**SOUTHWESTERN STATE COLLEGE**

**TRIBHUVAN UNIVERSITY**

**FACULTY OF HUMANITIES AND SOCIAL SCIENCE**



A

**Project Report**

**On**

**ONLINE VOTING SYSTEM**

**Submitted to**

**Department of Computer Application**

**Southwestern State College, Basundhara, Kathmandu**

***In partial fulfillment of the requirements for the Bachelor in Computer Application***

***Submitted By***

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**SUPERVISOR’S RECOMMENDATION**

We hereby recommend that this project is prepared by Reshma Pokhrel and Naresh Khatri under supervision by Mr. Kiran Ghimire entitled “**ONLINE VOTING SYSTEM**” in partial fulfillment of the requirements for the degree of Bachelor of Computer Application be processed for the evaluation.

Kiran Ghimire

Designation

**LETTER OF APPROVAL**

This is to certify that this project is prepared by Reshma Pokhrel (6-2-530-23-2020) and Naresh Khatri(6-2-530-20-2020) entitled “**ONLINE VOTING SYSTEM** in partial fulfillment of the requirements for the degree of Bachelor in Computer Application has been evaluated. In our opinion it is satisfactory in the scope and quality as a project for the required degree.

Kiran Ghimire

Project Supervisor

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Dhurba Prasad Timalsina External Examiner

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Naresh Khatri

Reshma Pokhrel

Date:

**ABSTRACT**

A digital platform that enables college students to vote online for student body elections or other relevant events is known as an online voting system for colleges. With the use of this technology, student elections will be conducted in a more practical, open, and inclusive manner, enabling more students to take part regardless of where they are or how much time they have available.

The system uses strong measures for authentication, encryption, and verification to guarantee the security and integrity of the voting process. Additionally, the system offers real-time feedback and vote counting, enabling prompt and precise results that may be made public right after the voting period. Overall, a college-level online voting system can improve student participation, raise voter turnout, and foster a more democratic and welcoming campus environment. Using this system all the user information are stored in the user database and we easily see the result.

*Keywords: online voting system, user Information System, Database, transaction record, relevant events, etc.*

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**LIST OF ABBREVATIONS**

**Put List of Abbreviations in an alphabetical order**

# CHAPTER 1: INTRODUCTION

## 1.1. Introduction

An online voting system for colleges is a digital platform that enables students, professors, and staff members to electronically participate in a range of college elections, such as those for the student council, faculty committee, or board of trustees. Many institutions believe it to be less

It may not be desirable to continue using the outdated paper-based voting system since it is time-consuming, expensive, and prone to error. Online voting methods offer several benefits, including as enhanced simplicity, accessibility, and transparency. Students may vote anytime they choose, from any location, and on any device by using online voting systems, which replaces the requirement for in-person voting and paper ballots. Additionally, online voting methods can decrease the likelihood of vote fraud and ensure an election is fair. The fundamental goal of an online voting system for college students is to give them a quick, safe, and secure way to take part in the democratic process of student body elections and other associated activities. More students can engage in the voting process regardless of where they are by offering a digital platform. This project is on the base of HMTL, CSS, Jscript, and PHP.

## 1.2. Objectives

* To find the CR on the basis of vote
* To notify the users about the election.

## 1.3. Problem Statement

The majority of voters experienced issues with false voting, duplicate voting, vote rejection, and booth capturing voter lists because of its manual procedures. Hence, this online voting technique must be used to address these issues. So, for that the ideal software should be programmed to carry out the numerous duties necessary for the voting system to function. This technology will increase voting system effectiveness and permit the user data to be stored digitally. Time will be saved for votes and users and also prevent fraud and make sure a vote is fair.

## 1.4. Scope

Our goal is to create an atmosphere of fairness among candidates and voters alike. Anyone who wants to stand for election can do so without any reservations since this method will provide accurate results. Our primary motivation for developing this system is to benefit college users because many college related activities, such as choosing a class's CR selection, a teacher selection for a department's HOD, or the location of a tour program, will require votes or a majority to decide. This approach of online voting will effectively address every issue and save our time while providing security and preventing fake votes, duplicate votes, and vote rejection. The user may find the results in the allotted time, and the procedure will be quite simple. We had a lot of issues with paper-based voting in the past, so after considering all the possibilities, we decided to create this project that will reduce a lot of things and affect the population of the earth indirectly. The paper that was used in the voting system resulted from issues that this system played a crucial role in resolving. Tools for generating, uploading, and screening users or candidates are all part of this system. This project main goal is to develop a user-friendly and efficient voting system that simplifies the voting process for both candidate and voters. You may discover several benefits in our project over here like efficiency gains, accuracy gains, and voter participation. Our initiative provides you with fair results without displaying any authority, pressuring the voter, or doing anything else similar. People are free to choose their votes as they see fit, free from candidate pressure, and from the comfort of their own.

## 1.5. Report Organization

In chapter 1: College elections for student councils, faculty committees, and the board of trustees may all be participated in on a digital platform called an online voting system for colleges. This technology, which replaces in-person voting and paper ballots, has advantages such as improved simplicity, accessibility, and transparency. It also assures fair elections and lessens the possibility of vote fraud. The project's goals are to discover the CR based on votes and inform users about the election. It is built on HMTL, CSS, JScript, and PHP. False voting, duplicate voting, vote rejection, and voter lists being captured in the voting booth are the primary issues with paper-based voting. The optimal software should be developed to carry out numerous functions, enhancing the efficacy of the voting system and avoiding fraud, in order to handle these difficulties. The objective is to provide accurate results, save time, and foster a climate of fairness among voters and candidates.

The project's goal is to create an effective and user-friendly voting system that makes it easier for voters and candidates to cast ballots. It delivers impartial outcomes without imposing authority or exerting pressure on voters, letting individuals to cast their ballots as they see fit and free from candidate or outside pressure.

In chapter 2: Online voting systems face challenges such as outdated information, time-consuming processes, false voting, duplicate voting, and vote rejection. To address these issues, online voting efficiently handles issues, saves time, and provides security by eliminating bogus votes, duplicate votes, and rejected votes. The user-friendly process saves time and improves the overall electoral process. However, paper-based electronic voting systems can be time-consuming, expensive, and error-prone. By addressing these challenges and improving user experience, online voting can contribute to global population growth and improve the electoral process.

Election officials visit voters' residences to confirm identify and give voter identification cards under the paper-based method, which calls for residents 18 and older to be enumerated six months beforehand. This meticulous approach may be costly, time-consuming, prone to mistakes, and less secure.

Online voting systems can enhance the political process by giving voters a more precise, practical, and helpful platform to select their chosen candidate.

Online voting has the potential to dramatically enhance the whole election process and contribute to the increase in world population by addressing these issues and enhancing user experience.

In chapter 3: The system analysis involves studying the technology, data sources, programming languages, and tools used in the project. It includes functional requirements such as user registration, login, candidate addition, voting, uploading results, viewing details, adding notices, and user access. Non-functional requirements include an intuitive user interface, good response, protection, and compatibility with various systems and devices.

Software requirements include Visual Studio Code for code editing, MySQL for database management, Microsoft Word for documentation, and Snipping Tool for screenshots. Hardware requirements include an Intel Core i3 processor, 4GB RAM, and 3-5 Mbps internet speed.

The project is technically feasible, with hardware and software requirements such as Visual Studio Code, MySQL, Microsoft Word, and Snipping Tool. Operational feasibility involves creating an account and completing the registration process. Economic feasibility determines the system's cost and benefits, with lower development expenses indicating economic viability.

System design includes data modeling, architectural design, database schema design, and interface design. User interface design focuses on the communication between users and computers, including starting the system, logging in, and displaying desired inputs and outputs.

In chapter 4: We have describe about implementation and testing in this part for the implementation we have use waterfall model because you know all the requirement needed for it. For testing, we have tested login and register form of the system all the part are successful executed in the system and run effectively and manually by system.

# CHAPTER 2: BACKGROUND STUDY AND LITERATURE REVIEW

## 2.1. Background Study

Online voting system websites frequently encounter a number of difficulties and restrictions that might affect the user experience. The lack of a good system that will benefit voters is one of the primary worries. Users could encounter obsolete information that is time-consuming and redundant. Users are facing lots of difficulty are in false voting, duplicate voting, vote rejection, and booth capturing voter lists.

Another problem is the slow resulting times from users. In Online voting system you may votes candidate who are stand for it and wait for extended periods as per admin mention and publish result throughout the dashboard . This lack of timely communication can create uncertainty.

Voters service is another area that requires improvement. Voters often face difficulties or have questions about using the online voting system effectively, but the available support may be limited or not responsive enough. Users may feel abandoned as a result, which makes it harder for them to use the site effectively.

In addition, some demand that consumers have access to useful features and resources. All voters who have participated in the process can access this system without having the necessary funds.

To address these issues, Online voting will efficiently handle all issues, save us time, and provide security by eliminating bogus votes, duplicate votes, and votes that are rejected. The process will be pretty straightforward, and the user may find the outcomes in the allocated time. After carefully weighing our options and taking into account the numerous problems we previously encountered with paper-based voting, we made the decision to develop this initiative, which would indirectly effect global population growth. The voting method's usage of paper came about as a result of problems that this system was instrumental in overcoming. This system includes tools for creating, uploading, and screening users or applicants.

Voter response times must be improved if users are to have a favorable experience. Voters and candidates may eliminate confusion and improve the overall effectiveness of the online voting process by encouraging rapid and frequent interaction.

By overcoming these difficulties and limits, internet voting may simplify the electoral process by providing voters with a more accurate, useful, and helpful platform to choose their preferred candidate and increase the benefits of voting.

## 2.2. Literature Review

This chapter discusses techniques and tools for developing a project, examining existing systems and addressing shortcomings. It aims to justify the project's importance and distinguish it from similar systems in various academic fields.

A website that links users and candidates directly to the voting platform makes the voting process easier and faster. This is known as an online voting system. Online voting has become a popular tool for individuals to choose the candidate they like as internet usage grows. We shall examine the literature and research on online voting systems and their effects on voters in this review.

**Existing system**

1. **Electronic voting**

Electronic voting, commonly referred to as e-voting, includes both digital voting and online vote counting. punched cards, optical scan voting systems, customized voting stands transmission of vote results, and ballots cast over the phone, using private networks, or online. With the development of technology, there are now several types of electronic voting systems, including paper-based electronic voting, Direct Recording public network, voting online Direct Capture Voting electronically.

The disadvantage are:

* Punched cards are used in this method, therefore it damage and information might be lost.
* Too many confusing occurs for users

1. **Paper-based electronic voting system**

Votes are cast and counted manually using paper voting in the original form of paper-based voting systems. Paper cards or sheets might be marked manually and then electronically tallied thanks to the development of electronic tabulation systems.

The disadvantage are:

* In this voting technique, the paper voting might be damaged by the ink since the procedure involves using an ancient stamp that beginners might use incorrectly.
* Procedures for voting will be time-consuming.

1. **Paper Based Process**

The paper-based electoral system requires citizens aged 18 or older to be enumerated six months in advance, and election workers visit their addresses to verify identity and issue voter IDs. This rigorous process requires extensive paper work and training for polling duty staff. Staff members must be present half an hour before polling to ensure proper arrangements are made. The Officer in charge must complete a checklist, including ensuring polling stations are in contact, security forces are notified, and Presiding Officers and Poll Clerks are clearly identified.

The disadvantage are:

* In this his process may end up being time-consuming, expensive, and error-prone.
* In this his process have a less security

# CHAPTER 3: SYSTEM ANALYSIS AND DESIGN

## 3.1. System Analysis

The development of the suggested system is now thoroughly studied, and the real work starts. It will examine the technology, data sources, programming languages, and tools employed along with their rationale. The project will be described using dataflow diagrams, flowcharts, use-case diagrams, relationship and entity diagrams, etc.

### 3.1.1. Requirement Analysis

### Functional Requirements

* A user shall register
* A user and admin shall login to the system.
* Admin shall able to add the candidates and election.
* User shall able to votes on their preferred candidates.
* Admin shall able to upload their result.
* Admin shall view the details.
* Admin shall able to add notice.
* User shall able to view the notice

**A picture containing diagram, line, sketch, drawing

Description automatically generated** USE-CASE DIAGRAM

Figure 1: Use-case diagram

### Non Functional Requirements

* The system must have intuitive UI
* The system must have a good response.
* The system must to be protected
* The system must be compatible with different systems and devices

### System Requirement

Table 1: Software Requirements

|  |  |  |
| --- | --- | --- |
| **SN** | **Software** | **Purpose** |
| 1 | Visual Studio Code | Code Editor |
| 2 | MySQL | DBMS to store data and information |
| 3 | Microsoft Word | Documentation |
| 4 | Snipping Tool | Screenshots |

Table 2: Hardware Requirements

|  |  |  |
| --- | --- | --- |
| **SN** | **Hardware Requirements** | **Specification** |
| 1 | Processor | Intel Co re i3 2.0 GHz or higher |
| 2 | RAM | 4 GB or higher |
| 3 | Internet Speed | 3-5 Mbps |

### 3.1.2. Feasibility Analysis

### Technical Feasibility

Our project is also technically feasible, as it uses hardware such as Process Intel Co re i3 2.0 GHz or higher RAM 4 GB or higher and Internet Speed 3-5 Mbps and software requirement are Visual Studio Code for Code Editor, MySQL for DBMS to store data and information, Microsoft Word for Documentation and Snipping Tool for Screenshots by effectively implementing our system employing the most recent technologies.

### Operational Feasibility

To register our project online voting system, first, you need to create a account and complete the given process. Once the registration is completed you can enter to the system directly and access the all the facility provided over there.

### Economic Feasibility

Economic viability determines the suggested system's cost and benefits. If the development expenses of a project are lower than the projected costs, the project is economically feasible. These benefits and drawbacks could be material or intangible. Because there is less likelihood of intangible expenses, it is easy to estimate the project's cost, where as our project provides services free of cost.

### Schedule Feasibility

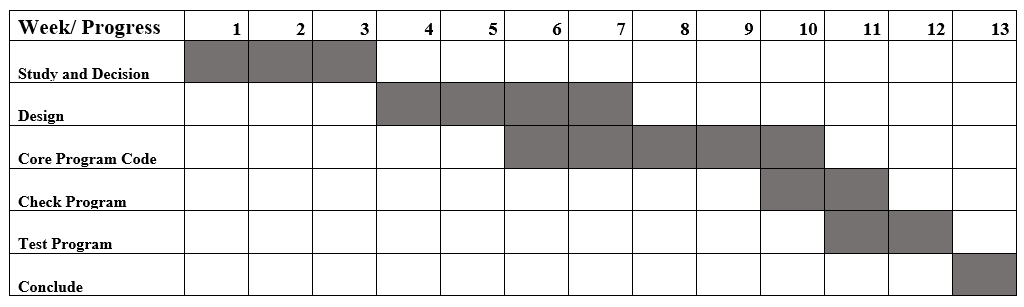


Figure 2: Ghantt Chart

### 3.1.3 Data Modeling (ER Diagram)

### 

Figure 3: Er-diagram

### 3.1.4. Process Modeling (DFD Make 2 level DFD)

### A diagram of a voting system Description automatically generated with medium confidence

### A diagram of a voting process Description automatically generated with low confidence

## 3.2. System Design

### Architectural Design

### 3.2.2. Database Schema Design

### 

### 

### 

### 

### A screenshot of a computer Description automatically generated with medium confidence

### 

### 3.2.3. Interface Design (UI Interface/ Interface Structure Diagram)

The communication that takes place between a user and a computer is the primary topic of user interface design. Starting the system, logging in, and even the final display of desired inputs and outputs are all things it is concerned with.

Here are the UI of our projects till now

### 3.2.4. Physical DFD

# CHAPTER 4: IMPLEMENTATION AND TESTING

## 4.1. Implementation

### 4.1.1. Tools Used

To implement the project, we are going to use the waterfall model (outcome of one phase acts as input for next phase). Our project's description is stable. Since we have well known, clean and fixed requirements therefore its best fits for the software development. This model is simple, easy to comprehend and user friendly. Phases are processed and finished one at a time in this model, and they do not overlap. The waterfall model works well for smaller tasks with well-defined sequences.

The following illustration is a representation of the different phases of the Waterfall Model.

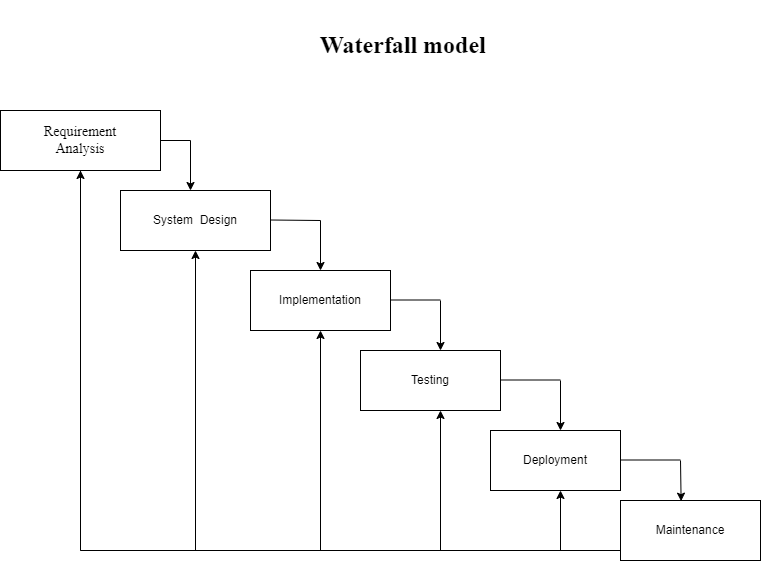


Figure 4 Waterfall Mode

It is easy to understand technology. The scope of our project is secure. As we have clear, certain needs, software development is best suited because of this. Its model is user-friendly, clear, and straightforward. The phases in this model are processed and finished one at a time, with no overlap. For smaller projects where the sequence is clearly defined, the waterfall paradigm works well.

### 4.1.2. Implementation Details of Modules

Users are required to provide necessary information such as their name, email, and password. This allows new users to create their accounts within the voting system, enabling them to access the system's functionalities.

Both users and administrators have the ability to log in to the system using their respective credentials. Once logged in, users can perform various actions within the system, while administrators gain access to additional privileged functionalities. This login mechanism ensures secure access to the system and allows users and admins to interact with the available features.

Administrators, in particular, have certain exclusive capabilities. They can add candidates to the system for different elections, providing details such as the candidate's name, party affiliation, and any other relevant information. Additionally, administrators can add new elections to the system, specifying details such as the election name and date.

Users are given the ability to vote for their preferred candidates once they are logged in. They can make their selections based on the candidates or specific election options provided. This allows users to actively participate in the voting process and have their voices heard.

Administrators have the responsibility to upload the voting results to the system once an election concludes. They can input the aggregated voting data, and the system will process it to determine the winners and other relevant statistical information. This functionality ensures transparency and accountability in the election process.

Moreover, administrators can view various details within the system. They can access user details, including names, email addresses, and other relevant information. This feature enables administrators to manage the user base effectively and maintain the integrity of the system.

Furthermore, administrators have the capability to add notices within the system. These notices can contain important updates, announcements, or any other information that needs to be communicated to users. Users, on the other hand, can view these notices and stay informed about the latest developments and announcements within the voting system.

Overall, this system provides a user-friendly interface for users to register, login, vote, and view notices, while administrators have additional functionalities such as adding candidates and elections, uploading results, viewing details, and adding notices.

## 

## 4.2. Testing

### 4.2.1. Test Cases for Unit Testing

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Test id | Test Description | Test  step | Test data | Excepted  outcome | Actual  outcome | Remarks |
| 1 | Valid format of full name | TC\_OV\_Register\_001 | Full name :Ram khatri | Inserted successful | Inserted successful | pass |
| 2 | Invalid format of mobile number | TC\_OV\_Register\_002 | phone number :98482029011 | Please follow the format | Please follow the format | pass |
| 3 | Invalid format of password | TC\_OV\_Register\_003 | Password: 1234a | Please use the special symbol | Please use the special symbol | pass |

Table 3: Unit testing for login

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Test id | Test Description | Test  step | Test data | Excepted  outcome | Actual  outcome | Remarks |
| 1 | Enter the valid  Phone number and valid password | TC\_OV\_Login\_001 | Phone number:9844703217,  Password:Naresh@12 | Login successful | Login successful | pass |
| 2 | Enter the invalid phone and valid password | TC\_OV\_Login\_002 | phone number: 9848202901,  password:Ram@1234 | Invalid phone number | Invalid phone number | pass |
|  | Enter the valid number and invalid password | TC\_OV\_Login\_003 | Phone Number: 9844703217,  password : abcd1323 | Invalid password | Invalid password | pass |

Table 4:Unit testing for registration

# 

# CHAPTER 5: EXPECTED OUTCOME

This project integrates knowledge, analyzes, assesses, and oversees a PHP, HTML, and CSS project using a DBMS. It is user-friendly, easy to generate information, and saves time for both users and administrators. The result will show in the dashboard of voters and candidates as well as admin too and when admin create election that will show in users dashboard with a dateline given by admin. It reduces vote fraud and ensures fair elections, utilizing a GUI interface. The online voting system aims to benefit both users and candidates by providing a platform for election registration, ensuring efficiency and fairness. It allows administrators to verify candidate details, verify voter results, and reduce false voting, duplicate voting, and vote rejection. The system stores records in a central database, allowing administrators to manage records and ensure fair evaluation of candidates. Users can track application status and receive notifications when new users register.

## 5.1. CONCLUSION

By offering a platform for voter registration, the online voting system seeks to provide benefits for both users and candidates while assuring efficiency and fairness. It enables administrators to decrease fake voting, duplicate voting, and vote rejection while also verifying voter results and candidate information. Administrators may maintain records and guarantee impartial applicant evaluation thanks to the system's storage of data in a central database. people may monitor the progress of their appli1cations and get alerts when new people sign up.

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