

# Technical Improvisation in Election Process

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**Abstract:** *Technical improvisation in election process also known as e-voting is often viewed as a tool for making the electoral process more efficient and for increasing trust in its management system. Proper implementation of e-voting solution can increase the security of the ballot, speed up the processing of result and make voting easier. Sometimes, the challenges are considerable. If not carefully planned and designed, e-voting can undermine the confidence in the whole electoral process. This paper outlines contextual factors that can influence the success of e-voting solution and highlights the importance of taking these fully into account before choosing to introduce new voting technologies. The development in mobile devices, wireless, android technologies and data communication results in new Application that will make voting process easier and efficient. E-voting system can cast and count votes with higher convenience and efficiency which even reduces mistake rate of ballot examination. In this paper, Network, Short Message System and e-mail provides 3 factor authentications to voters.*

**Keywords:** E-voting, Quick Response(QR) Code, Session Password, Elections.

## I. INTRODUCTION

Voter influence and direct human control are significantly reduced during elections when there is technical improvisation. This offers a chance to address a number of long-standing political issues while simultaneously raising a host of brand-new ones. A voting service made possible by the electronic voting system enables voters can cast electronic ballots from any polling place in the nation. This method adds greater ease and security to the expanding voting process while incorporating the legal, regulatory, social, and behavioral features of the present voting system. Election technology improvements are usually difficult tasks that need great thought, consideration, and preparation. Introducing electronic voting is arguably the most challenging update since it involves a technology that is central to the whole election process: the casting and tallying of ballots[1-20].



Figure 1- Quick Response(QR) codes

Figure 1 shows the QR code. QR code is the trademark for a form of matrix barcode was first intended for Japan's automobile sector. A barcode is a machine-readable optical label that includes data about the item to which it is attached. A QR code stores data effectively using four specified encoding modes. Extensions may also be utilized. The QR Code method has grown in popularity outside of the automobile sector due to its faster reading and larger storage capacity when compared to regular UPC barcode. Product monitoring, item identification, time tracking, document management, general marketing, and other applications are among the possibilities. We will produce these QR code shares for security[21-50].

## II. LITERATUREREVIEW

There are many researches works on online voting systems, here we have critically analyzed and summarized twenty research works and projects which are more relevant, recent and pertinent. It is observed that most the recent works addresses the issue of online voting and use of various information technologies. In the year 2020, Vivek S K, developed a secure, transparent and decentralized e-voting system is proposed using the Hyperledger Sawtooth blockchain framework. Restricted access of the system through election polling stations allows voters to cast their votes, which are recorded in the immutable blockchain state. Fairness and reliability of the election procedure due to nil possibility of vote manipulation. The issue of fairness and reliability of the election procedure due to nil possibility of vote manipulation was addressed. The technology/platform used were Angular 8, Node.js, Amazon RDS, and Sawtooth blockchain, Python with the APIs, Docker technology, Amazon Web Services.

## III. FUNCTIONALREQUIREMENTS

- Admin can See the Users.
- Administrator has privilege to edit user's profile.
- Administrator, can generate reports
- Users must have valid User ID and password to login thus creating their individual profiles.
- Admin enters his or her user id and password.
- Customer enters his or her user id and password.
- Maintain data.
- Registration required authenticating the user.

## IV. NON-FUNCTIONAL REQUIREMENTS

- Secure access of confidential data (user's details).
- 24 X 7 availability
- Better component design to get better performance at peak time
- Flexible service based architecture will be highly desirable for future extension

### Main Modules Includes:

- ADMIN
- User-Portal

## V. ACTUAL RESOURCE USED

### Software Requirement:

- HTML5
- CSS3
- PDO
- AJAX
- Jscript
- JQuery
- Google API
- MySQL
- XAMPP (Apache server)
- Web services

### Hardware Requirement:

- I3 Computer
- RAM 1GB

- Number Plate
- Mobile
- Scanner to scan QR

Admin: The admin can monitor and maintain all portal components. In addition, the module controls patient and client records.

For example, a doctor (admin) has the ability to establish or provide rights to other users, and he may create records by filling out all patient information. The logged-in user's Doctor (admin) module can handle all of the functionalities specified with the module[51-75].

User management: Admin users can complete the selection procedure.

Managing roles :

- The admin user can manage all module information.
- Admin may provide access rights for various menus/modules to different user categories.

Software requirement : Software requirements are concerned with specifying software resource needs and prerequisites that must be installed on a computer to offer optimal functionality.

Tools used in Project are:

Programming Language- HP Data Object

Server- XAMPP

Database- MySQL

## VI. SCOPE AND FUTURE WORK

The E-Voting is a process can be done through the E-voting application. The voter should register first and if a voter is already registered means then perform login process for that voter QR-Code can be generated if the voter is a new to the process he/she had should register and the database will generate the QR-Code for the voter, before QR code generation the admin validate the user. Then the voter should download the scanning application to his/her mobile to scan the generated QR-Code for the voter. The authentication is done through the scanning of QR code. In upcoming years e-voting systems are expected to undergo significant advancements, including enhanced security measures, increased accessibility, mobile voting, blockchain integration, remote voting, auditable and transparent systems, improved voter confidence, regulatory frameworks, international standards, and public awareness and education. Advanced encryption techniques, biometric authentication, blockchain technology, and continuous monitoring are expected to prevent hacking and ensure the integrity of the voting process. Mobile voting, facilitated by smartphones and mobile technology, could make voting more convenient for voters. Blockchain technology could provide a decentralized, tamper-proof method for recording and verifying votes, addressing concerns about security and transparency. Remote voting, allowing voters to cast their ballots from their devices, will also become more widespread. Regulatory frameworks and international standards will be developed to ensure the integrity of the electoral process[77-92]

### Proposed System Scope & Objectives:

Proposed system is highly automated and greatly technical. In this system, not even you can vote via sitting at your own place but also you can learn about laws and regulations related to voting. ' Also not only this but you can access the profile of the nominees through which you can learn about their history, their education, and their personal details and so on. ' Using this online voting android based project, end users do not faces any difficulties as because they don't have to make registration before submitting their answers.

**VII. METHODOLOGY TO BE USED**

**DESIGN AND IMPLEMENTATION**

Figure 2 shows the design of E-voting using QR code. There are two methods to participate in the E-Voting process: over the internet or through SMS. First, the voter must register. If the voter is already registered, a QR-Code can be produced for them. If the voter is not familiar with the procedure, they must register first, and the database will generate a QR-Code for them. The voter must then download the scanning app on their smartphone in order to scan the QR-Code that has been created for them. The database requests the password for authentication following the scanning procedure. The voter must next complete the necessary steps to cast their ballot.

Voters choose candidates based on post-stadium after undergoing verification. Choose the district after the chosen candidate

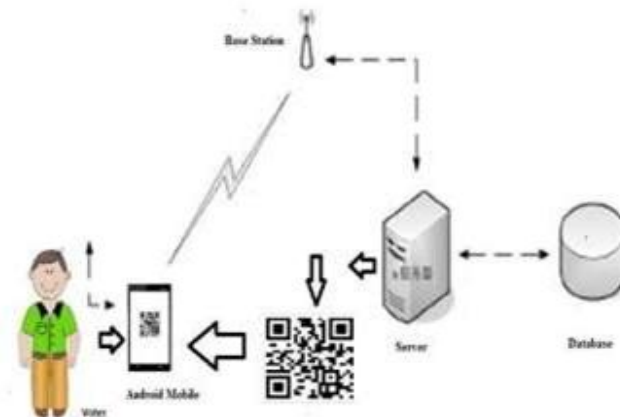


Figure 2: Architecture Diagram

Session Password: You can create and use a session password only once. The session password's area of expertise is this. Voters who use this session password will only be able to log in once, or until an error occurs. A QR code containing this session password will be created, which voters may scan to cast their ballots.

Making an Image with a QR Code -We are building a QR code in this module to encode voter information. The voter information include address, DOB, voter name, and voter ID number. Every design has unique symbols in black and white that are encoded and represent each module in a QR code. More data may be stored in a QR code than in a traditional bar code. The distinct Finder Pattern (Position Detection Patterns) included in the QR Code format may be found at

The Code Scanner Module, QR :

This module is used to read the value of a QR code within a mobile device by scanning it. A matrix bar code called a QRCode is made to be readable by smartphones. The code is made up of square-shaped, black modules set on a white backdrop. Text, a URL, or other data might be included in the encoded information. Should the voter choose the candidates, the information will be sent straight to the server.

Module for Web Service Client:

This module handles the process of keeping track of the client's chosen candidate information that is sent via the web service. Every single one of these details will be kept in the database. In order to retrieve the chosen voter list from the database online, we are keeping up a centralized server.

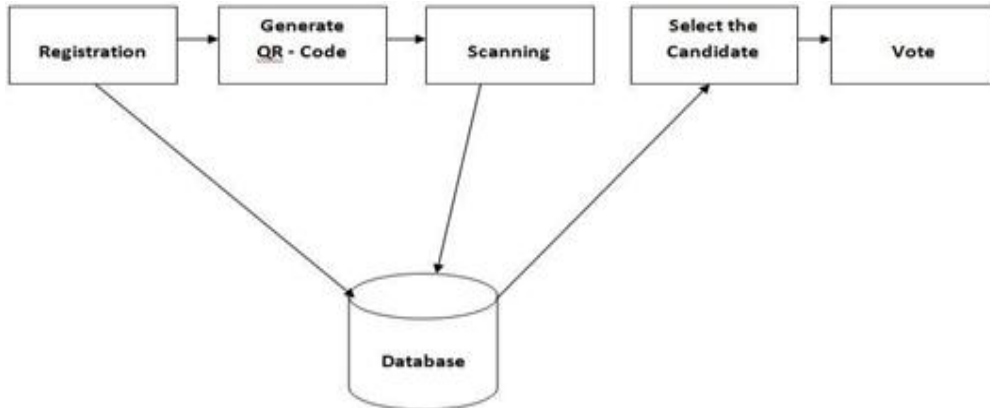


Figure – 3: Data Flow Diagram for E-Voting System

### VIII. RESULTS AND DISCUSSION

The new QR code and scanner application idea is embedded in the system. The voter must first download the electronic voting application, then complete the login and registration procedures. The voter's information are used by the admin to choose whether to approve or reject them when the process is finished. After the voter generates the QR code, they can use a mobile scanning program to scan it. The voter will be verified throughout the scanning procedure. After then, the voter receives a result from the server after voting.

#### HOME PAGE :

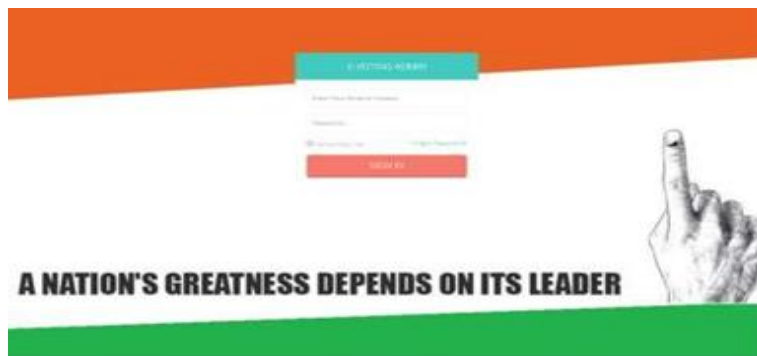


Figure 4- Home page of E-Voting system

Figure 4 shows the home page of E-voting system.

**VOTES COUNTING:**

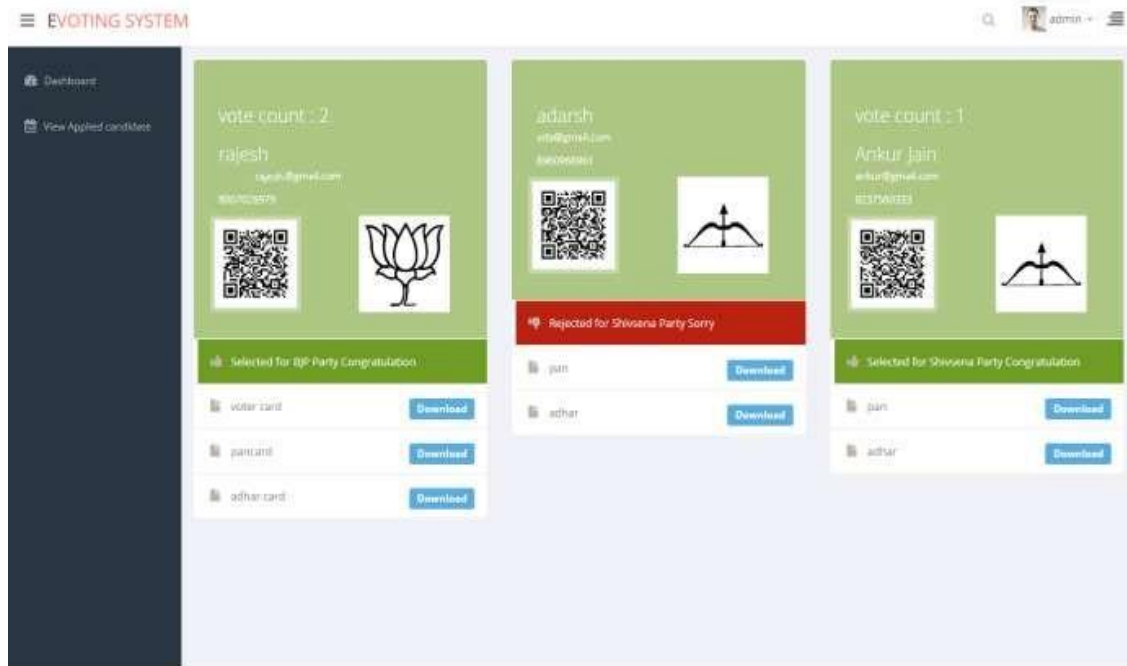


Figure 5 shows the automatic vote counting system.

**IX. CONCLUSION**

Use of context-specific QR codes can yield significant benefits in scenarios where the context is subject to sudden changes. Since augmented reality allows users to engage with many technology, it presents an intriguing avenue for applying this idea. Based on the situation, the traits of contextual. By utilizing the capabilities offered by contextual QR codes, users may utilize QR codes to step closer to augmented reality and to instantly and transparently access material from a variety of experiences. The system described in this article makes use of contextual QR Codes to trigger various actions to handle various devices and user scenarios. Our system will show that various augmented reality technologies may be used in a variety of situations.

**X. FUTURE WORK**

One Time Passwords (OTPs) and Visual Cryptography may be added to the QR code-based online voting system.

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