FULL STACK DEVELOPMENT (SEC-109)

Bachelor of Technology In

Computer Science and Engineering

Title of the Project :

COLLEGE VOTING SYSTEM

Submitted by

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Andhra Pradesh – 522 240

Academic Year 2024-2025 (even sem)

Full Stack Development with MERN

1. Introduction

- **Project Title:** University Voting System
- **Team Members:**
  - Member 1: Sreeram Reddy Nandem
  - Member 2: Gowthami Reddy Reddem
  - Member 3: Regalagadda Mohith Varun
  - Member 4: Settipalli Manoj Kumar

2. Project Overview

- **Purpose:**
  To create a digital platform where students can vote for candidates in various clubs within the college. The aim is to make the voting process more efficient, transparent, and accessible.
- **Features:**
  - User Registration and Login
  - Voting Interface by Club and Sub-Club
  - Election Result Display
  - Admin Dashboard to manage data
  - Role-based Access Control (Users, Admin)

3. Architecture(MVC)

- **Frontend:**
  Developed using React.js with React Router for navigation, Axios for API requests, and Context API/Redux for state management. UI built with responsive design principles using CSS.
- **Backend:**
  Built on Node.js with Express.js. Handles all RESTful API endpoints, business logic, and authentication processes.

- **Database:**
  Uses MongoDB with Mongoose ODM. Collections include:

  Candidates

  Voters

  Elections

4. Setup Instructions

Front end-

Step-1: npx create-react-app
Step-2: add extension ES7+ react/redux/react-native
Step-3: npm i react-router-dom
step-4:npm install @reduxjs/toolkit react-redux --save --force

Backend-

step-1:In server npm init -y

Step-2:npm i express mongoose cors dotenv
step-3:npm i nodemon -D
step-4:to run
npm run dev

Step-5:npm I bcryptjs
step-6:npm i jsonwebtoken
step-7:npm i express-fileupload cloudinary uuid

5. Folder Structure

Client (Frontend - React):

```
client/
├── public/
├── src/
    ├── components/
    ├── pages/
    ├── services/
    ├── context/
    ├── App.js
    ├── index.js
```

Server (Node.js Backend):

```
server/
├── controllers/
├── models/
├── routes/
├── middleware/
├── config/
├── server.js
├── .env
```

6. Running the Application

How to run

step-1:
3 terminal-1)cd .\client\ 2)cd .\server\ 3)cd .\client\
step-2:terminal-3
npm I axios

7. API Documentation

Endpoint	Method	Description	Request Parameters	Example Response
`/api/users/register`	POST	Register new user	{name, email, password}	{ success: true, user: {} }
`/api/users/login`	POST	Login user	{email, password}	{ success: true, token: "" }
(Add more endpoints.)				

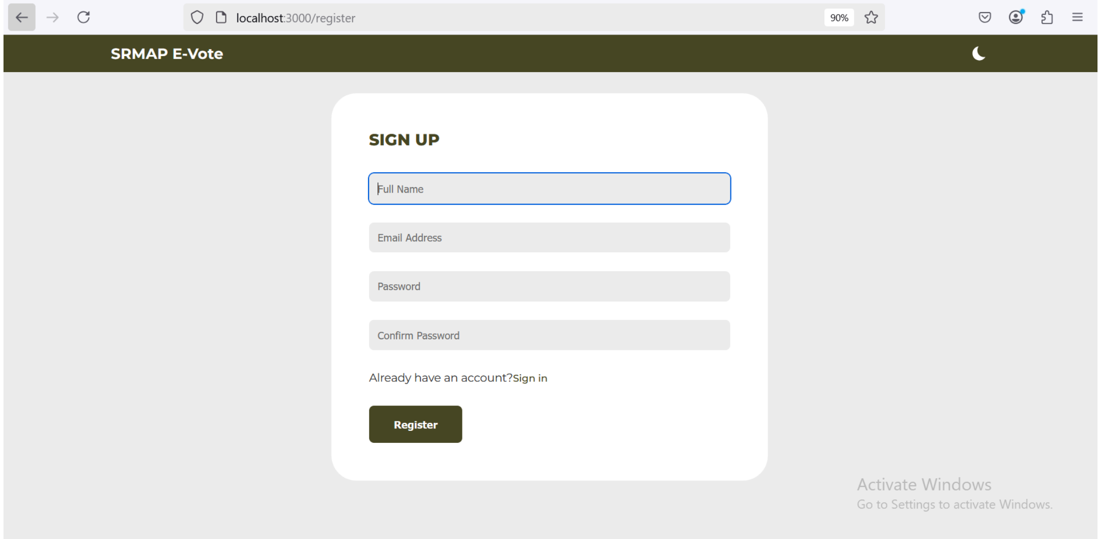
8. Authentication

- **Method Used:** JWT (JSON Web Tokens) / Sessions
- **Flow:**

  - On login, a token is generated and stored in localStorage/cookies.
  - Token is attached in headers for protected routes.
  - Middleware verifies the token on backend APIs.

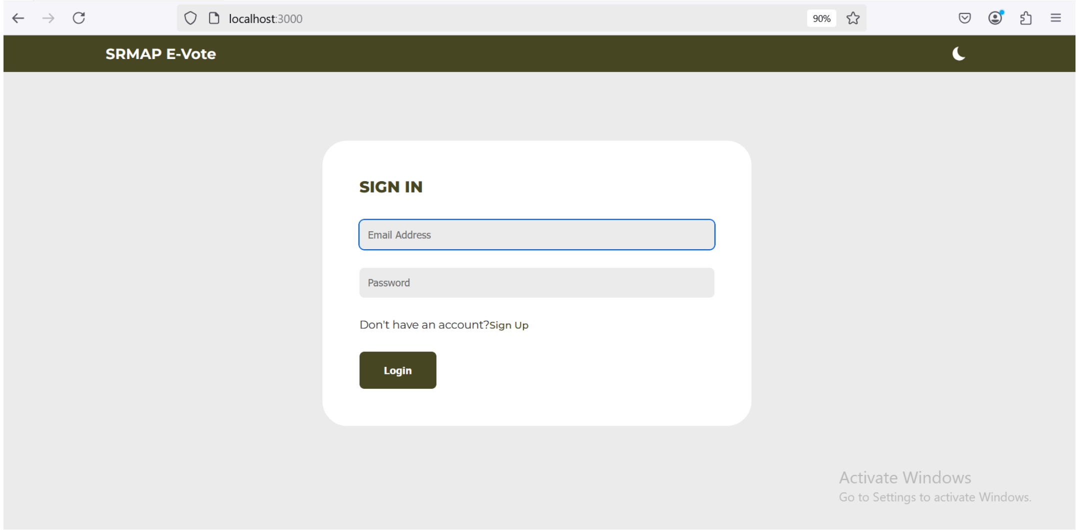
9. User Interface

- **Screenshots:**



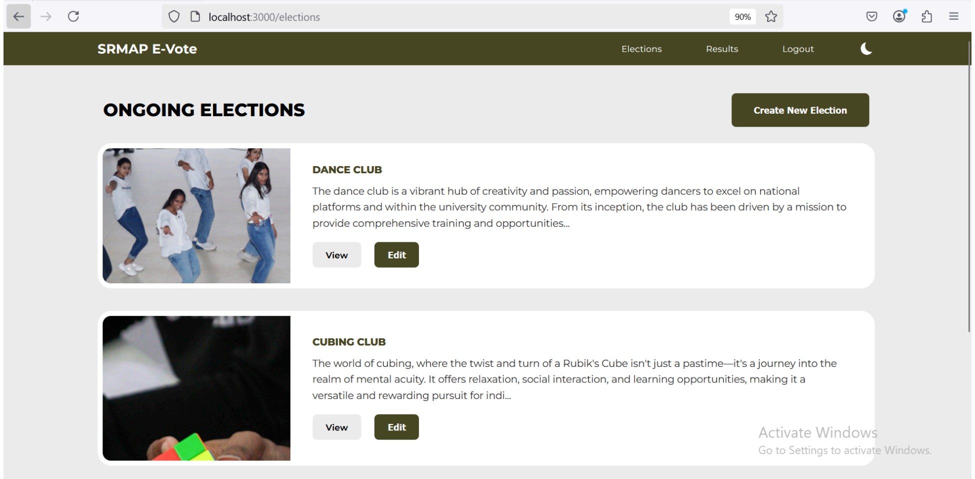
SIGN UP

Already have an account?Sign in



SIGN IN

Don't have an account?Sign Up



localhost:3000/elections

SRMAP E-Vote

Elections Results Logout

ONGOING ELECTIONS

Create New Election

DANCE CLUB

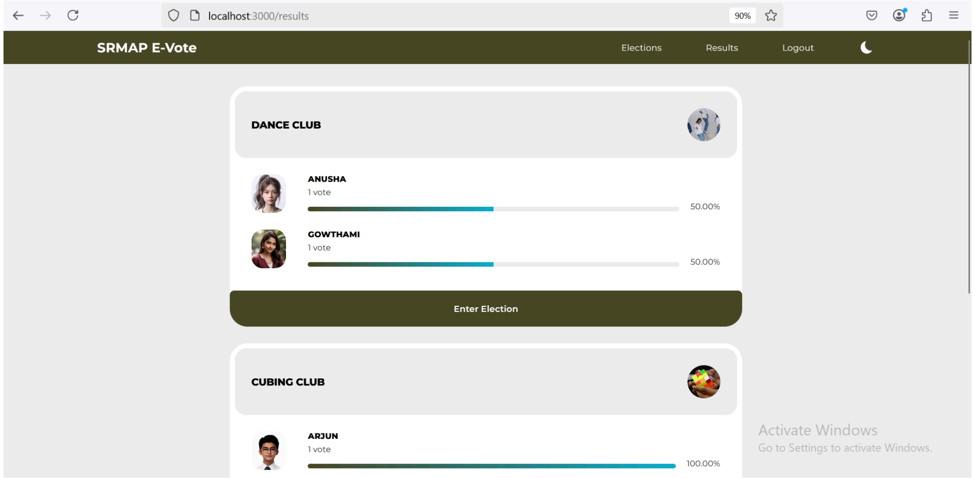
The dance club is a vibrant hub of creativity and passion, empowering dancers to excel on national platforms and within the university community. From its inception, the club has been driven by a mission to provide comprehensive training and opportunities...

View Edit

CUBING CLUB

The world of cubing, where the twist and turn of a Rubik's Cube isn't just a pastime—it's a journey into the realm of mental acuity. It offers relaxation, social interaction, and learning opportunities, making it a versatile and rewarding pursuit for indi...

View Edit



localhost:3000/results

SRMAP E-Vote

Elections Results Logout

DANCE CLUB

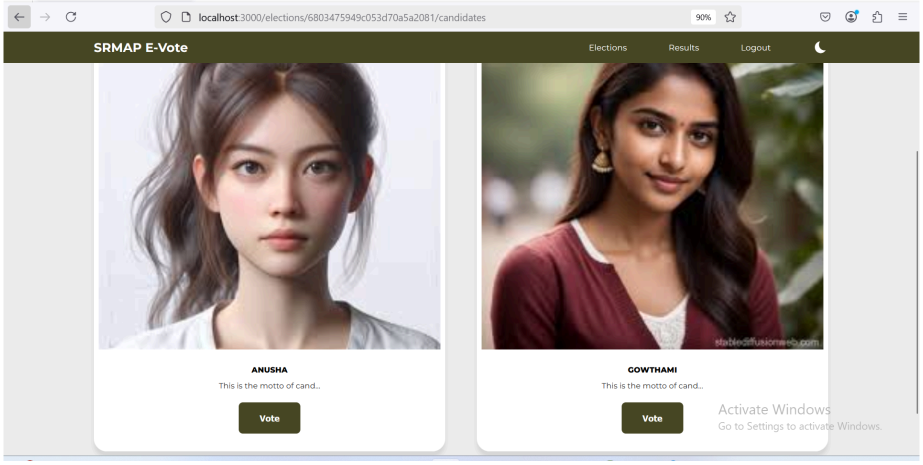
ANUSHA
1 vote
50.00%

GOWTHAMI
1 vote
50.00%

Enter Election

CUBING CLUB

ARJUN
1 vote
100.00%



localhost:3000/elections/6803475949c053d70a5a2081/candidates

SRMAP E-Vote

Elections Results Logout

ANUSHA
This is the motto of cand...
Vote

GOWTHAMI
This is the motto of cand...
Vote

10. Testing

- **Testing Strategy:**
  - Unit Testing (e.g., Jest for React components)
  - API Testing (e.g., Postman for backend APIs)
- **Tools Used:** Postman

11. Demo

- **Frontend** Link:https://drive.google.com/file/d/1dRpiCVOn2lU4aHy4fswF7iEiXYnMvzRw/view?usp=drive_link
- **Backend** Link:https://drive.google.com/file/d/1fA2te5ePE5QR0X6dIGCahInoM-HjGTn7/view?usp=drive_link
- **Demo** Link:https://drive.google.com/file/d/1IoUYstNpvkNxZYAZ12aPxmYN12iNGTMb/view?usp=drive_link

12. Known Issues

- No client-side form validation in some pages
- No support for multi-phase elections yet
- Admin cannot currently bulk upload candidate data

13. Future Enhancements

- OTP/email verification during registration
- Analytics dashboard for election insights
- Real-time updates using Socket.io
- Exporting results as PDF
- Mobile responsive version or a mobile app