

Major Project–Readme-File

Title: SECURE DIGITAL VOTING SYSTEM USING BLOCKCHAIN TECHNOLOGY

Project Idea:

The aim of this project is to develop a secure, transparent, and efficient online voting system using blockchain technology. This system will address common issues in traditional and electronic voting, such as vote tampering, low voter turnout, and time-consuming vote counting processes. The project will incorporate cryptographic techniques, smart contracts, and face detection systems to ensure the integrity and privacy of the voting process.

Modules included in our Project:

- 1) Admin Module
- 2) User Module

****Admin Module**:**

In admin module it is the responsibility of adding the party details and registering the voters and validating the vote count. Admin login to system by using username as 'admin' and password as 'admin'.

****User Module**:**

In user module the user has to sign up with the application by using username as his ID and then upload his face photo which capture from webcam. After registering user can go for login which validate user id and after successful login user can go for casting the vote.

Functionality of the project :

- 1) Register
- 2) Face Capture
- 3) Login
- 4) Vote Casting
- 5) Face Proctoring
- 6) Display Result

****Register**:**

The voter must first register on the website using the user's basic information, including user name, password, address, contact number, email id, profile image.

****Face Capture**:**

After Entering all the basic details for registration the user will be redirected to the face capture page where the user's face will be captured and then the captured image will be converted in base64 string. The face is captured for avoiding the risk of fake voters.

****Login**:**

The voting system requires users to log in with their username and password, which are encrypted using SHA-256 Encryption, and upon successful verification, redirects them to the voting page.

****Vote Casting**:**

After logging in successfully, users access the voting page to select a candidate from a dropdown list and cast their vote by clicking the "Vote" button. Once the vote is cast, the button is disabled to prevent multiple votes from the same user.

****Face Proctoring**:**

The system will be able to detect faces by using the camera on the user's device. We are utilizing the Face-API library to detect faces. If the camera detects more than one face, the system will display an alert to the user and also sent the user back to the home page and stop their voting process.

****Display Results**:**

A real-time update of the vote total will be shown. Thus the transparency will be maintained and user can also verify their vote is getting counted.

Conclusion :

In conclusion, a secured digital voting system using blockchain technology has the potential to revolutionize the way we conduct elections and voting. The current traditional voting systems are prone to various issues such as fraud, manipulation, and hacking that can undermine the integrity and fairness of the electoral process. However, a blockchain based voting system can provide a secure, transparent, and auditable way for citizens to vote, ensuring the integrity and credibility of the electoral process. In conclusion, a secured digital voting system using blockchain technology has numerous potential applications in various industries and contexts such as government elections, corporate elections, non-profit organizations, universities, and union elections. The technology can provide numerous benefits, including increased security, transparency, accuracy, and efficiency, while also promoting democratic principles and ensuring fairness and accountability.