CPSC 559- Advanced Blockchain Technologies Project
SPRING 2023

Submitted to professor:
Dr.Wenlin Han

Team Name:
BitTitans

Team Members :

Names	CWID	Email
Anshika Khandelwal	885186288	anshikakhandelwal@csu.fullerton.edu
Vivek Deshmukh	885186379	vivek.deshmukh05@csu.fullerton.edu
Kunal Chandelkar	886669282	kunalchandelkar@csu.fullerton.edu
Sri Satya Gopisetty	885787150	gss@csu.fullerton.edu

Project Topic - Voting system

Project Description -

This is a Solidity smart contract that implements a voting system with delegated voting. It allows the creation of a new ballot to choose one of the proposed options, gives the right to vote to each address individually, and enables voters to delegate their vote to a trusted person.
The contract defines two structs: Voter and Proposal. The Voter struct represents a single voter and contains four fields: weight, voted, delegate, and vote. The weight field represents the weight of the vote, which is accumulated by delegation. The voted field is a Boolean that

indicates whether the voter has voted or not. The delegate field is the address of the person delegated to, and the vote field is the index of the voted proposal.
The Proposal struct represents a single proposal and contains two fields: name and voteCount. The name field is the short name of the proposal, and the voteCount field is the number of accumulated votes.
The contract also declares a state variable chairperson, which represents the address of the creator of the contract, who serves as the chairperson.

Improvements -

1.Reset Button:

- Implemented a reset button functionality that allows admins to reset the entire voting process and start from scratch.
- Users are required to request permission ("Give me right") from the admin before participating in the reset process.

2.NFT:

- Developed an NFT page on the admin side, allowing admins to mint and list NFTs representing political parties.
- Admins can set prices for the NFTs during the listing process and include relevant details such as the party symbol, seller address, and price.
- Once the admin mints an NFT, it needs approval for listing.

3. Summary:

- Introduced a summary button that provides users with real-time updates on the current election status.
- Displayed the list of candidates participating in the election and their respective live vote counts.

4. Allow me to vote!:

- Required users to click the "Give Me Right" button to obtain permission from the admin before casting their votes.
- Implemented a check to ensure users possess a sufficient amount of Ethereum in their wallets to participate in the election.

5. NFT Marketplace:

- Created an NFT marketplace from scratch, providing voters with the ability to purchase NFTs.

- Displayed all the listed NFTs on the marketplace, along with their respective statuses (sold or available).
- Voters can buy multiple NFTs based on their preferences and account balance.

6. Candidate Page:

- The list of the candidates that are currently standing for the election.
- The Candidate Page displays the history of each candidate and their motto.

7. Pause / Continue:

- Enabled admins to pause the election process in case of technical glitches or errors.
- Allowed the election to be resumed from the paused state by clicking the Continue button.

8.Voting:

- Implemented a seamless voting process that allows users to vote for their preferred candidates.
- Provided an option for users to choose "None Of The Above" (NOTA) if they do not wish to vote for any listed candidates.

9.User Profile:

- Displayed user details, including their current Ethereum balance and wallet address, to provide transparency and accountability.

10. Delegate Function:

- Implemented a delegate function that allows users to authorize someone else to vote on their behalf.
- Users can delegate their voting authority to another person, who can vote both on their own behalf and on behalf of the delegating user.

11.End Vote:

- Added a feature that enables admins to stop the ongoing ballot, preventing further voting.
- Displayed the winner's name immediately after clicking the End Vote button.

12.Developed a Web Interface:

- Developed a user-friendly web interface with separate sections for admins and voters.
- The interface facilitates the voting process and allows voters to buy NFTs.

Instructions -

1. Open ganache for local blockchain network
2. Run **truffle compile** code in terminal
3. **Change contact address** of Market, Ballot and NFT in index.js file from ganache.
4. Run **truffle migrate** command.
5. Run index.html file. It will connect the website with metamask.