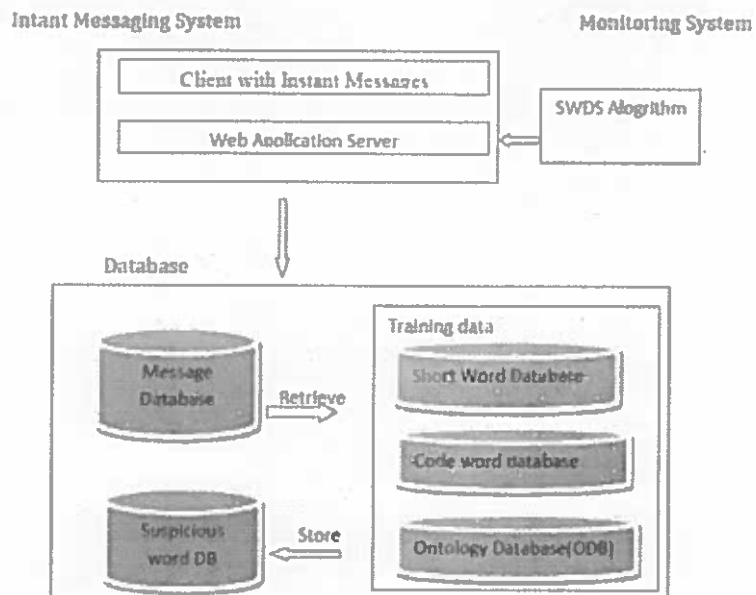


Figure No 4.1.1: System Architecture

### 4.2 Data Flow Diagram

#### DFD Diagram:

In the design phase the architecture is established. This phase starts with the requirement document delivered by the requirement phase and maps the requirements into architecture. The architecture defines the components, their interfaces and behaviours. The deliverable design document is the architecture.

The design document describes a plan to implement of the dataflow diagram (level 0) shown in fig 4.2.1 Level 0 includes overall functioning of system. A data flow diagram at its simplest is a representation of a flow of the current system. A data flow diagram shows the steps of all the execution of the data and the processes.

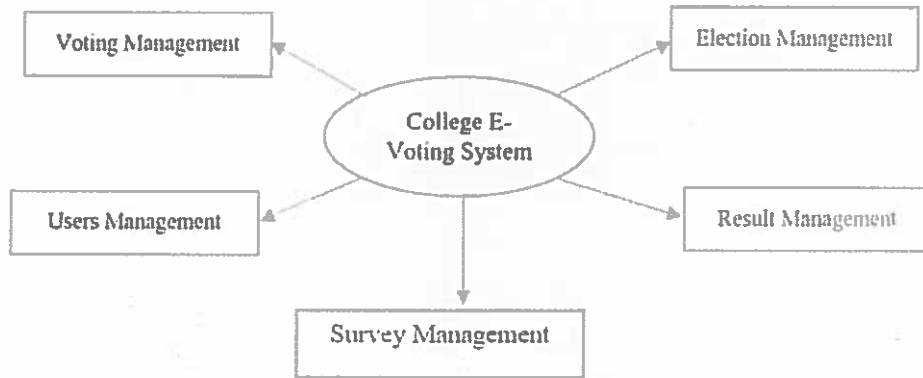


Figure No 4.2.1: DFD level 0

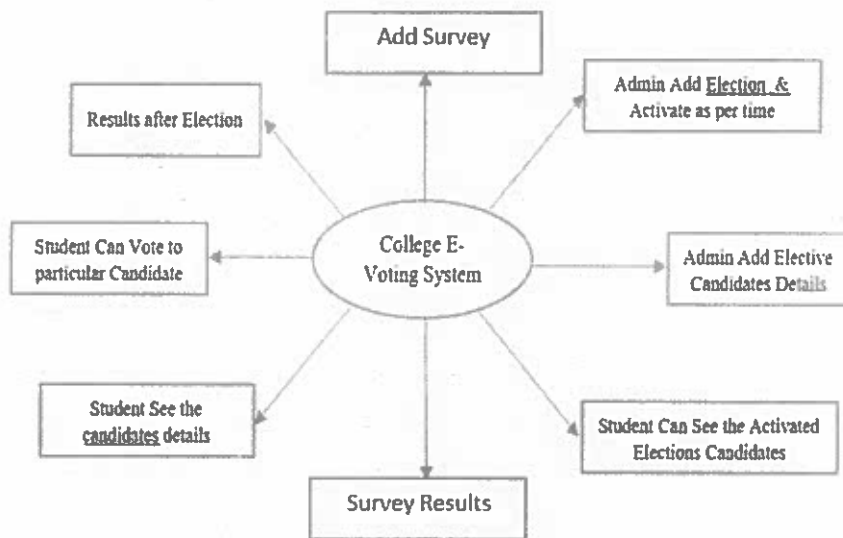


Figure No 4.2.2 DFD level 1

### 4.3 Flow Chart:

The system flow diagram is a visual representation of all processed in sequential order. The system flow chart diagram is a graphical representation of the relation between all the major parts or step of the system. Flow chart diagram cannot include minor parts of the system.

As you can see in following figure that after starting system admin or user can login into system. If user logged into system then the one can browse candidate profile, can vote and view history. If admin logged in, then first he/ she have to add user. Then the one can start chat in system. Admin can manage candidate, voter, vote history.

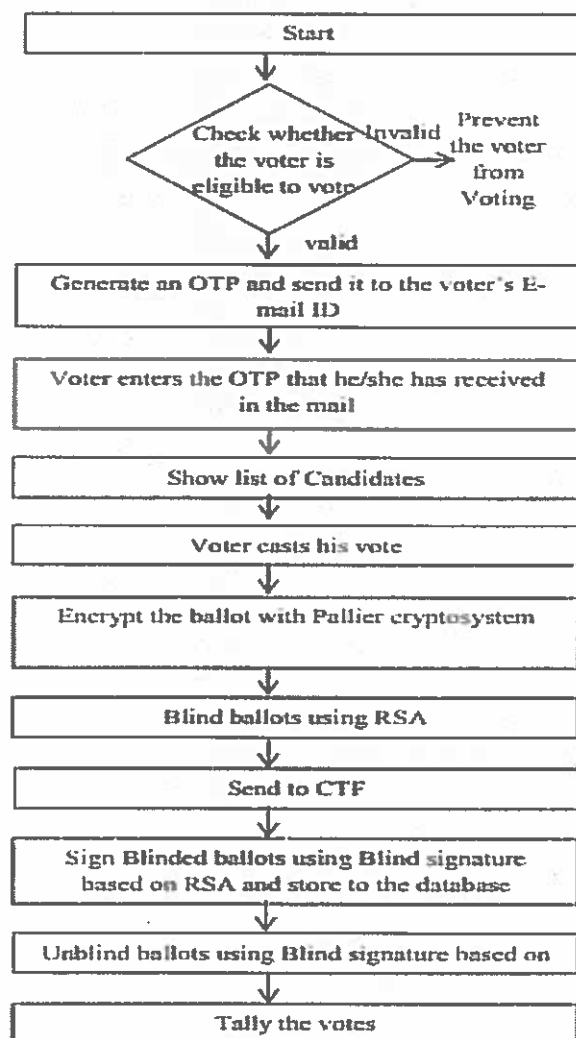


Figure No 4.3

## Chapter 5 Results

### Splash Screen and Registration Page:

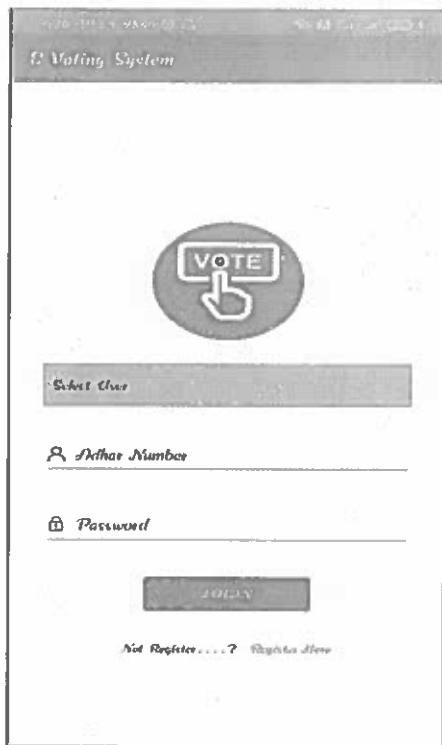


Figure 5.1 Home Screen

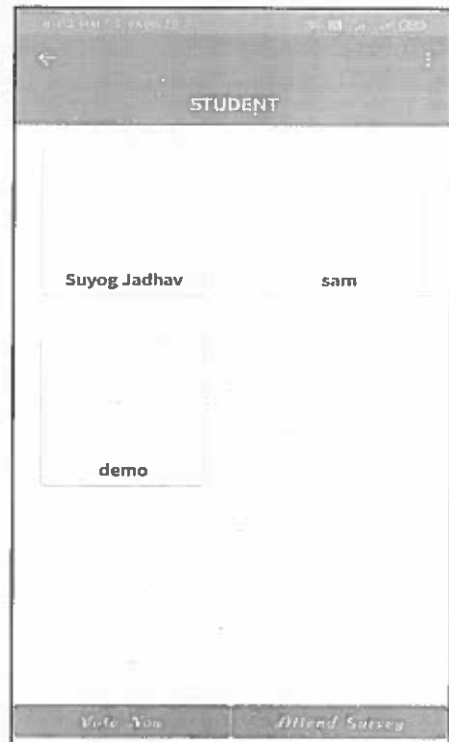
The image shows a registration form titled "E-Voting System". The form includes the following fields and options: "Student Name" (text input), "Gender" (radio buttons for Male and Female), "Date Of Birth" (text input with a "SELECT DATE" button), "Mobile Number" (text input), "Select Department" (dropdown menu), "Select Academic Year" (dropdown menu), "Roll No" (text input), "Address" (text input), "Password" (text input), and "Confirm Password" (text input). A "SIGN UP" button is located at the bottom of the form.

Figure 5.2 Sign up Page For New User

**Login and User-Home:**

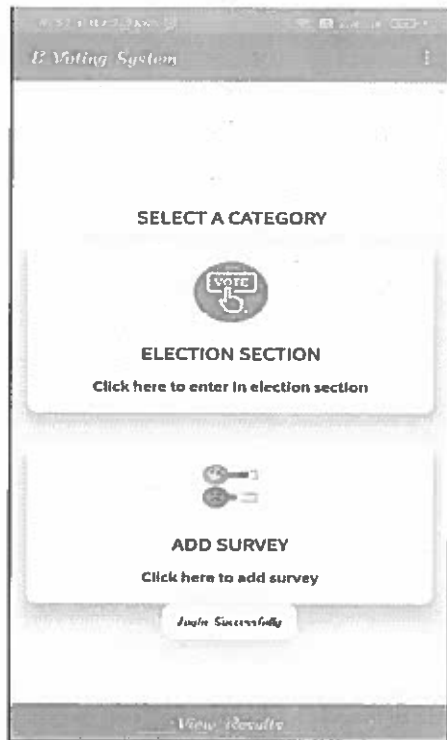


**Figure 5.3 Login Page for User**

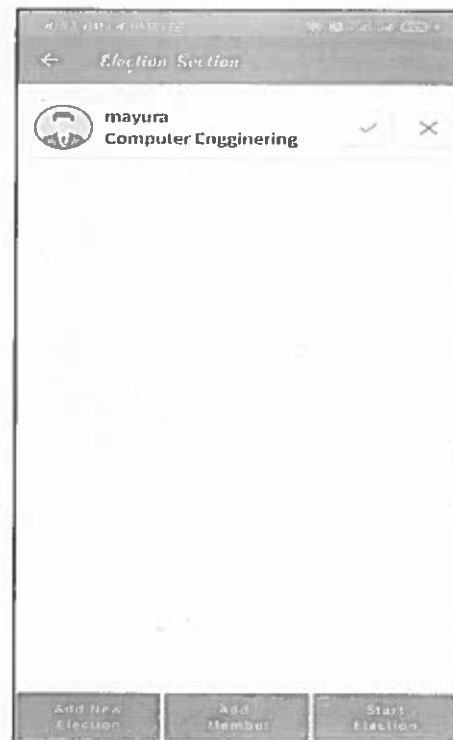


**Figure 5.4 After User Login screen**

**Admin-Home and Election Section:**



**Figure 5.5 Admin Home screen**



**Figure 5.6 Election Section**

**Add Election and Add Member:**

The screenshot shows a mobile application interface for adding an election. At the top, it says 'E-Voting System'. Below that, there are three input fields: 'Election Name' with a search icon, 'Enter Election Date' with a search icon, and 'Enter Election Time' with a search icon. A 'SUBMIT' button is located at the bottom of the form.

**Figure 5.7 Add Date/Time for Election**

The screenshot shows a mobile application interface for adding a member to an election. It includes a 'Select Election' dropdown menu, a 'Name' text input field, a 'Select Department' dropdown menu, a 'Select Academic Year' dropdown menu, and an 'Achievement' text input field. A 'SUBMIT' button is positioned at the bottom.

**Figure 5.8 Add Member for Election**

The screenshot displays a list of election categories under the heading 'ELECTION'. Each category has a corresponding 'START' or 'END' button. The categories listed are: OS Election (START), CS Election (START), HR Election (START), ABC (START), Lok Sabha 2022 (END), and xyz (END).

**Figure 5.9 Start And End election Screen**

The screenshot shows the 'ADD SURVEY' screen. It starts with 'SELECT A CATEGORY' and shows 'ELECTION SECTION' as the selected category. Below this, there is a text input area with the prompt 'Enter Question Here (Only One Question at a time)'. A 'Submit' button is at the bottom.

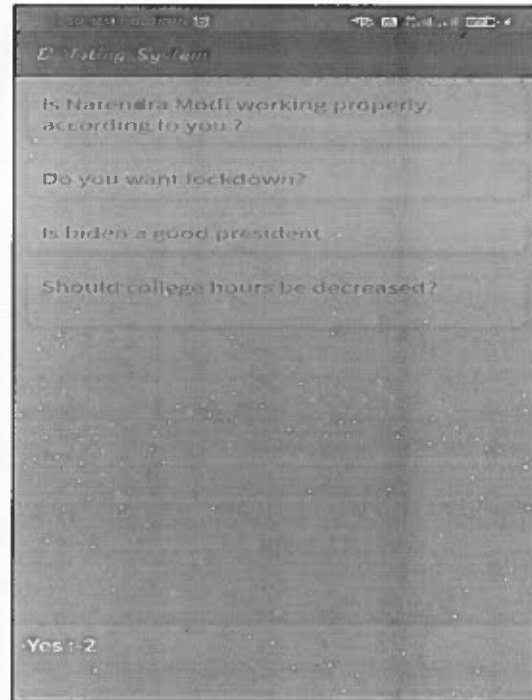
**Figure 5.10 Add Survey Question**



**Election Result:**



**Figure 5.11 Election Result Screen**



**Figure 5.12 Survey Result Screen**

## **Chapter 6**

### **Challenges faced**

Online voting in elections might seem like a logical step forward considering the many other daily activities, like banking and shopping, that we complete online. However, voting online does present unique challenges that usually don't apply to other internet-based processes. These challenges are related to a variety of factors, including the security required for online voting, legal requirements and frameworks, public opinion

#### **Security**

##### **Voter Verification and Privacy**

Elections always require a high level of security in order to protect voter privacy and the integrity of final results. Meeting the security needs of elections means that online voting technology must overcome barriers that don't apply to other online-based processes.

##### **Election Verifiability**

An online voting system must also be able to provide verification that it has successfully maintained election integrity and that no manipulation had occurred during the voting or tallying processes.

## Chapter 7

### Conclusion and Future Scope

#### 7.1 Conclusion

Physical presence is the biggest challenge of traditional booth based voting system as that leads to stumpy voter turnout. Everyone should be allowed to vote despite of geographical distances, work commitments, critical health concerns or adverse weather conditions etc. Our application allows voters to vote directly from their Android enabled smart phones without sacrificing their home comforts within few seconds. Thus it ensures increased voting turnout %, improved over all security, reduces cost of conducting elections, and reduces time and manpower needed to conduct elections. It proposed a real time e-voting system based on android phones. The usability of this system is very high if it will be used in real life election process. It will definitely helpful for the users who wish to vote and the voting process will be made very easy by using this application. Advantages of the proposed e-voting system: e-voting minimizes the risk of ambiguities as the voter makes his choice by touching the screen. E-voting could also minimize the need for recounts as everything is tabulated by the computer. Also the user can cast vote without visiting the polling booth.

#### 7.2 Future Scope

In future we will bring this app for both Industries and make it more secure for other use. In future more complex algorithm can be used and make it complex for hacking and related issues. It can be extended to more Security Using various level of Authentication and Verification. More Security and Privacy Issues can be maintained by using various aspects.

## Chapter 8

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