

# REQUIREMENT GATHERING

**Date:** 14-01-2025

## 1. Project Overview:

**Project Name:** BharatV –Election Voting System

### **Brief Description:**

The **BharatV Election Voting System** is a web-based platform designed to digitize and streamline the voting process for Panchayat elections. It enables secure and efficient management of voter registration, candidate registration, vote casting, and result generation. By leveraging technology, the system aims to simplify the election process and ensure transparency, fairness, and accessibility.

### **Problem Statement:**

Traditional Panchayat elections often face challenges such as:

- **Manual inefficiencies:** Paper-based systems are time-consuming and prone to errors.
- **Lack of transparency:** Manual counting and registration can lead to mistrust among voters and candidates.
- **Accessibility issues:** Voters in remote areas or with physical disabilities often face difficulties in participating.
- **Security risks:** The manual process is vulnerable to voter fraud, impersonation, and data mishandling.

These challenges hinder the fairness and efficiency of elections, affecting their credibility.

### **Main Objectives:**

#### 1. Digitization of Election Processes:

- Enable online voter and candidate registration.
- Provide real-time access to candidate manifestos for informed decision-making.

#### 2. Ensure Transparency and Fairness:

- Automate vote counting and result generation to reduce human errors and biases.

- Provide audit trails for each election to ensure accountability.
- 3. **Enhance Accessibility:**
  - Create a user-friendly platform accessible across devices.
- 4. **Strengthen Security and Privacy:**
  - Implement secure login for voters and candidates.
  - Use encryption to safeguard data.
- 5. **Simplify Administration:**
  - Allow administrators to manage elections, monitor voter registrations, and oversee the overall process through a centralized dashboard.

## 2. System Scope:

### System Scope

The **BharatV Panchayat Election Voting System** is proposed as a **full-scale implementation** aimed at digitizing the voting process for Panchayat elections.

### Extent of the System:

1. **Voter Registration and Management:**
  - The system allows individuals to register as voters by submitting personal and identification details online.
  - Ensures voter verification using unique ID proofs to prevent duplication or fraud.
2. **Candidate Registration and Manifesto Submission:**
  - Candidates can register their profiles and upload manifestos, making them available for voters to review before elections.
3. **Secure Login for Voters and Candidates:**
  - Implement login modules for both voter and candidate access with secure authentication mechanisms.
4. **Vote Casting and Management:**
  - Enable voters to cast their votes securely within the election timeframe.
  - Ensure one-vote-per-user validation using unique voter IDs.
5. **Result Generation and Display:**
  - Automate vote counting to generate results in real-time after the voting process concludes.
  - Provide results with transparency and auditability for stakeholders.

## 6. Administrator Dashboard:

- Centralized management panel for the admin to monitor voter and candidate registrations, oversee the election process, and ensure smooth operations.

### Purpose:

- **Operational Use:** The system is intended to serve as a functional and operational tool for real-world Panchayat elections.
- **Scalability:** While the current focus is on Panchayat elections, the system is scalable to larger administrative levels if required.
- **Community Impact:** To improve the transparency, efficiency, and accessibility of the democratic process at the grassroots level.

## 3. Target Audience:

### Target Audience

The **BharatV Panchayat Election Voting System** prototype is designed to cater to a diverse set of users and stakeholders involved in the electoral process at the Panchayat level. Below is a detailed description of the target audience:

#### 1. Voters

##### Who They Are:

- Residents of the Panchayat who are eligible to vote.
- Individuals from various age groups, socio-economic backgrounds, and education levels.

##### Needs and Expectations:

- Easy and accessible voter registration.
- A user-friendly platform for secure and seamless vote casting.
- Assurance of data privacy and transparency in the election process.

#### 2. Candidates

##### Who They Are:

- Individuals contesting for positions in the Panchayat elections.
- They may have varying levels of technical expertise.

**Needs and Expectations:**

- Simplified candidate registration process.
- A platform to upload and showcase their manifestos to voters.
- Confidence in a fair and unbiased election system.

**3. Panchayat Administrators****Who They Are:**

- Election officers or officials responsible for managing the electoral process.
- Includes those with basic to moderate technical skills.

**Needs and Expectations:**

- A centralized dashboard to oversee voter and candidate registrations.
- Tools to monitor and manage election activities.
- Automated result generation for quick and transparent outcomes.

**4. Government and Election Officials (Future Scalability)****Who They Are:**

- District or state-level officials overseeing the digitization of elections.
- Policymakers exploring modern solutions to improve grassroots governance.

**Needs and Expectations:**

- Insights into the system's functionality and scalability.
- Demonstrations of transparency, security, and fairness in elections.

**5. Developers and Technical Teams****Who They Are:**

- IT teams involved in building, testing, and maintaining the system.
- Includes developers, testers, and UX designers.

**Needs and Expectations:**

- Well-documented requirements and feedback from users.

- A system that is scalable, secure, and efficient.

## 6. Civic Organizations and NGOs

### Who They Are:

- Organizations working to improve democratic processes and promote voter education in rural areas.

### Needs and Expectations:

- A tool to engage and educate voters about the election process.
- A platform to advocate for fair and inclusive elections.

### Key Considerations for All Audiences:

- **Ease of Use:** The system must be intuitive and accessible, even for users with minimal technical knowledge.
- **Transparency:** Building trust by ensuring all processes are clear and verifiable.
- **Accessibility:** Multilingual support and compatibility across devices to cater to diverse user groups.
- **Security:** Robust measures to protect the data and ensure the integrity of the election.

## 4. Modules:

Here's a detailed list of **key modules** for your project BharatV, based on the abstract you provided, along with their functionalities:

### 1. Registration Module

#### Functionalities:

- Allow users (voters, administrators, candidates) to register on the platform.
- Collect and validate personal details (e.g., name, age, address) and required documents.
- Facilitate upload and verification of identity documents (e.g., ID proof, voter card).
- Implement validation mechanisms to prevent duplicate or fraudulent registrations.
- Generate a unique voter ID for successfully verified voters.

- Send confirmation notifications (via email or SMS) upon successful verification.

## **2. Login Module**

### **Functionalities:**

- Authenticate users based on roles: **Voter**, **Administrator**, or **Candidate**.
- Redirect users to their respective dashboards based on their roles.
- Use secure login mechanisms with encrypted credentials (e.g., hashed passwords).
- Validate and sanitize user inputs to prevent SQL injection and data breaches.
- Manage secure user sessions with automatic logout after inactivity.
- Provide password recovery or reset functionality.

## **3. Voting Module**

### **Functionalities:**

- Enable authenticated and registered voters to cast their vote anonymously.
- Restrict each voter to casting only one vote using robust authentication mechanisms.
- Display a user-friendly voting interface, listing candidates for the election.
- Encrypt vote data to ensure confidentiality and security.
- Provide a confirmation message after a successful vote.
- Maintain a secure voting log to track vote counts without compromising anonymity.

## **4. Administrator Module**

### **Functionalities:**

- Approve or reject voter registrations after verifying uploaded documents.
- Manage candidate registrations and update candidate details if necessary.
- Schedule elections and define timelines for registration, campaigning, and voting.
- Generate and publish final election results with full transparency.

## 5. Candidate Management Module

### Functionalities:

- Allow administrators to register and manage candidate profiles.
- Update candidate information such as name, party affiliation, and manifesto details.
- Provide candidates with access to their profiles to review their registration status.
- Enable candidates to view election outcomes after voting concludes.

## 6. Security Module

### Functionalities:

- Implement encryption of sensitive data like voter details and voting records.
- Secure session management to prevent unauthorized access.
- Ensure data integrity using checksum validation and tamper-proof logging.

## 7. Dashboard Module

### Functionalities:

- Provide personalized dashboards for each user type:
  - **Voters:** Display voter ID, upcoming elections, and candidate information.
  - **Administrators:** Show registration status, election metrics, and system logs.
  - **Candidates:** Provide access to profile details and election outcomes.

## 5. User Roles:

### 1. Administrator

#### Role Description:

The administrator is responsible for managing the overall system, ensuring its proper functioning, and maintaining the integrity of the election process.

#### Permissions and Access Levels:

- Manage system settings and configurations.
- Add, update, or delete voter and candidate records.
- Monitor voter registration and candidate application processes.
- Approve or reject candidate applications.
- Open and close the election window.
- View and manage election results.
- Resolve disputes or technical issues during the election process.

## **2. Voter**

### **Role Description:**

Registered individuals who are eligible to vote in the election. They interact with the system primarily for casting their votes and accessing candidate information.

### **Permissions and Access Levels:**

- View and update personal profile details (e.g., name, address, voter ID).
- View election updates and important announcements.
- Access candidate details, including their names, parties (if applicable), and manifestos.
- Cast a vote securely during the voting period.
- View results after the election concludes (if allowed).

## **3. Candidate**

### **Role Description:**

Individuals who are contesting for positions in the election. They interact with the system for application submission and to track election results.

### **Permissions and Access Levels:**

- Register as a candidate with the required details (name, position, manifesto, etc.).
- View their application status (approved/rejected).
- Update profile information, such as contact details or manifesto (if allowed before election approval).
- View election results once the voting ends.



## 6. System Ownership:

The ownership of the BharatV Election System depends on the context in which it is being developed. Here are possible scenarios for system ownership:

### 1. Academic Institution Ownership:

- If this project is part of an academic endeavor, such as a research or capstone project, the system ownership resides with the academic institution under whose guidance it was developed.
- Students or faculty members involved in the project may retain partial credit or intellectual property rights based on institutional policies.

### 2. Government/Local Organization Ownership:

- If this system is developed for an official Panchayat or local body, the ownership lies with the respective governmental or administrative organization.
- The government entity will hold all rights to the system, including deployment, modifications, and usage.

### 3. Individual Ownership:

- If the system is a personal or entrepreneurial project, the individual developer or project owner retains full ownership.
- The owner can choose to license the system to other organizations or government bodies for implementation.

### 4. Collaborative Ownership:

- In cases where multiple entities, such as an academic institution and a Panchayat organization, collaborate on the project, shared ownership may apply. Specific rights and responsibilities would be detailed in an agreement between the parties.

## 7. Industry/Domain:

The BharatV Election System is primarily related to the **Public Administration and Governance** domain.

### Key Aspects of the Domain:

#### 1. Public Administration:

- The system supports the democratic process by facilitating transparent and efficient elections at the Panchayat level.

- It ensures that local governance operates in a fair and accessible manner, empowering citizens and candidates alike.

**2. E-Governance:**

- This project aligns with e-Governance initiatives, leveraging technology to digitize election-related processes, such as voter registration, candidate registration, and vote casting.
- It promotes accountability, transparency, and efficiency in public administration.

**3. Civic Engagement:**

- The system encourages community participation by providing an easy-to-use platform for voters to engage in the democratic process.
- It also allows candidates to connect with their electorate by sharing manifestos and updates.

**8. Data Collection Contacts:**

**Name:** Scaria Joseph

**Role:** Thidanadu Grama Panchayat President

**Contact Number:** 9747252582

**9. Questionnaire for Data Collection:**

**Section A: Personal and Panchayat Information**

**1. What is your name and the Panchayat you represent?**

Name: Scaria Joseph

Panchayat: Thidanadu Grama Panchayat

**2. What is your role in the panchayat?**

Panchayat President

**3. How long have you been serving as the Panchayat President?**

5 years

**4. What challenges do you face in organizing Panchayat elections in your area?**

- Ensuring the inclusion of all eligible voters in the voter list.

- Handling logistical challenges like setting up polling stations in remote areas.
- Addressing voter concerns regarding fairness and transparency.

## **Section B: Insights on the Election Process**

**5. What are the major issues faced by voters and candidates during the election process?**

Answer: Nothing

**6. How do you currently ensure transparency and fairness in the election process?**

Using physical verification of voter identity during elections and deploying independent observers at polling stations and educating voters about election rules and processes.

**7. Do you think a digital voting system could improve the efficiency of Panchayat elections?**

Yes

**8. What challenges do you foresee in implementing a digital voting system in a Panchayat?**

- Limited digital literacy among residents, especially elderly voters.
- Ensuring the security and privacy of digital votes.
- Resistance to change from voters who trust traditional voting methods.

## **Section C: Security and Trust**

**9. What measures are currently in place to ensure the security and privacy of voters during elections?**

- Secured ballot boxes with tamper-proof seals.
- Police or security personnel deployed at polling stations.

## **Section D: General Feedback**

**10.Do you have any additional suggestions or recommendations for improving the election process in your Panchayat?**

I believe the election process can be improved by simplifying voter registration, such as providing mobile registration services or door-to-door assistance. Additionally, using community announcements and posters to inform voters about election details would enhance communication. Offering basic training for digital voting and conducting mock elections could help residents feel more confident about the new system.