



# E-Voting System

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A new voting revolution for Sri Lanka



# Technology, Software

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- Artificial Intelligence
- Facial Recognition
- PDF417 Decoder
- OCR Reader
- Fingerprint Reader



# Artificial Intelligence - AI

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- What is AI ?

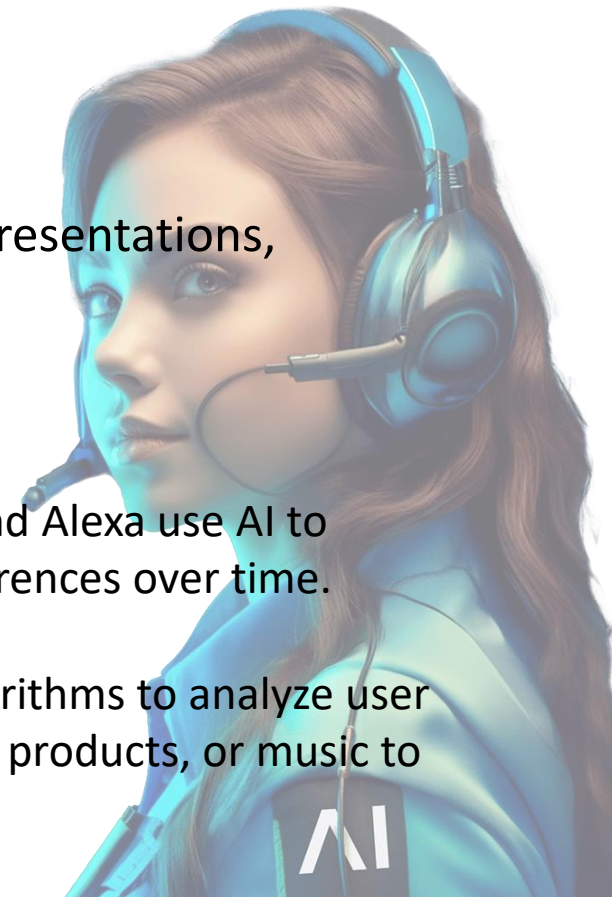
development of computer systems that can perform tasks that typically require human intelligence.

- How do we use AI in this project ?

This project uses AI to differentiate real human faces from paper-based representations, employing advanced algorithms for accurate detection.

- Examples of AI use

1. Virtual Personal Assistants (VPAs): Virtual assistants like Siri, Google Assistant, and Alexa use AI to understand and respond to user queries, perform tasks, and adapt to user preferences over time.
2. Recommendation Systems: Services like Netflix, Amazon, and Spotify use AI algorithms to analyze user behavior and preferences, providing personalized recommendations for movies, products, or music to enhance user experience and engagement.



# Facial Recognition

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- What is Facial Recognition ?

Facial recognition is a technology that identifies individuals by analyzing unique facial features, commonly used in security, access control, and authentication.

- How do we use AI in this project ?

This project utilizes facial recognition to match the voter's identity card photo with their real-time facial features for authentication.

- Examples of Facial Recognition use

1. Smartphone Unlocking: Facial recognition is commonly used in smartphones for quick and secure user authentication, allowing users to unlock their devices by scanning their faces.
2. Building Access: Facial recognition is employed for secure access control in workplaces, replacing traditional methods with a quick and reliable face-based authentication system. enhance user experience and engagement.



# PDF417 Decoder

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- What is PDF417 ?

PDF417 is a two-dimensional barcode commonly used on IDs and documents for encoding various data types, including text and numbers.

- How do we use PDF417 in this project ?

Sri Lankan Identify Card uses PDF417 to store data of the person, so we need to decode it to get the details of the person.



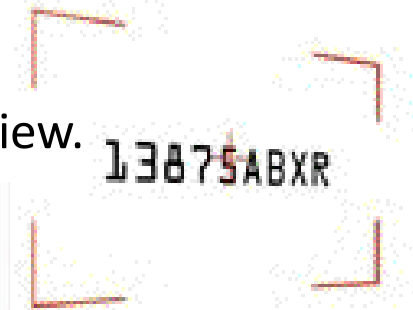
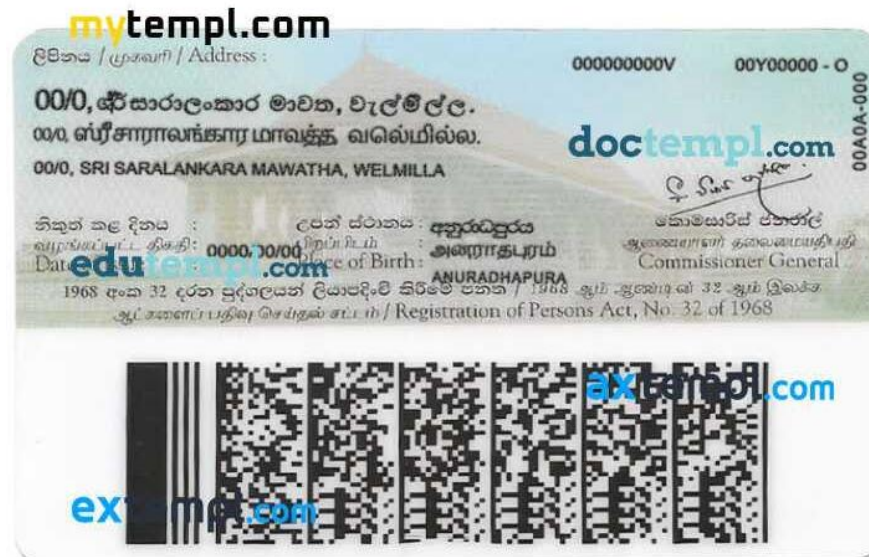
# OCR Reader

- What is OCR ?

OCR is Optical Character Recognition, a technology converting scanned documents or images into editable text.

- How do we use OCR in this project ?

We use this to get the PDF417 Code to system, in a clear view.



# Fingerprint Reader

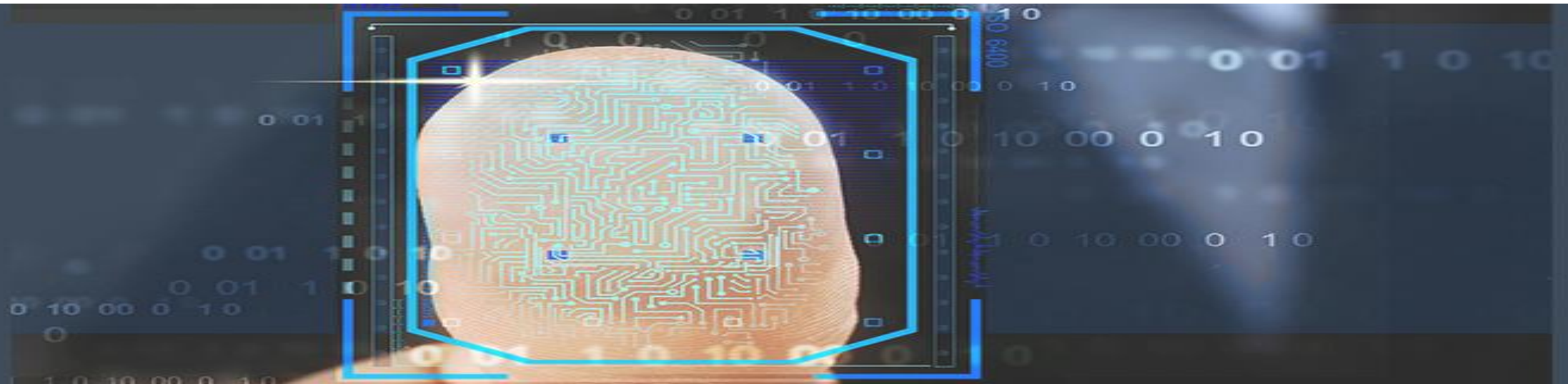
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- What is Fingerprint Reader ?

Fingerprint reader is a device that scans and identifies fingerprints for security or authentication purposes.

- How do we use fingerprint reader in this project ?

On the day of the election, we employ a fingerprint reader to scan the fingerprints of the officers, serving as a secure and formal means of authentication.





# PROJECT

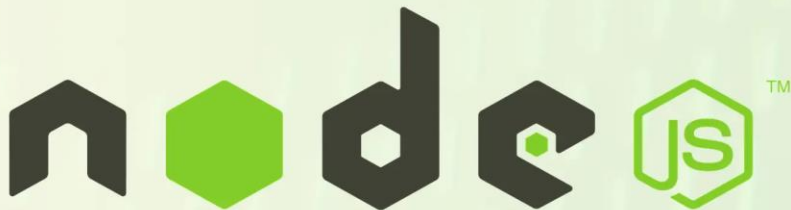
E-Voting System



# Overview

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This is an Express.js-based web application designed for a police officer supervised voting system. The system aims to provide a secure and accountable voting process by implementing multiple layers of verification for Sri Lanka. This is a model of the real project.



# Flow Chart diagram

**Description:** This flowchart describes that supervisor (Election Commission ) will login first then current police officer's who are on duty will login to the system. Then the voting session with start. If not it will redirect back to login on failed attempt.

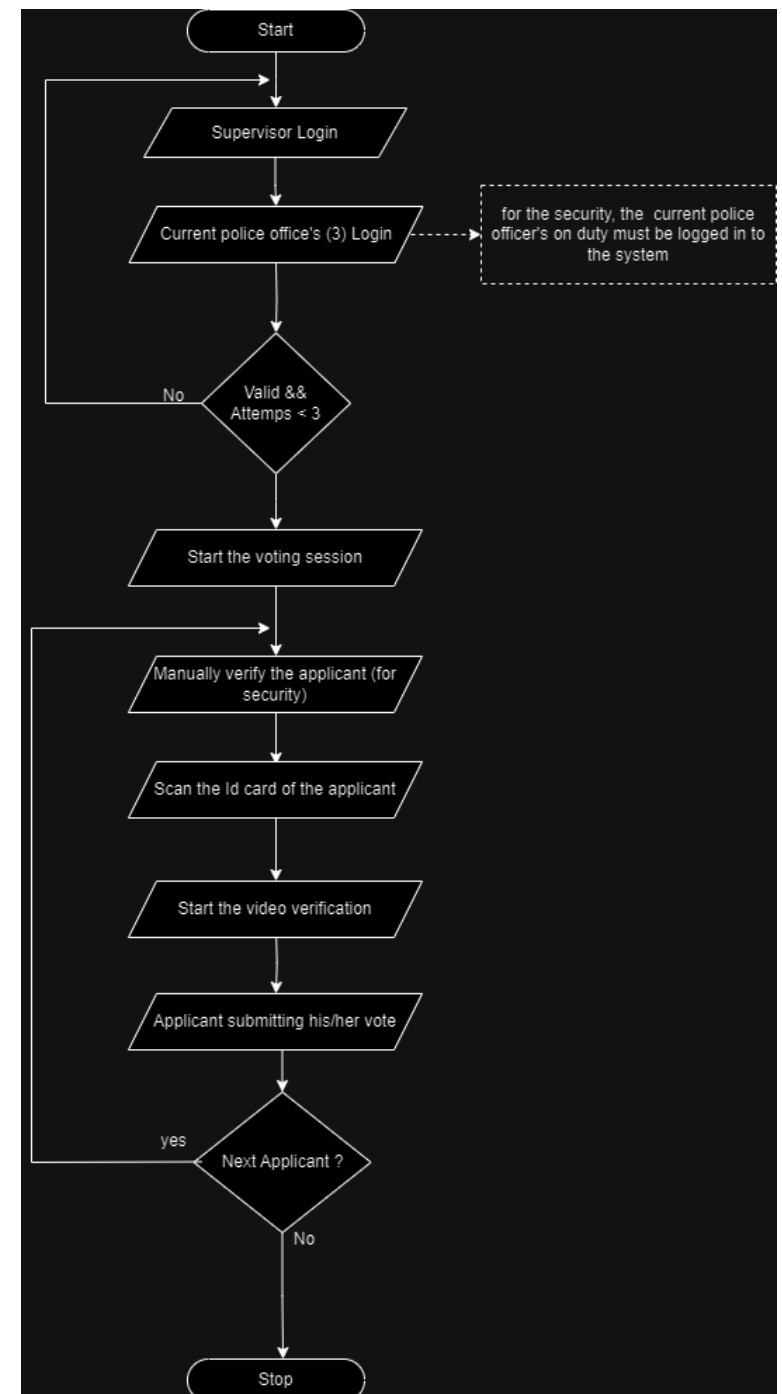
Before giving directly the identify to the system, a person will check the face with the identity card to verify for more security.

Then the man will scan the PDF417 Code on identity Card. Upon correct scan the details of the person will automatically loaded in the server.

The person can proceed to video verification. After passing the video verification the person can vote.

And continuously all the other voters will be voted

When there is no applicants, the voting will be finished.



# Project Development & Deployment



- What will be the **development** methodology ?

We will use agile development methodology, as it promotes flexibility, adaptability To changing requirements and close collaboration between cross-functional teams

- What will be the **deployment** methodology ?

We will be using parallel deployment methodology as so we can check if anything went Wrong.

# GUI Design


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## 1. Identify Verification

In this window, users scan their identity card using an OCR reader and it will show all the details of the applicant.

If the name and other details are accurate, he'll be able to move to the video verification page.

E-Voting System



### Complete your Identity Verification

Front Side (National Identity Card) We will use real time camera / Reader to scan

No file chosen

Back Side (National Identity Card) We will use real time camera / Reader to scan

No file chosen

ID Number

Date of Birth

Gender

Registration Date

Address

#

#Hash Value



# GUI Design

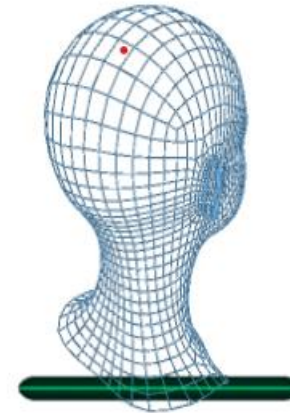
## 2. Video Verification

In this page, we already have the user details and His/her face image which is registered on the Government .( Will be accessing from the API from Government database. ).

The system will tell the applicant to move the face to Right , left, up and down, then verify with photo of The page provided by the API and the face.

After than the applicant can able to move to the voting Page.

Video Verification



**We are Scanning your face, Please hold on.**

This is a test model, so you can pass through this.

Verify

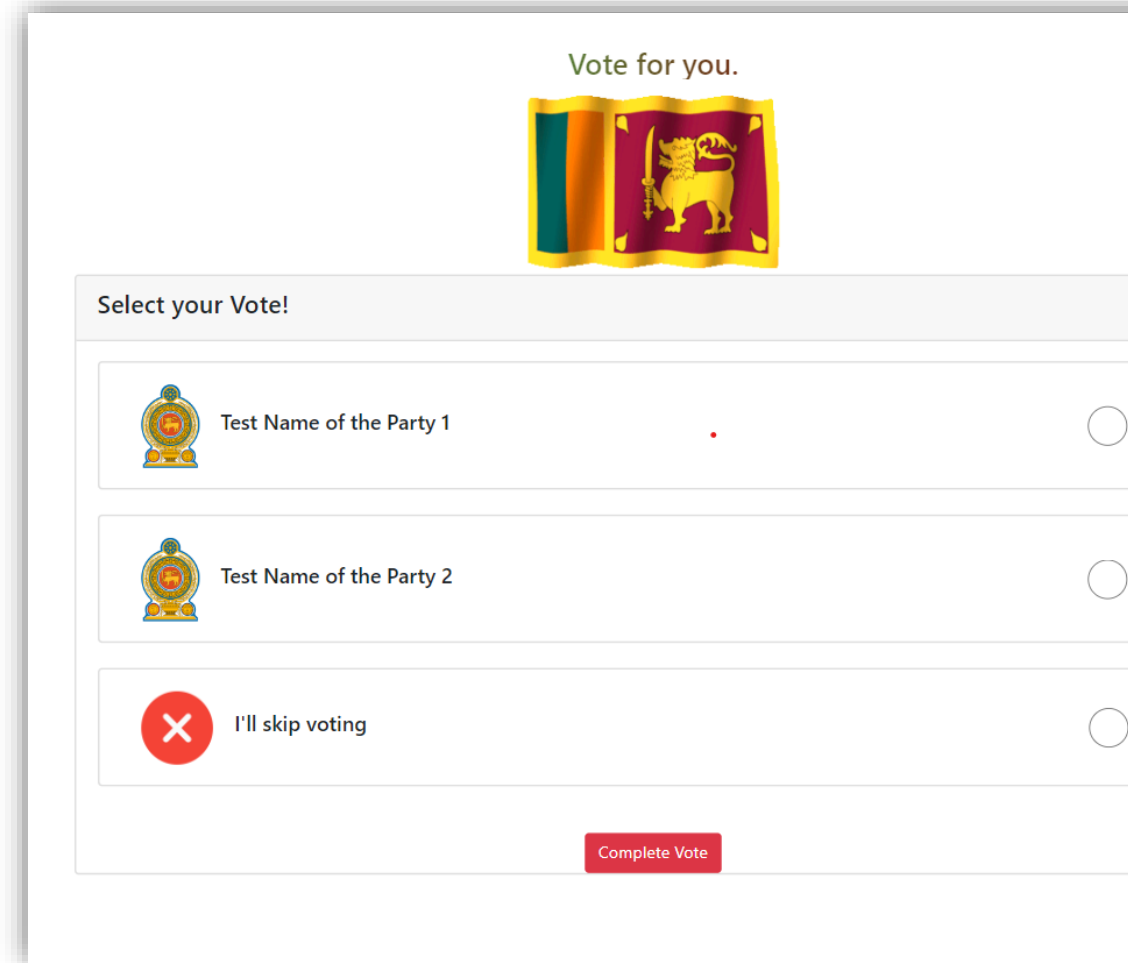
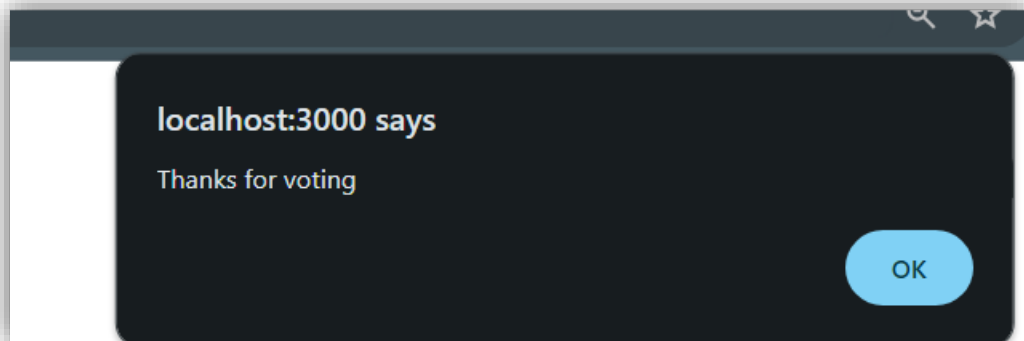
# GUI Design

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## 3. Voting Page

In this page, the applicant already passed all the Verifications and all the voting options will be seen In the page.

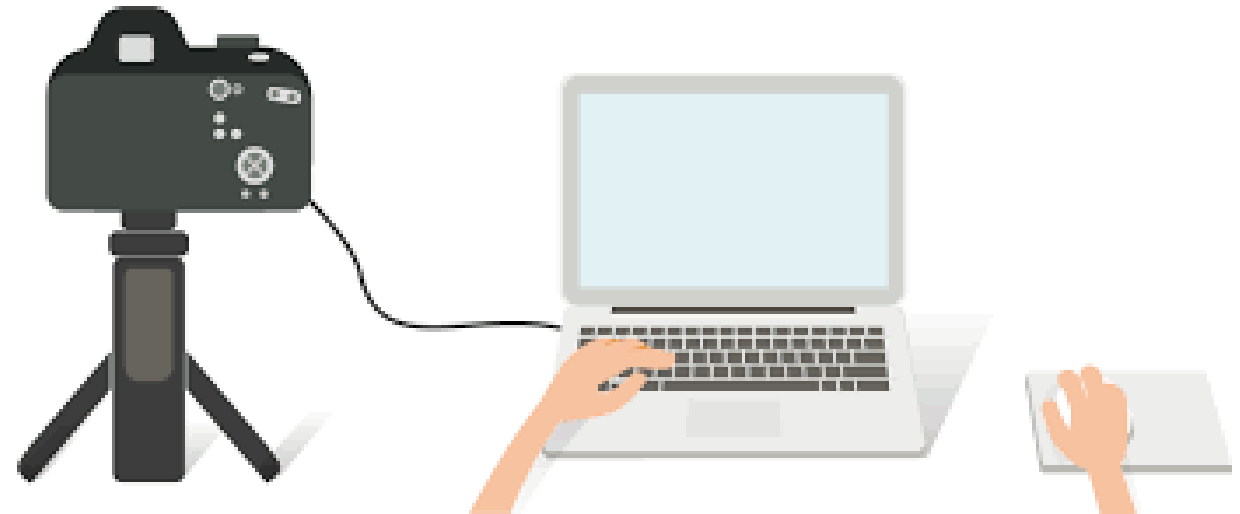
The applicant will select he voting decision, and will Click the complete vote, which will says thanks for your Vote and move to the next applicant.



# Project Prerequisites

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- Node JS Installed.
- NPM Installed.
- Any operating system with at least 4 GB of RAM.
- A video camera to scan the face.
- Internet Connection.
- OCR Scanner



# Project Explanation

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STEP 1 : Supervisor Login

STEP 2 : Current Officers Login

STEP 3 : Identify Card PDF417 Code Scanning

STEP 4 : Loading of Applicant Data

STEP 5 : Moving to the Video Verification

STEP 6 : Verify the applicant using facial recognition

STEP 7 : Voting Process

STEP 8 : Voting Completed



# Check out the model

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If you would like to contribute to the project , check the project on GitHub :  
<https://github.com/sinethjanidu2003/E-voting-System-Model>

**E-voting-System-Model**

Public

☆ Star

This is a voting system for Sri Lanka

● EJS Updated 4 days ago



**Thank You**  
Proud to be a Sri Lankan

