Project Proposal: Decentralized Voter Registry and Voting Application

1. Team Members:

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2. Introduction:

In this project, we propose to develop a decentralized voting system for employees within a company to cast votes and determine the next chairman of the board. The aim is to facilitate a fair and transparent electoral process while ensuring the security and integrity of the voting system.

3. Objectives:

- Develop a Solidity smart contract for managing the voter registry and token issuance.

- Integrate Pinata for secure storage of voter information on IPFS.

- Build a user-friendly web interface using Streamlit in Python for voter registration and voting.

- Implement functions for voter registration, token issuance, and vote casting.

- Ensure security and data privacy throughout the application.

4. Methodology:

-Smart Contract Development: We will develop a Solidity smart contract to manage the voter registry and voting process. The contract will include functions for registering voters, issuing tokens, and recording votes.

-IPFS Integration: We will integrate Pinata for securely storing voter information off-chain using IPFS. This ensures data immutability and enhances the security of the application.

-Streamlit Web Application: Using Streamlit in Python, we will build a user interface for interacting with the voter registry and casting votes. The web application will allow users to register, receive voting tokens, and cast their votes securely.

-Testing and Deployment: We will thoroughly test the application to ensure functionality and security. The final application will be deployed locally for demonstration purposes.

5. Resources Required:

- Pinata for IPFS storage

- Solidity for smart contract development

- Ganache for local blockchain testing

- Python environment with necessary libraries

6. Expected Deliverables:

- Solidity smart contract for the voter registry and voting process.

- Python web application with a user-friendly interface for voter registration and voting.

- Documentation detailing the design, implementation, and usage of the application.

- Presentation showcasing the features and functionality of the application.