

DA-IICT

IT314 SOFTWARE ENGINEERING

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# Project Detail Document Election Management System

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Group No: 06  
Version: 1.0

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## Group Members:

Dhiraj Narsinghani	201901022
Bhavya Kedar	201901028
Ayush Patel	201901413
Ravirajsinh Zala	201901414
Kuldeepsinh Rana	201901433
Brijkumar Patel	201901437

Reporting TA: Nimmi Patel(202011016)

Start Date: 28-02-2022; End Date: 13-05-2022

## Objectives of the Project:

- The objective of this project is to develop a webapp that would allow the election commission to conduct elections digitally, replacing the paper ballot voting which would provide more security and transparency in the election processes.
- The app should be able to fully automate the traditional election process digitally where all the processes of the elections from counting the votes to preparing the results along with the statistics of the elections would be done automatically by the app but under the supervision of the admin of that election.
- The voters should be able to access the webapp using web-browsers such as Mozilla and Google Chrome and use it for general purposes like viewing the current candidates contesting in the elections, their profiles and election results of the past years.
- Due to the system being digital, the users would be able to cast vote from their current location and thus solving the issue of users of travelling to election booths.
- The webapp should make the work of conducting the elections easier and simplified.
- The election servers should work efficiently and securely which would make it impossible for anyone to break into the system.
- The app should provide reliable authorization functionalities so that possibilities of corrupt results and premature knowing of results can be prevented.

- The app should be able to assist all the specially-abled voters as well and change the interface accordingly.

## **Functionalities of the System:**

- **Login/Logout:** All the users of the app would be able to login on the app using user ids and passwords. The users of the app would be divided into categories like: System admin, returning officer, candidates, booth level officer (BLO) and voters (normal users).
- **Voter Registration:** Only the registered users would be able to use the app. Voters would be first required to register on the app and then only would they be able to vote.
- **Updating Registered Voters:** The system admin would be able to delete/update some voters account if required. Also, the voters would be able to update or delete their own profiles if required.
- **Viewing Candidate's Information:** The voters would be able to view the election candidate's profiles contesting from their constituencies.
- **Candidate's Profile Update:** The candidates would be allowed to update their CVs to add value to their campaigns time and again.
- **Asking Candidates:** The voters would be able to ask questions to the candidates of their choice regarding their campaigns and promises.
- **Answering Voters:** The candidates would be able to answer the questions regarding their election campaigns and promises.
- **Validating Voters:** The BLOs would be able to verify the applications of the new voters and assign them with their unique voter IDs.
- **Validating Candidates:** The returning officers would be able to see all the candidates' applications and then accept or reject the applications.
- **Declaration of Results:** The app would count the votes and declare the results in a proper along with all the statistics. All the users of the app would be able view current and past years' results.

- Conducting the Election: The election commissioner/system admin would be able to start a particular election and then supervised the whole process.

## Project Deliverables:

- Milestones:
  - 25-03-2022 to 07-04-2022:
    1. Basic project setup i.e. React app, Node Server and Firebase initialization.
    2. Backend APIs for all the users.
    3. API testing
  - 08-04-2022 to 22-04-2022:
    1. Complete Frontend merged with Backend and Firebase.
  - 22-04-2022 to 13-05-2022:
    1. Finishing the remaining project
    2. Testing
    3. Improving the final project.
- List of Final Deliverables:
  - Complete Documentation
  - Report for audit
  - User guide

## Estimated Total Time:

Activity	Hours
Design and Documentation Process	30
Project Setup	3
Backend APIs	15
Frontend App	18
Testing and Improvement	6
Approximate Total Hours	70 - 75 hours approx.

## Hardware Requirements:

- A working laptop/mobile with a stable network connection.

## Software Requirements:

- Any good supported browser like Google Chrome, Firefox, Safari, Edge etc.

- Javascript should be enabled in the browsers.

### **Technology/Architecture:**

- React JS
- Node JS
- Firebase (authentication, database, storage)
- Postman for API testing

### **Standards to be followed:**

- All the variables and functions to be named using camel casing.
- React Components to be named using Pascal Casing.
- The project should be kept modular and thus dividing the complete projects in routes, components, controllers, etc.
- Complete project code should be well commented.