

# Digital Electoral System for University Governance

## Abstract

### Development of a University Voting Platform

This project aims to create an efficient and secure online voting system tailored to university settings. It is a web-based application accessible to the university community, facilitating transparent and accessible voting processes. The system incorporates features such as user authentication, candidate registration, real-time voting, result generation, and security measures. It ensures a user-friendly experience while maintaining the integrity and confidentiality of the voting process.

### Functional components of the project

The Online Voting System encompasses various functionalities to streamline the voting process within the university. The key components include:

(a) User Authentication: Implementing secure login mechanisms for users, including students, faculty, and administrative staff. The system should allow users to reset passwords and ensure a smooth login experience.

(b) Candidate Registration: Allowing candidates to register for elections, providing necessary details such as name, position, and a brief description. The system should facilitate the approval or rejection of candidate registrations by authorized personnel.

(c) Voting Process: Enabling users to cast their votes online during specified election periods. The system should ensure that each user can vote only once and maintain the confidentiality of their choices.

(d) Result Generation: Generating real-time results after the completion of the voting process. Results should be accessible to authorized personnel and display information such as candidate names, positions, and total votes received.

(e) Election Administration: Granting privileges to different user levels, including Election Administrators, who have the authority to oversee and manage the election process. This includes monitoring candidate registrations, resolving issues, and ensuring the overall integrity of the system.

(f) User Access Control: Administering and revoking access rights based on user roles. User roles may include regular voters, candidates, election administrators, and other relevant roles.

(g) Reporting: Providing a reporting feature that allows administrators to generate reports on the overall election process, including voter turnout, candidate performance, and any irregularities detected.

(h) Notification System: Implementing a notification system to send alerts and updates to users, such as confirmation of successful voting or reminders for upcoming elections.

Accordingly, the system should define the following levels of user privileges:

- Regular users have the privilege to log in, cast votes, and view election results.
- Candidates have additional privileges to register for elections and monitor their own candidacy status.
- Election administrators have extended privileges for managing the entire election process, including candidate approvals, result generation, and issue resolution.

1. A user should be able to:

- Log in securely to the system.
- Cast votes during the specified election period.
- View real-time election results.
- Receive notifications and updates related to the voting process.

2. As soon as a vote is cast successfully, a confirmation notification should be sent to the user.

3. Election administrators should be able to:

- Manage candidate registrations, including approval and rejection.
- Monitor the progress of the voting process in real-time.
- Generate comprehensive reports on the election results and process.

4. The system administrator should have the following additional privileges:

- Add new elections.
- Add or remove election administrators.
- Manage user roles and access rights.
- Resolve any technical issues that may arise during the election process.