

Minor Project Report on TechCulture (Voting System)

**In partial fulfillment of requirements for the degree of
Bachelor of Technology
In
Information Technology**

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DEPARTMENT OF INFORMATION TECHNOLOGY

**SHRI VAISHNAV INSTITUTE OF INFORMATION
TECHNOLOGY**

**SHRI VAISHNAV VIDYAPEETH VISHWAVIDYALAYA,
INDORE**

JAN – JUNE 2022

SHRI VAISHNAV INSTITUTE OF INFORMATION TECHNOLOGY, INDORE
DEPARTMENT OF INFORMATION TECHNOLOGY

DECLARATION

We here declare that the work which is being presented in the project entitled “**Tech Culture**” in partial fulfillment of the degree of **Bachelor of Technology in Information Technology** is an authentic record of our work carried out under the supervision and guidance of “PROF. Dinesh Patel, Prof. Sujit Badodia” **Asst. Professor of Information Technology**. The matter embodied in this project has not been submitted for the award of any other degree.

Certified that the minor-project work entitled “**TechCulture (VotingSystem)**” is bona fide work carried out by: -

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PROJECT APPROVAL SHEET

Following team has done the appropriate work related to the “**Tech Culture**” in partial fulfillment for the award of **Bachelor of Technology in Information Technology** of “SHRI VAISHNAV VIDYAPEETHVISHWAVIDYALAYA, INDORE” and is being submitted to SHRI VAISHNAV INSTITUTE OF INFORMATION TECHNOLOGY, INDORE.

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CERTIFICATE

This is to certify that **Sachin Kumar Kodli, Sheikh Junaid, Shristi Sisodiya, and Yuvraj Nagar** working in a team have satisfactorily completed the project entitled “**TECHCULTURE**” under my guidance in the partial fulfillment of the degree of **Bachelor of Technology in Information Technology** awarded by SHRI VAISHNAV VIDYAPEETH VISHWAVIDYALAYA, INDORE during the academic year 2021 – 2022 in the session of Jan-June.

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ABSTRACT

The project is mainly aimed at providing a secured and user-friendly Online Voting System for the University. The problem is still critical in terms of safety and security. This system deals with the design and development of a web-based voting system using two factor authentication and unique username provided further changes to Enrolment Number given from the university to provide a high performance with high security to the voting system. Voting System is managed in a simpler way as all the users must login by username with two factor authentication and click on voter's favorable candidates to cast the vote. In this scheme, an impartial third party, Ballot Center, is proposed to take the responsibility of distributing ballots. Enrolment and user database connected through ERP records all voting transactions. Our proposed procedure addresses issues related to voter confidentiality, voter frauds, and voting accuracy, thus providing a framework for fair elections.

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CHAPTER 1: INTRODUCTION

1.1 INTRODUCTION

The dissertation offered is a complete record at the venture carried out for this change referred to as “**TechCulture** (vote casting device)”. TechCulture (balloting device) is a dynamic website focused for college on this pandemic. college students, software will go with leaders based totally on the votes given to them in each cultural department like sports activities membership literature membership the ones leaders who were elected in these elections help their very own branch. To get statistics. primarily based on. The cutting-edge affairs. the chosen leaders. will also help them to locate. may even help them to discover answers to their very own trouble troubles and queries. From first year. students to fourth 12 months students. university scholar leaders are the core hyperlink among the university college students and the college administration. these leaders are therefore elected democratically to rep-resent the pastimes of the scholars as in line with the college act. it's far always an expectation of every pupil that elections be held pretty, and outcomes computed accurately. inside the previous elections, there were challenges inside the turnout of citizens due to a few demanding situations they face at the balloting day. to begin with the scholars had been anticipated to queue and forged their votes in the ballots as according to their various schools. The current system does now not affirm and account for the people to vote in view that no voting registration is carried out previous. This has been bringing a few loopholes in that even a student who isn't in consultation can queue and vote as long as he/she has a student identification Card.

The present-day machine does now not additionally inform the range of expected voters given that they depend on the populace of the pupil of which no longer all college students are inquisitive about these elections. that is the main project to the voters and officials of election commission. applicants are anticipated to attain citizens through campaigns of door to door, rallies and debates which has been a undertaking for a while because of the busy environment in the school. Many college students do no longer attend rallies due to their busy sched-ules and additionally it's difficult for applicants to discover students in their house's considering availability is an issue. This mode of campaigning has been yielding much less end result and consequently voters would forge votes with either no or much less expertise about the

applicants and their manifestos. when it gets to counting, numerous time man powers are fed on following the big populace of citizens. With the character of man or women no longer being so diligent, quite a few flaws are discovered which brings numerous chaos from the stakeholders. Following these challenges, I noticed it true to come up with a device that might cut back those troubles and speed up the election device to ensure unfastened and honest elections. when a gadget this is based totally on pens and poll papers is used at a big populace, the consequences may be ambiguous and that questions the intelligibility of the gadget used. Hand counting votes is time ingesting mainly at a turnout of many voters and many positions being voted for. In a case of disabled or obligation certain people, they conflict to cast their votes the system makes it clean for them seeing that they can vote at their consolation in their locations. This machine also curbs the probabilities of the manipulation of results from influencing authorities and consequently generate transparency to the best levels.

1.2 Problem Statement

To know the impact, the project will have on societal, technological, environmental, ethical, political, legal, and economic external factors, a STEEPLE analysis is a must. Each one of the external factors mentioned above will be evaluated.

The current system of election does not take record of voters hence gives chance to any person to vote as long as they have the school identification cards. Some students may not be eligible for the process since they may not be in the school system on different reasons. Interaction between voters and candidates has been minimal since they only interact in rallies which are done once and may not be enough for all students to know who the candidates are and what the candidates have for them. Senior authorities may exploit and manipulate the votes in favor of their preferred candidates which tempers with the expected free and fair elections. The current system consumes a lot of time since users must queue in order to vote and also counting is hand counting which takes a lot of time and manpower.

- **Societal**

The societal implications include students of college those who got queries and issue while finding a particular laboratory or about the recent cultural event updates through our web application they can elect their own leaders for the college who are gonna help them to put some legal actions towards needs of the students offered.

- **Technological**

The modern-day gadget of election does not take document of electorate for this reason gives risk to any man or woman to vote as long as they have the college identification cards. A few students might not be eligible for the technique for the reason that they may not be within the faculty device on unique reasons. Interaction between electorate and candidates has been minimal seeing that they most effectively interact in rallies which can be carried out as soon as and may not be enough for all college students to recognize who the candidates are and what the candidates have for them. Senior government may exploit and control the votes in prefer in their favored applicants which tempers with the predicted free and truthful elections. The modern-day machine consumes a whole lot of time on the grounds that customers should queue if you want to vote, and counting is hand counting which takes plenty of time and man electricity.

The proposed system will provide online voters registration forms for students where students will register and be allowed now to log in as either students or delegates or candidates. Each registered user will have a password to log in. The proposed system will provide an interactive platform where voters and candidates will interact and thus candidates perform their campaigns. The system will also perform some sort of tallying where results and statistics on the expected election will be shown and updated properly. The system will allow preliminary voting and the results will be graphically represented in percentage. This system will also allow the candidates to be liked by users and the most liked candidate is the most popular. The system will compute and give the election results for all the posts and provide reports for the whole election process.

1.2 Need for the proper System.

The student details will be saved in the student details database. The proposed system will offer online electorate registration bureaucracy for college students which they will fill and upon registration of their information, they may be allowed to log in and interact with the gadget. The pupil info could be stored in the student details database. The user can be allowed to create their various passwords which they will use alongside their faculty admission variety to log into the system. The customers may be capable of log in as either everyday scholar or delegate or candidate. Delegates information are stored in the delegate database at the same time as candidates' details are stored inside the applicant's database. The proposed machine will also offer interaction platforms for both the electorate and the applicants in which they'll engage and speak matters elections. The candidates shall therefore carry out their campaigns and solution the viable questions from the citizens on the chat platforms. The candidates can be allowed to pose their various agendas and manifestos and shield them on interrogation of the delegates. applicants will interact with delegates and reply to their queries for that reason. college students will interact and ship messages to delegates for representation of evaluations. The system will be able to perform some sort of tallying before and after voting.

The following are the goals of the proposed system.

- Only eligible voters are allowed to vote.
- Every voter shall cast only one vote
- It must be impossible to change anybody's vote
- The complete voting procedure must be so transparent
- User friendly
- Robustness: it functions no matter any failure
- Hacker secure
- Transparency: users can check the system integrity without any trouble.

1.4 OBJECTIVE

To design, develop and implement an efficient, user friendly, interactive web-based student voting system.

- To develop a system that will capture candidates and voters' details
- To develop a system that will facilitate online voting.
- To develop a system that will facilitate voters and candidates' interactions.
- To develop a system that will generate reports for the election process.

1.5 Modules of the system

- **Choosing** between if you are Parent or IT.
- Minimum and maximum **age limit**
- **Signing up/ Signing in.**
- Uploading **user information**
- The **facilities provided** to both the parties.
- Specifying the **time duration** of the work
- Mentioning additional **details to consider**
- **Time slot allotted** to them.
- **A chat box** to chat and voice call each other or giving contact information to communicate.
- Setting up a **margin amount** to consider as per requirement.
- **A contract** between the party A and B must need to be sign in any situation for security.

And much more...

1.6 Scope

The look at assumes that voter registration can be finished effectively, and the students will have login credentials to log in, interact at the discussion board, listen to manifestos of the candidates, provide election reviews and subsequently cast a vote. The proposed machine will best paintings at the net platform.

- Increasing number of voters as individuals will find it easier and more convenient to vote.
- Less effort and less labor intensive, as the primary cost and focus primary on creating, managing, and running a secure web voting portal.
- The system can be used anytime and from anywhere by the Voters.
- No one can cast votes on behalf of others and multiple times.
- Saves time and reduces human intervention.
- The system is flexible and secured to be used.
- Unique Identification of voter through Aadhar number.
- Improves voting with friendly Interface.
- No fraud vote can be submitted.

CHAPTER-2: LITERATURE SURVEY

2.1 Existing System

Electronic voting refers to the use of computers or computerized voting equipment to cast ballots in an election. Sometimes, this term is used more specifically to refer to voting that takes place over the Internet. Electronic systems can be used to register voters, tally ballots, and record votes.

2.2 Proposed System

The proposed machine will also offer interaction platforms for both the electorate and the applicants in which they'll engage and speak matters elections. The candidates can be allowed to pose their various agendas and manifestos and shield them on interrogation of the delegates. applicants will interact with delegates and reply to their queries for that reason.

The following are the goals of the proposed system.

- Only eligible voters are allowed to vote.
- Every voter shall cast only one vote
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- User friendly
- Robustness: it functions no matter any failure
- Hacker secure
- Transparency: users can check the system integrity without any trouble.

2.3 Feasibility Study

Feasibility study is an analysis that takes all of relevant factors into account—including economic, technical, legal, and scheduling considerations. It determines that “project is feasible and should go ahead”. It is the initial design stage of any

project, which brings together the elements of knowledge that indicate if a project is possible or not. A feasibility study evaluates the project's potential for success; therefore, perceived objectivity is an important factor in the credibility of the study for potential investors and lending institutions.

2.3.1 Technical Feasibility

Technical feasibility study assesses the details of how you intend to deliver a service to customers. Think materials, labor, transportation, where your business will be located, and the technology that will be necessary to bring all this together. It helps organizations determine whether the technical resources meet capacity and whether the technical team can convert the ideas into working systems. Technical feasibility also involves the evaluation of the hardware, software, and other technical requirements of the proposed system. The technical feasibility study should most essentially support the financial information of an organization. This assessment focuses on the technical resources available to the organization. It helps organizations determine whether the technical resources meet capacity and whether the technical team can convert the ideas into working systems. Technical feasibility also involves evaluation of the hardware, software, and other technology requirements of the proposed system.

2.3.3 Operational Feasibility

Operational feasibility is the measure of how well a proposed system solves the problems and takes advantage of the opportunities identified during scope definition and how it satisfies the requirements identified in the requirements analysis phase of system development. It takes care that the management and the users support the project. It refers to the measure of solving problems with the help of a new proposed system. It helps in taking advantage of the opportunities and fulfills the requirements as identified during the development of the project. It takes care that the management and the users support the project.

CHAPTER: 3 REQUIREMENTS ANALYSIS

For this section, a detailed description is presented showcasing The ITs club services, and the constraints it comes along with. All the requirements stated are valid, consistent, complete, realistic, and verifiable.

3.1 Functional Requirements: -

Functional requirements are those requirements that are used to illustrate the internal working nature of the system, the description of the system, and the explanation of each sub system. It consists of what task the system should perform, the processes involved, which data should the system holds and the interface with the user.

The functional requirement identified as: -

R.1. Admin View

R.1.1 Login with Admin Account.

INPUT: Admin username and Password.

OUTPUT: Admin view of the system.

R.1.2 Voting.

INPUT: Voting any Voter that best suit your liking.

OUTPUT: Voting is done successfully, and Result is on its way.

R.1.3 Managing Profile.

INPUT: Select Profile of IT and user

OUTPUT: Separate the Profile of IT and user.

R.2. IT View.

R.2.1 Registration

INPUT: Insert details (Name, Contact no, Email id, Description Details)

OUTPUT: Admin can view IT profiles.

R.2.2 Login.

INPUT: IT username and Password.

OUTPUT: IT view of the system.

R.2.3 Authentication.

INPUT: Enter OTP, Enter Password, Confirmed.

OUTPUT: User Verified to login page.

R.2.4 Add Image / Update Profile.

INPUT: They can update their profile as well as description.

OUTPUT: All Users have the access to see the profiles.

R.2.5 The Ballot Pannel.

INPUT: Select Ballot Option.

OUTPUT: Show successful voting result done with feedbacks.

R.3. User View.

R.3.1 User Login

INPUT: Insert details (Username, Password, Enrolment id)

OUTPUT: Admin can view, Create and modify Users profiles.

R.3.2 Login.

INPUT: Username and Password.

OUTPUT: User view of the system.

R.3.3 Feedback

INPUT: Written some feedback.

OUTPUT: All feedback shows to Admin.

3.2 SOFTWARE REQUIREMENTS SPECIFICATION

3.2.1 Objective:

The main objectives of system for **TechCulture (voting system)** are:

- The objective of **TechCulture (voting system)** is to help the organization in automating the whole manual processing of the existing system.
- The main objective to develop the system is to make the accurate & efficient decisions in different tasks at different time at different situations. The existing system is manual, so members of the unit generally face a lot of embarrassing situations many times. Now they need to automate the whole process so as to make it easier and more accurate.
- System should support multi-user environment.
- System should be fully automated.
- System should provide concrete security features like creating users and assigning privileges to users of the system.
- System should be capable to keep track of all the detailed descriptions of the client and the whole details of services offered by the client organization.
- Various outputs (reports) should be available online any time.
- System should be able to handle extremely large volumes of data (i.e. Large database support)

3.2.2 Scope: -

1. **Advanced technology**- It is an advanced technology used now a days. It increases the E knowledge of the users which is very necessary for current generation.
2. **Internet**: It is an online facility and hence very useful for the users.
Voters can vote from anywhere at any time in India.
3. **E-Mails**: ELECTION COMMISSION OF INDIA can send the error report to a particular user if he\she entered false information.
4. **E-SMS**: People they have not internet connection they cannot check the emails or not have email they can be informed by SMS on their mobile.

Today many websites provide free SMS to the mobile. ELECTION COMMISSION OF INDIA can use these to send any information.

3.2.3 Advantages:

- Fast and easy service.
 - The online voting system provides a less time consuming.
 - It reduces the paperwork and makes the work less tedious for ELECTION COMMISSION.
 - It is a better way for voting.
 - By this voting percentage will increase drastically.
- Voter has no need to go to any polling booth, so it is easy to use.

3.2.4 Technologies to be used: -

This project will be a Web application to be developed in PHP having

- Database Design (My SQL)
- Form Design (HTML 4.0)
- Coding (PHP)
- Testing (XAMP SERVER)
- Reporting Tool (Data Report).

Hardware Requirements (Processor *RAM Disk Space*)

Pentium II, Pentium III, Pentium IV, Higher 64 Mb or Higher 130 Mb

Software Requirements (Operating System *Database*)

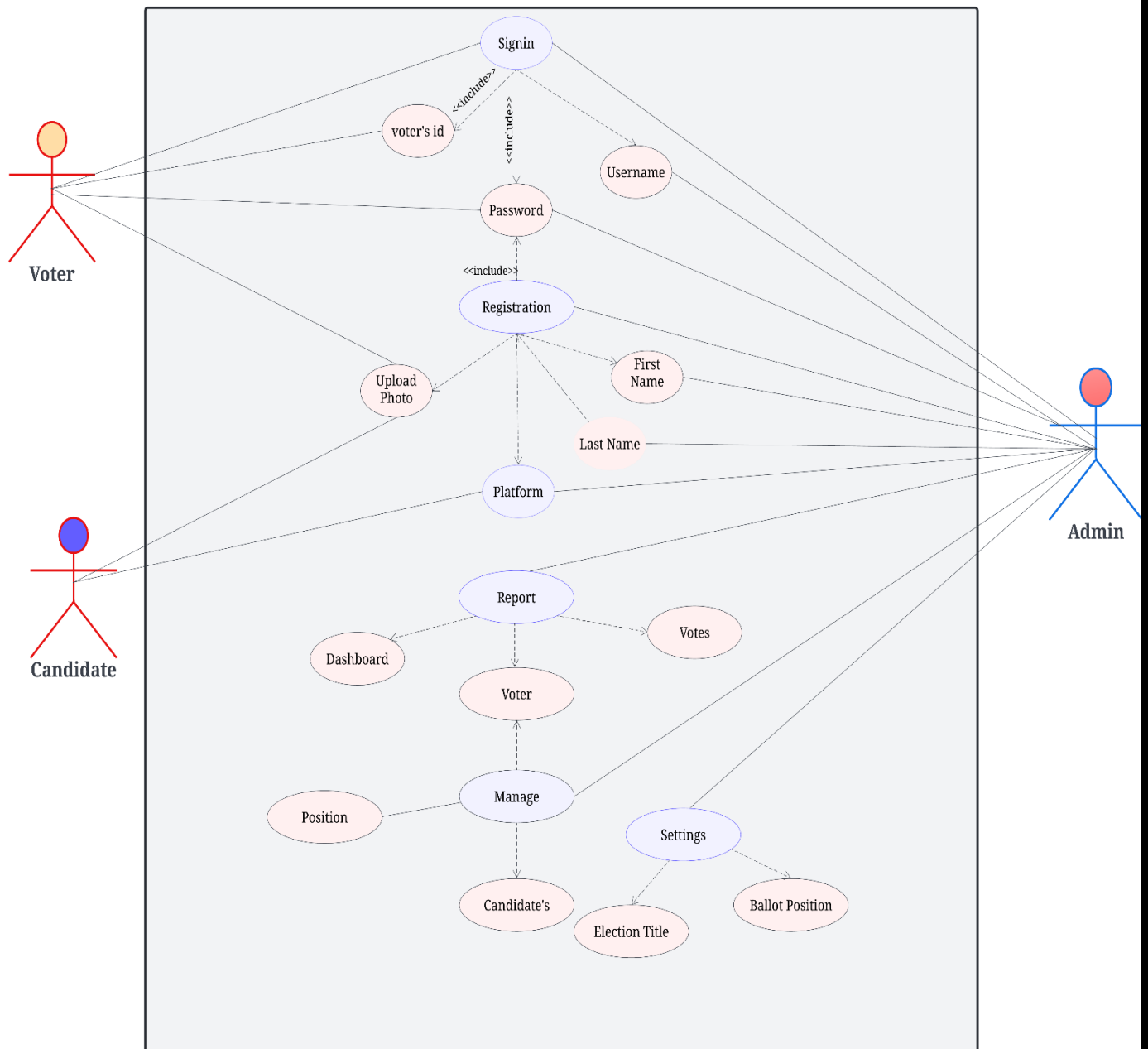
Win-98, Win-XP, Linux, My SQL

3. Software interface:

- Client on intranet: Client Software, Web Browser, Operating System (Windows).
- Client on Internet: Web Browser, Operating System (Windows)
- Web Server: WAMP Server, Operating System (Windows)
- Data Base server: MYSQL, Operating System (Windows).

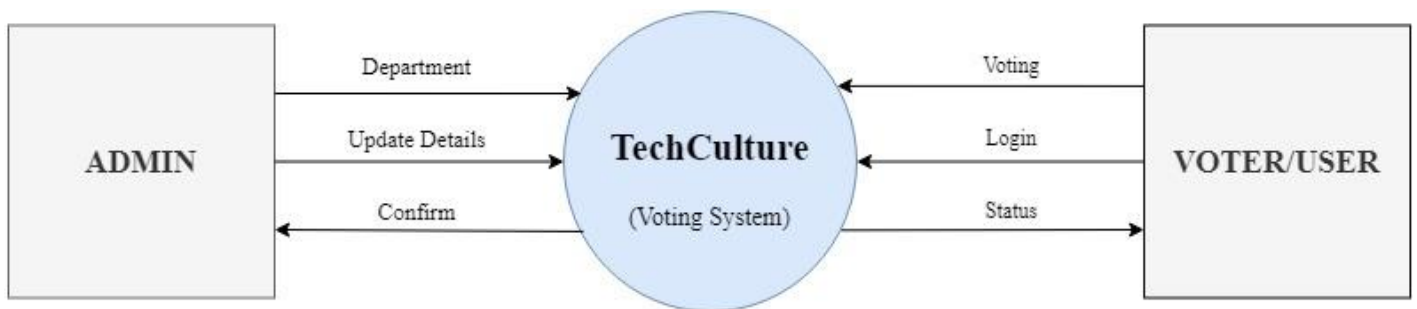
3.2 Use Case Diagram

Use Cases: Voter use case and candidate use case



CHAPTER – 4 DESIGN

4.1 DFD



DFD Level 0

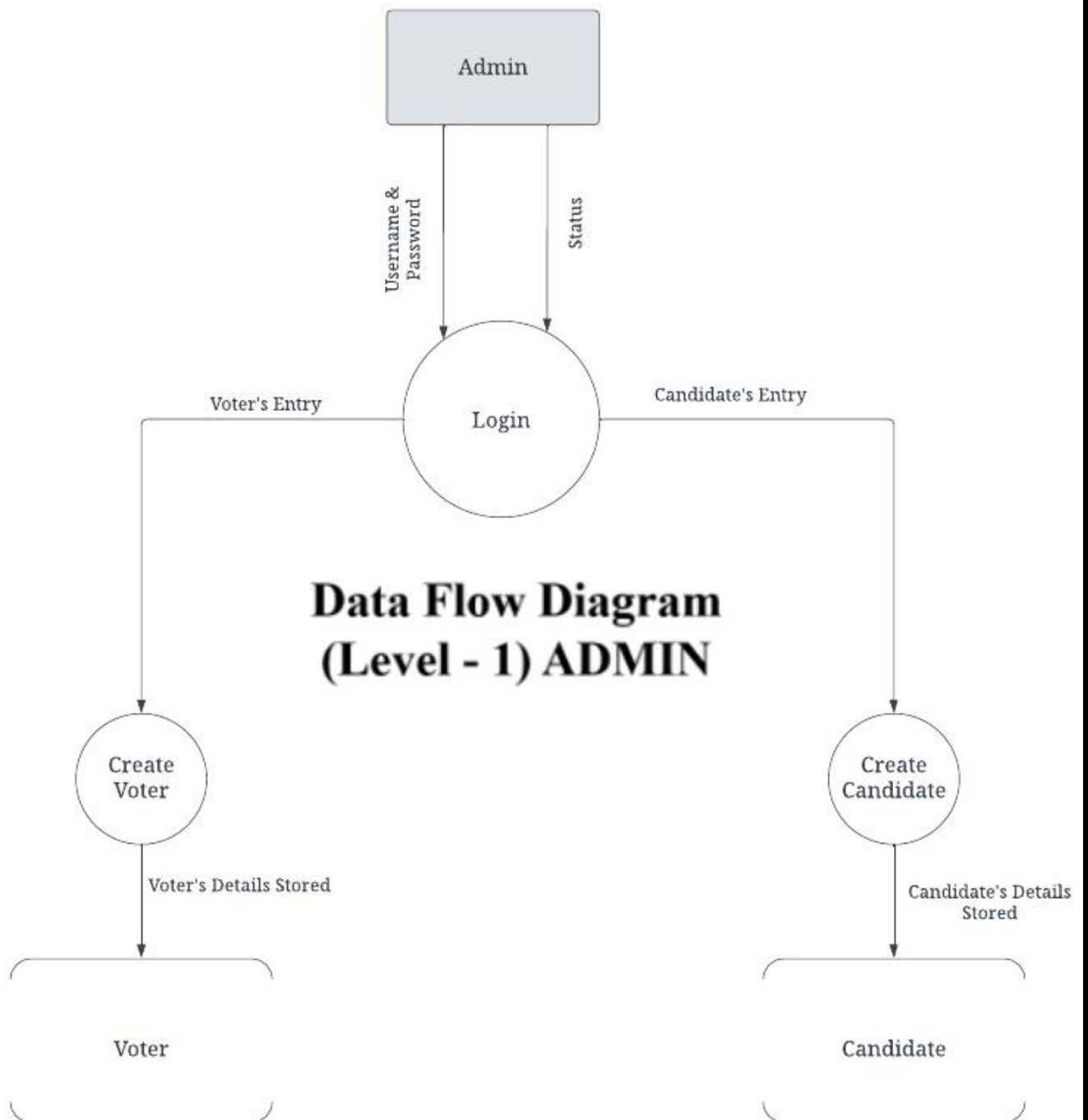


Figure 1-2 Data Flow Diagram level -1 ADMIN

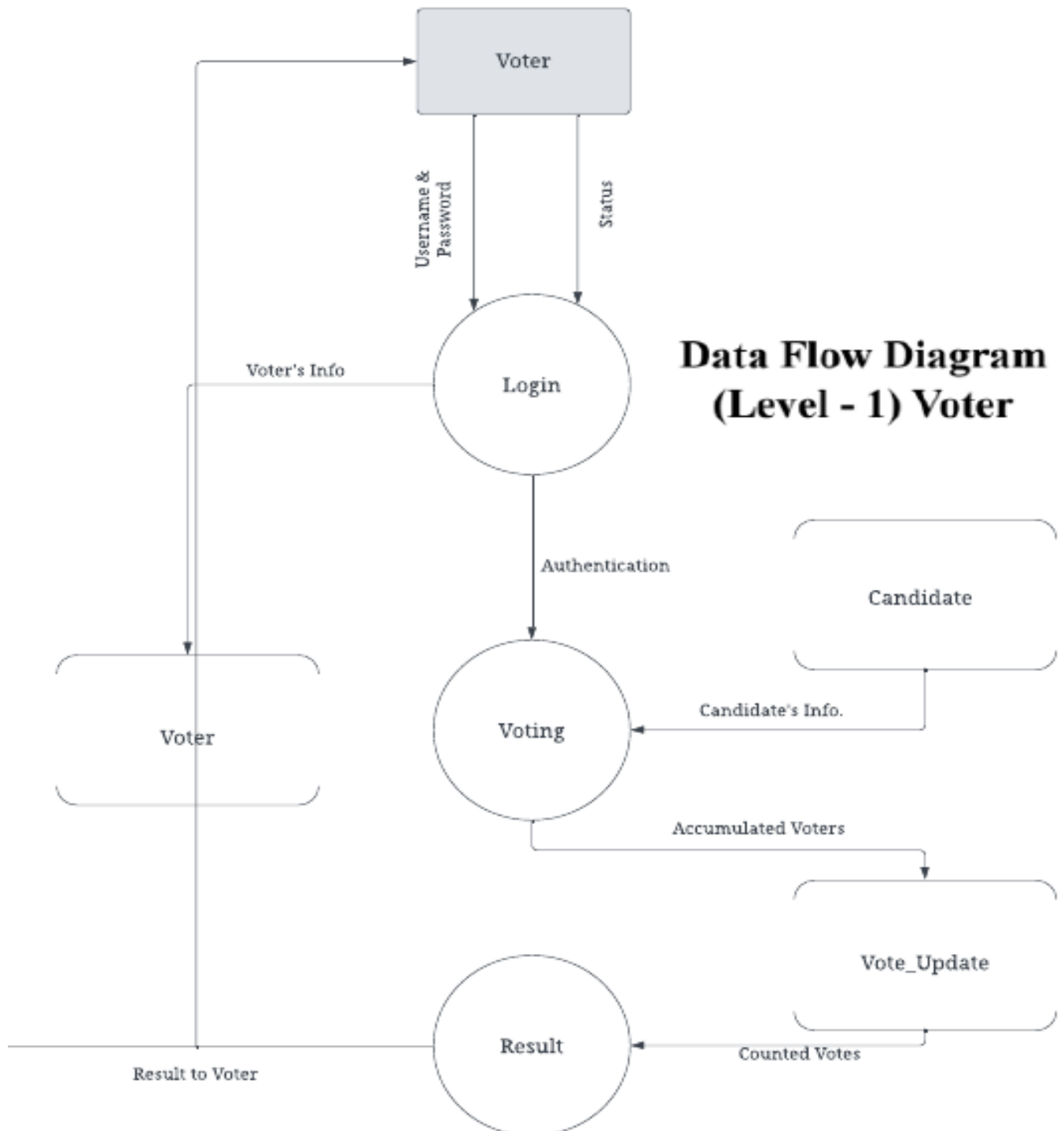


Figure 1-3 Data Flow Diagram level -1 VOTER

4.2 USE CLASS Diagram

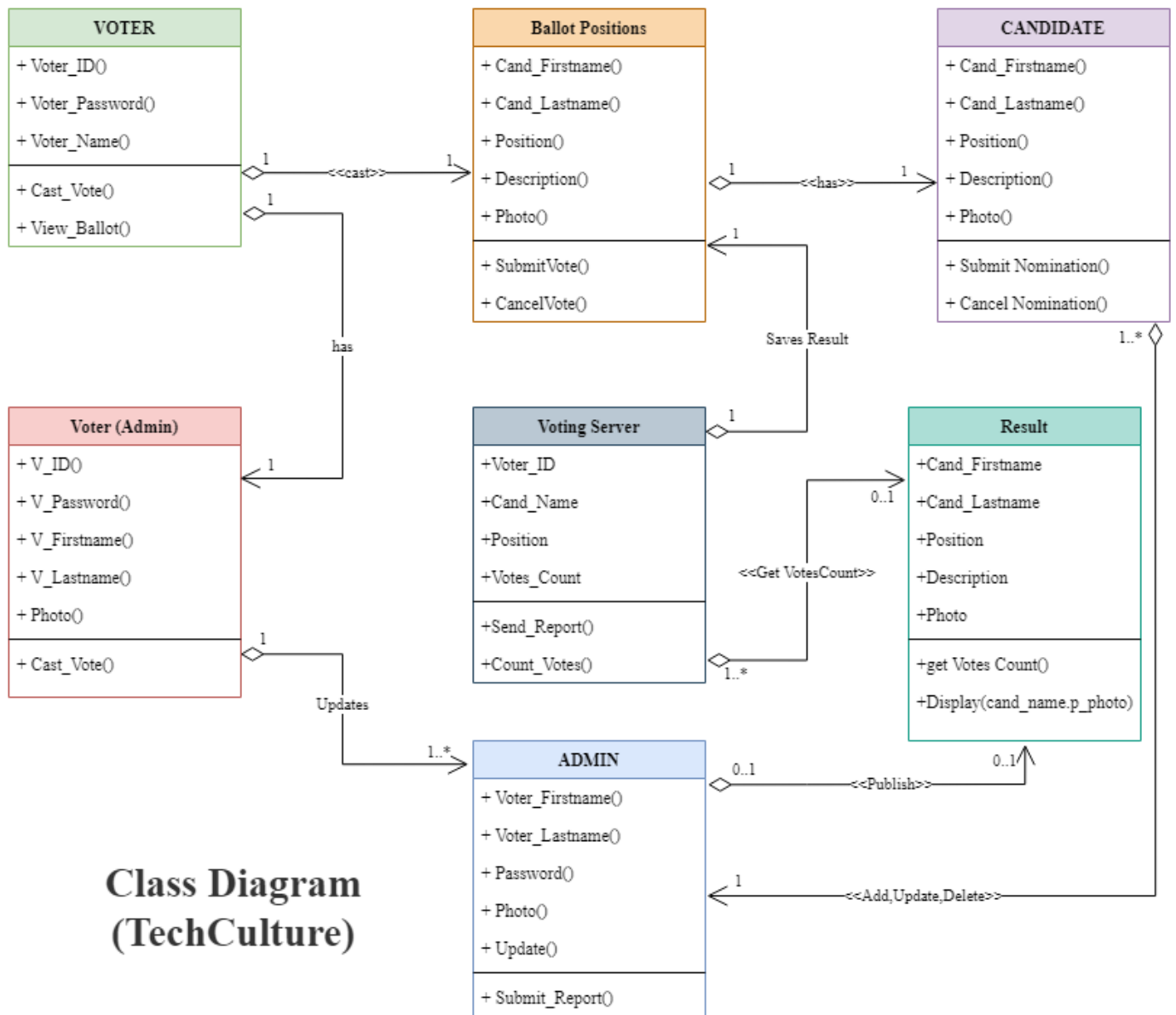
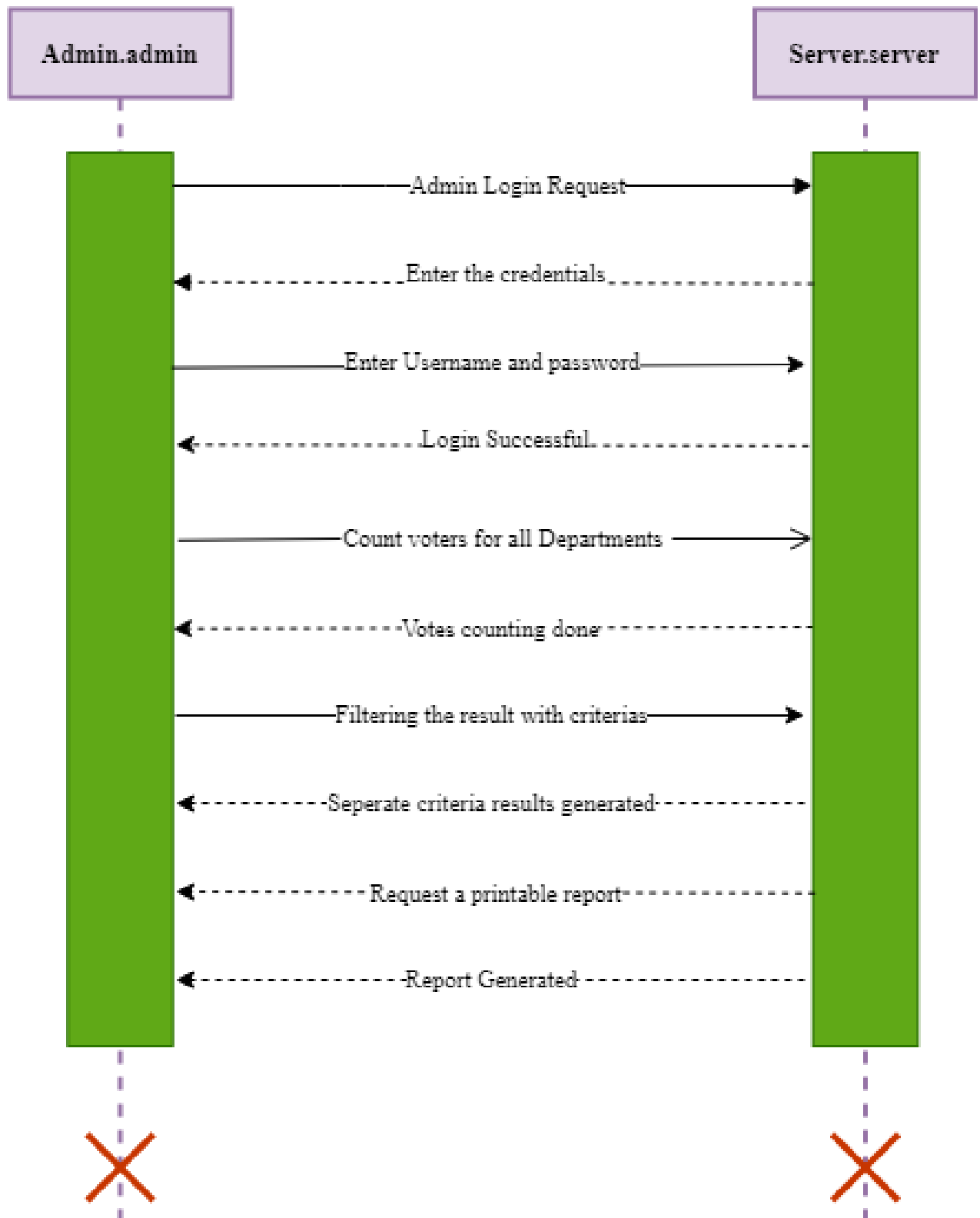


Figure 1-4 Class Diagram

4.5 Sequence Diagram



Sequence Diagram [TechCulture]

Figure 1-5 Sequence Diagram

4.5 ENTITY RELATIONSHIP DIAGRAM

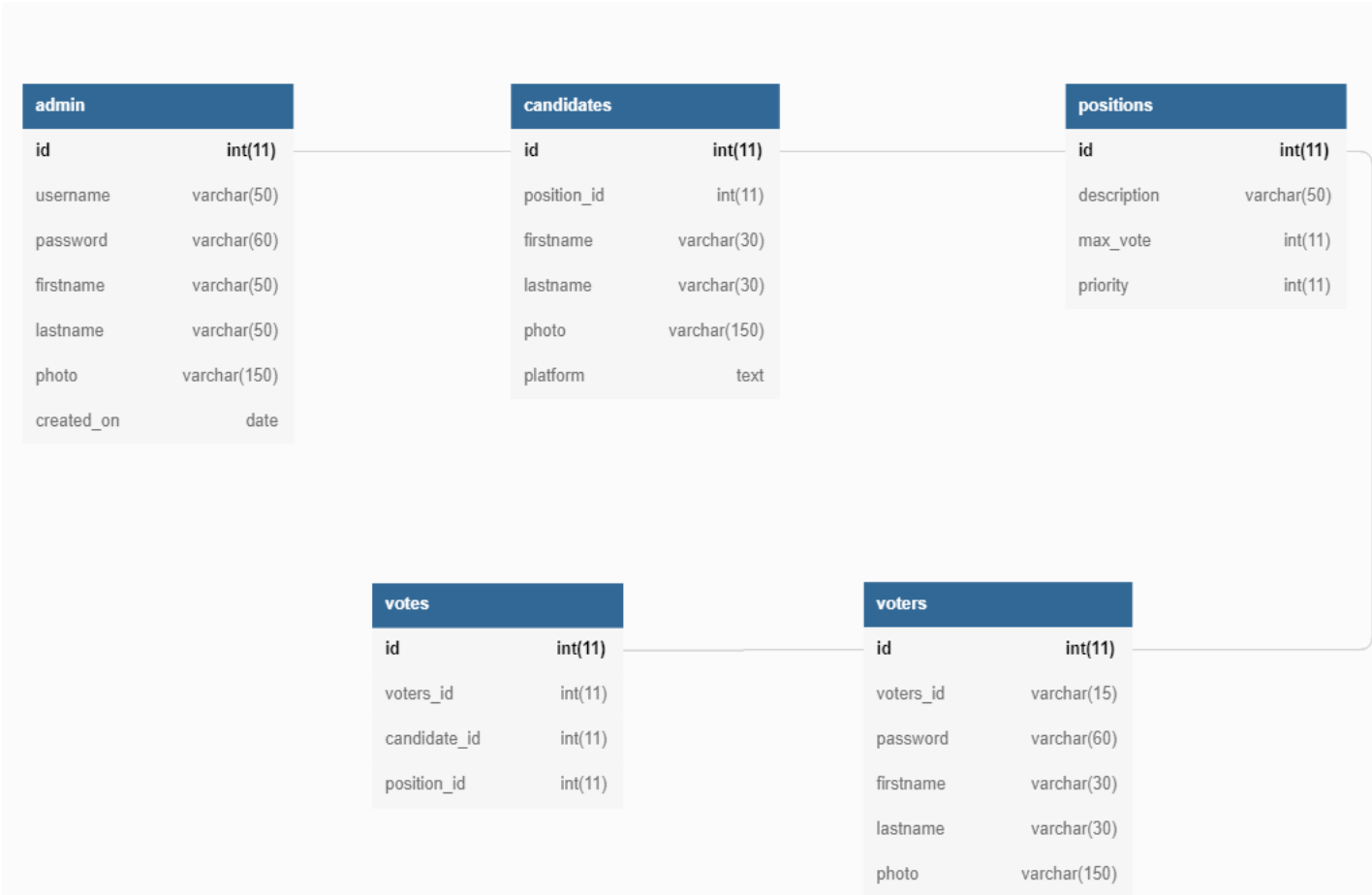


Figure 1-6 Entity Relationship Diagram

CHAPTER-5: IMPLEMENTATION

This section demonstrates an application of an anonymous mobile electronic voting with proxy signer implemented on smartphones. Figure 13 shows a flowchart of this system. In this system, it is assumed that any signer who is asked for his or her public key responds with his or her real public key immediately and that the requester would receive this public key at once. Tables 4, 5, and 6 present the average computation times of each role in each phase, the average communication times of each communication direction in each phase, and the average computation and communication times in each phase, respectively, where PP, RP, CiP, VP, and CoP stand for proxy phase, register phase, circling phase, voting phase, and counting phase. The steps in this system are as follows.

5.1 Functional Programming

Functional programming is a style of programming language, which uses the concepts of mathematical functions. A function in mathematics should always produce the same result in receiving the same argument. In procedural languages, the flow of the program runs through procedures, i.e. the control of the program is transferred to the called procedure. While control flow is transferring from one procedure to another, the program changes its state. In procedural programming, it is possible for a procedure to produce different results when it is called with the same argument, as the program itself can be in a different state while calling it. This is a property as well as a drawback of procedural programming, in which the sequence or timing of the procedure execution becomes important.

Functional programming provides means of computation as mathematical functions, which produces results irrespective of program state. This makes it possible to predict the behavior of the program.

6.2 Screenshots

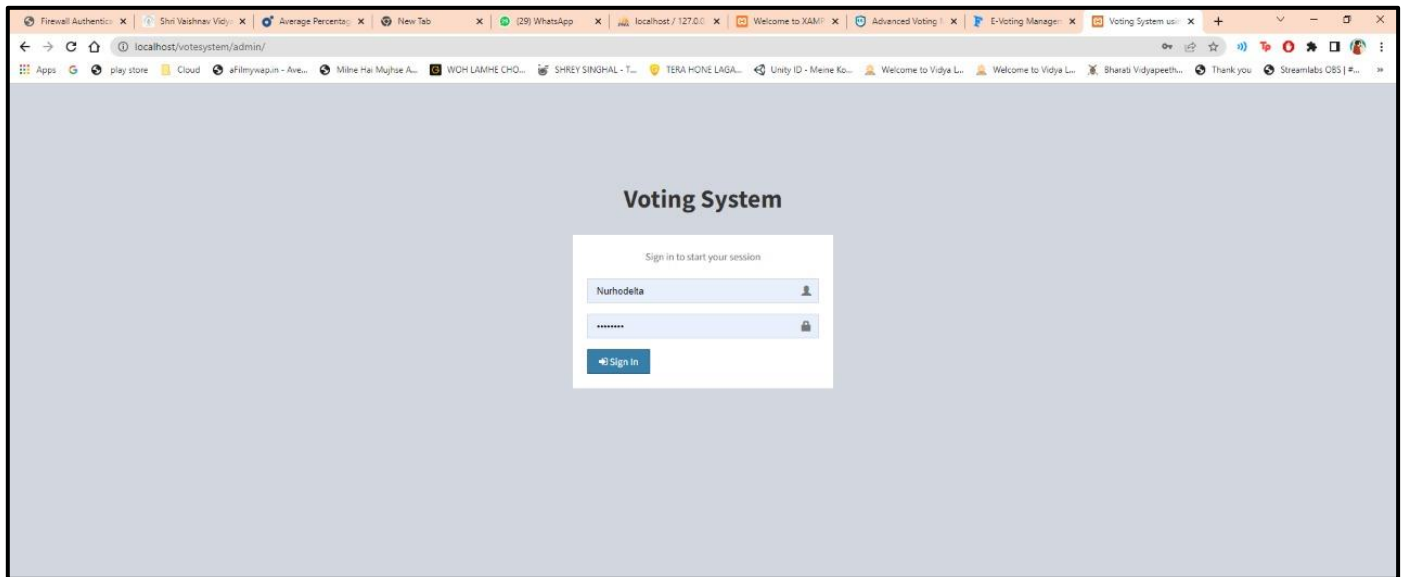


Figure 2- 1 LOGIN PAGE (ADMIN Console)

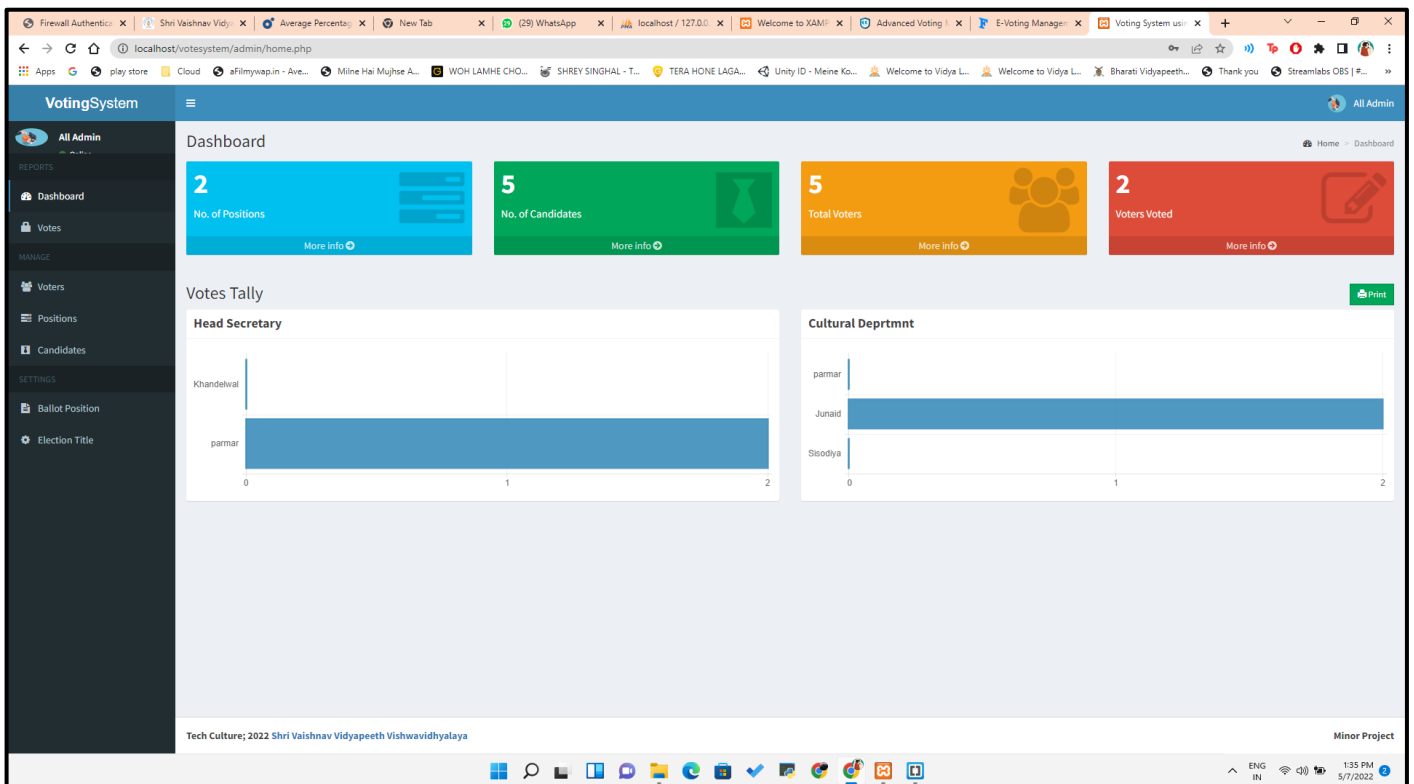


Figure 2- 2 Admin Dashboard

Votes

Reset

Show 10 entries

Search:

Position	Candidate	Voter
Head Secretary	Pranjal parmar	Prateek Luhadiya
Head Secretary	Pranjal parmar	Urvashi Mandovker
Cultural Deptmnt	Sheikh Junaid	Prateek Luhadiya
Cultural Deptmnt	Sheikh Junaid	Urvashi Mandovker

Showing 1 to 4 of 4 entries

Previous 1 Next

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Figure 2- 3 Votes (ADMIN)

Voters List

New

Show 10 entries

Search:

Lastname	Firstname	Photo	Voters ID	Tools
Luhadiya	Prateek		✓ rSNsPiBL4mb1MU3	Edit Delete
Mandovker	Urvashi		✓ IMRQL796wESKOxt	Edit Delete
Mandovker	Urvashi		✓ UuJIN8vnFYLzaC	Edit Delete
More	Rohan		✓ Pxn1gfGVHZMohK	Edit Delete
Nurhodelta	Junaid		✓ S13oXlImrdWeNf8	Edit Delete

Showing 1 to 5 of 5 entries

Previous 1 Next

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Figure 2- 4 Voters (ADMIN)

The screenshot shows the 'Add New Voter' form in the VotingSystem admin panel. The form is a modal window with the following fields:

- Firstname:
- Lastname:
- Password:
- Photo: No file chosen

At the bottom of the form are two buttons: 'Close' and 'Save'.

In the background, the 'Voters List' table is visible, showing columns for Lastname and Firstname. The table contains the following data:

Lastname	Firstname
Luhadiya	Prateek
Mandovker	Urvashi
Mandovker	Urvashi

Figure 2- 5 ADDING new Voter (ADMIN)

The screenshot shows the 'Positions' page in the VotingSystem admin panel. The page has a sidebar with navigation links: All Admin, Reports (Dashboard, Votes), Manage (Voters, Positions, Candidates), and Settings (Ballot Position, Election Title). The main content area displays a table of positions with the following data:

Description	Maximum Vote	Tools
Head Secretary	1	<input type="button" value="Edit"/> <input type="button" value="Delete"/>
Cultural Deptmnt	1	<input type="button" value="Edit"/> <input type="button" value="Delete"/>

At the bottom of the table, it says 'Showing 1 to 2 of 2 entries'. There are 'Previous', '1', and 'Next' buttons for pagination.

The footer of the page contains the text: 'Tech Culture; 2022 Shri Vaishnav Vidyapeeth Vishwavidhyalaya' and 'Minor Project'.

Figure 2- 6 Positions

votesystem/admin/positions.php

Cloud aFilmywap.in - Ave... Milne Hai Mujhse A... WOH LAMHE CHO... SHREY SINGHAL - T... TERA HONE LAGA... Unity ID - Meine Ko... Welcome to

Positions

+ New

Show 10 entries

Description

Head Secretary

Cultural Deptmnt

1

Showing 1 to 2 of 2 entries

Add New Position

Description

Maximum Vote

Close Save

Figure 2- 7 ADD new Position

VotingSystem

All Admin

Candidates List

+ New

Show 10 entries

Search:

Position	Photo	Firstname	Lastname	Platform	Tools
Head Secretary		Pranjal	parmar	View	Edit Delete
Head Secretary		Prateek	Khandelwal	View	Edit Delete
Cultural Deptmnt		Shristi	Sisodiya	View	Edit Delete
Cultural Deptmnt		Sheikh	Junaid	View	Edit Delete
Cultural Deptmnt		Sachin	parmar	View	Edit Delete

Showing 1 to 5 of 5 entries

Previous 1 Next

Tech Culture; 2022 Shri Vaishnav Vidyapeeth Vishwavidhyalaya

Minor Project

Figure 2- 8 CANDIDATE LIST

Add New Candidate

Firstname

Lastname

Position

- Select -

Photo

Choose File

No file chosen

Platform

Close

Save

Figure 2- 9 Add new Candidate

VotingSystem

All Admin

REPORTS

Dashboard

Votes

MANAGE

Voters

Positions

Candidates

SETTINGS

Ballot Position

Election Title


Ballot Position

Head Secretary

Select only one candidate

☐


Platform



Pranjal parmar

☐

Platform




Prateek Khandelwal

Cultural Deptmnt

Select only one candidate

☐


Platform



Shristi Sisodiya

☐


Platform



Sheikh Junaid

☐

Platform



Sachin parmar

Figure 2- 10 BALLOT

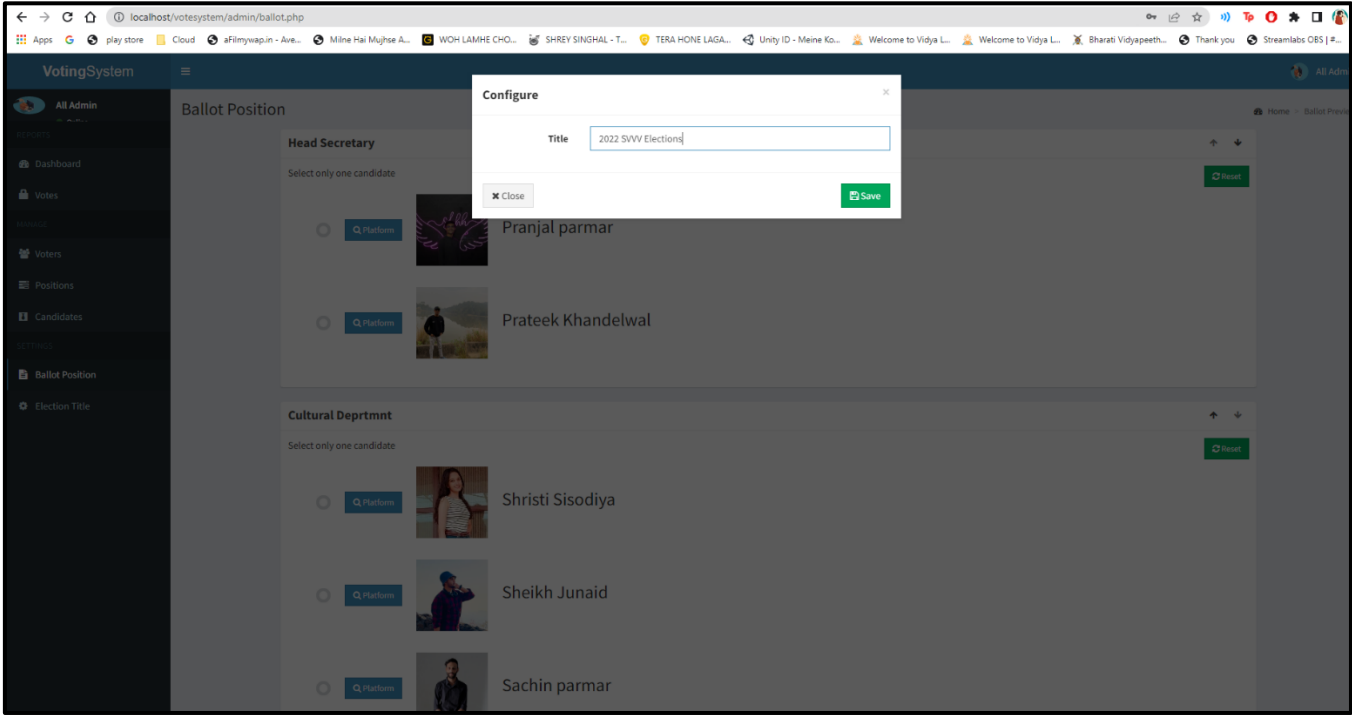


Figure 2- 11 Election Title

CHAPTER-6: TESTING OBJECTIVES

6.1 Software Testing

Software Testing is Important because if there are any bugs or errors in the software, it can be identified early and can be solved before delivery of the software product. Properly tested software product ensures reliability, security, and high performance which further results in time saving, cost effectiveness and customer satisfaction.

The first step in the test planning process is to document the high-level test objectives.

6.1.1 Testing Objectives

The test objectives provide a prioritized list of verification or validation objectives for the project. You use this list of objectives to measure testing progress and verify that testing activity is consistent with project objectives.

Test objectives can typically be grouped into the following categories:

- **Functional correctness.** Validation that the application correctly supports required business processes and transactions. List all of the business processes that the application is required to support. Also list any standards for which there is required compliance.
- **Authorization.** Verification that actions and data are available only to those users with correct authorization. List any key authorization requirements that must be satisfied, including access to functionality and data.
- **Service level.** Verification that the system will support the required service levels of the business. This includes system availability, load, and responsiveness. List any key performance indicators (KPIs) for service level, and the level of operational effort required to meet KPIs.
- **Usability.** Validation that the application meets required levels of usability. List the required training level and user KPIs required.

The different **Types of Functional Testing** include:

6.1.2 Unit Testing

It is a level of software testing where individual units/ components of a software are tested. The purpose is to validate that each unit of the software performs as designed. A unit is the smallest testable part of any software. It usually has one or a few inputs and usually a single output.

Benefits of Unit Testing

- Unit testing increases confidence in changing or maintaining code. If good unit tests are written and if they are run every time any code is changed.
- Codes are more reusable. To make unit testing possible, codes need to be modular.
- Development is faster. The effort required to find and fix defects found during unit testing is very less in comparison to the effort required to fix defects found during system testing or acceptance testing.
- The cost of fixing a defect detected during unit testing is lesser in comparison to that of defects detected at higher levels.
- Debugging is easy. When a test fails, only the latest changes need to be debugged.

6.1.3 Integration Testing

It is a level of software testing where individual units are combined and tested as a group. The purpose of this level of testing is to expose faults in the interaction between integrated units.

Approaches of Integration Testing

- **Big Bang** is an approach to Integration Testing where all or most of the units are combined and tested at one go. This approach is taken when the testing team receives the entire software in a bundle.
- **Top Down** is an approach to Integration Testing where top-level units are tested first and lower-level units are tested step by step after that. This approach is taken when top-down development approach is followed.
- **Bottom Up** is an approach to Integration Testing where bottom level units are tested first and upper-level units' step by step after that. This approach is taken

when bottom-up development approach is followed.

- **Sandwich/Hybrid** is an approach to Integration Testing which is a combination of Top Down and Bottom-Up approaches.

6.1.3.1 Big Bang Approach:

Big Bang Testing is an Integration testing approach in which all the components or modules are integrated together at once and then tested as a unit. This combined set of components is considered as an entity while testing. If all the components in the unit are not completed, the integration process will not execute.

6.1.3.2 Incremental Approach:

- **Top-Down Approach:** It is a method in which integration testing takes place from top to bottom following the control flow of software system. The higher-level modules are tested first, and then lower-level modules are tested and integrated in order to check the software functionality. Stubs are used for testing if some modules are not ready.
- **Bottom-Up Approach:** Bottom-up Integration Testing is a strategy in which the lower-level modules are tested first. These tested modules are then further used to facilitate the testing of higher-level modules. The process continues until all modules at top level are tested. Once the lower-level modules are tested and integrated, then the next level of modules are formed.
- **Sandwich Approach:** Combination of Top Down and Bottom Up

6.1.3 System Testing

It is a level of software testing where a complete and integrated software is tested. The purpose of this test is to evaluate the system's compliance with the specified requirements.

CHAPTER-7: CONCLUSION AND FUTURE WORK

7.1 LIMITATION

In democratic countries, voting is a vital tool to collect and re-act people 's views. In the elections, the election of member of the assembly, the head of local/state government election, and others, a voter can cast vote after going to the designated polling place and checking his identity. Conventionally, voting booth is used for casting votes in both centralized and distributed places. Voting is done under the supervision of authorized parties. Counting of votes is done manually once the election is over. But with the rapid growth of electronic voting system, computer technology and cryptographic methods can be used that substitute the occurrence and most significantly error-prone human Component. To increase the productivity and accuracy of voting processes, electronic voting systems were developed to help accumulating and counting the votes. It comprises Lever Voting Machines, Punched Cards for Voting, Optical Mark-Sense Scanners and Direct Recording Electronic (DRE) voting systems. In this paper, we recommend an electronic voting system that lets a voter to be identified using a wireless certificate without furthermore registering when a user vote using his mobile device such as a mobile phone or a PDA. We also propose a process that guarantees the confidentiality of voter and the secrecy of vote content. By our electronic voting system, a voter can cast his vote more easily and conveniently than the existing electronic voting using internet, within the planned period of time anywhere even when a voter is not able to access internet on a voting day. Our suggestion can be used in all kinds of elections national as well as state/local elections. Our goal is not to design a cryptographically provable protocol [1] but to demonstrate electronic voting model and to define a voting procedure.

7.2 THE FUTURE OF E VOTING:

The Future of E-Voting the Problem Voting is an act of democracy. Citizens are given the opportunity to voice their opinions by voting. And although some feel that one vote doesn't matter, others feel that their vote is important and can determine the outcome of an election. And it might. How confident are we that our vote counts? Security, accuracy, ease of use, efficiency, and costs are aspects of voting to consider. If there is fault in any one of these aspects, is it worthwhile to vote? Would society benefit if improvements were made to the current voting systems? The arguments made in favor of paper ballots versus electronic ballots persist. Yet which one is more beneficial to society? And does this outweigh its costs? 2000 Election In the 2000 National Election the famous "butterfly ballot" episode in Palm Beach, Florida sparked controversy for several reasons:

1. The ballot design,
2. The inconsistent election rules,
3. Voter error, and
4. Allegations of fraud.

It is important to review what happen in 2000, because the election caused a dramatic wave for new laws to be implemented and it weighed the advantages/disadvantages of manual vs. electronic systems. To be able to analyze the problem, the individual must know what the threats are, detection, correction, defense, vulnerability, of both systems.

Technology is advancing, and in order to make that leap forward with electronic machines security issues need to be addressed. It's crucially important to remember that manual/electronic systems are not the only issue, but political parties, lobbyists, and the government also play a critical role to the problem.

7.3 CONCLUSION:

In the preceding chapters a variety of views and developments regarding electronic voting has been presented. On the one hand, the evidence makes it clear that in some places the opportunities offered by Internet voting are being keenly explored. In several countries the foundations for online voting are being put in place, experiments have been carried out or policies are being drafted. On the other hand, critical analyses that warn against fundamental problems of Internet voting have been presented, suggesting that Internet voting is not really a viable option for serious democracies. Several countries otherwise deeply committed to democratic practices hesitate to pursue online democracy. What can be made of these seemingly contradictory trends? Is there a future for Internet voting? Are the critics right in their claim that online election is a dead-end street? Or should we trust the proponents' belief that technical and social problems will be overcome, and go for the advantages promised by electronic channels of voting? Interesting as these issues of the feasibility and desirability of online elections may be, we wish to develop a somewhat different line of reasoning by asking why some countries decide to move faster along the path of Internet elections than others. In our opinion, it is impossible to make definite claims about the appropriate stance to be taken, irrespective of the context in which voting takes place. In this chapter we will argue that variations in social and political context influence the adoption of Internet voting. Countries, populations, electoral systems, public attitudes, political and administrative arrangements differ widely, and all these factors play a role regarding how Internet voting may be adopted. This means that in different countries with different circumstances the decisions on whether to introduce a particular kind of Internet voting may, and indeed do, differ.

CHAPTER-8: REFERENCES

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