K. J. Somaiya College of Engineering, Mumbai-77
(A constituent college of Somaiya Vidyavihar University)

Batch: A2	**Roll No.: 16010121033**
Experiment No: 02	
Group No: 5	
DIGIPOLLS	

Title: Design Document for MiniProject.

Objective: Understand the necessity of design document.

Expected Outcome of Experiment:

Understand the necessity of design document.

Books/ Journals/ Websites referred:

https://www.researchgate.net/figure/Blockchain-based-e-voting-system-architecture_fig2_357827345
https://www.investopedia.com/terms/b/blockchain.asp
https://core.ac.uk/download/pdf/155779036.pdf

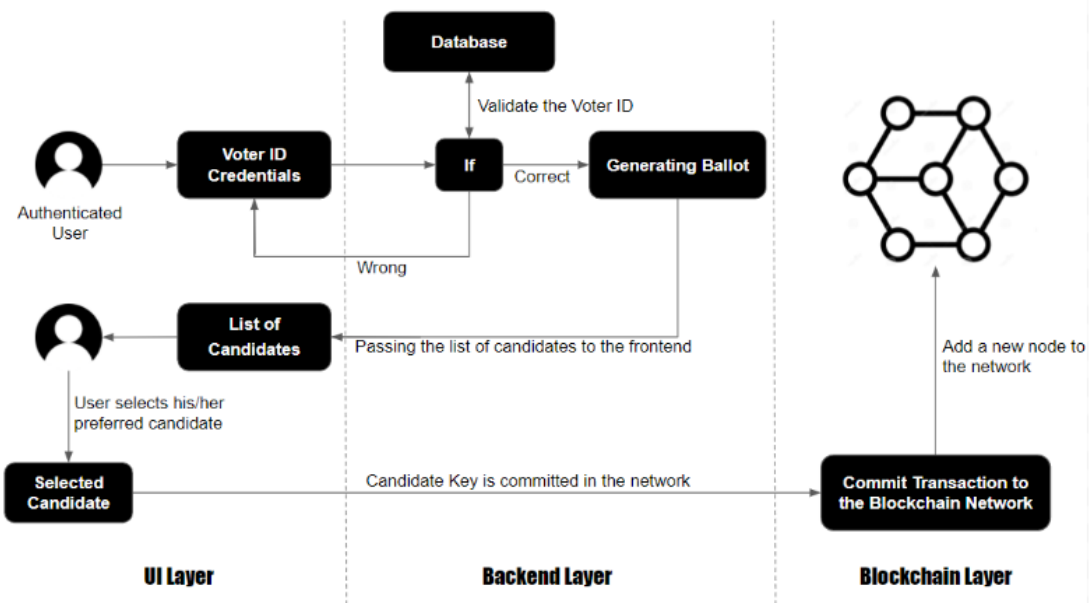
Introduction:

As the process of development of a project progresses, the second important stage is the design.

DIGIPOLLS

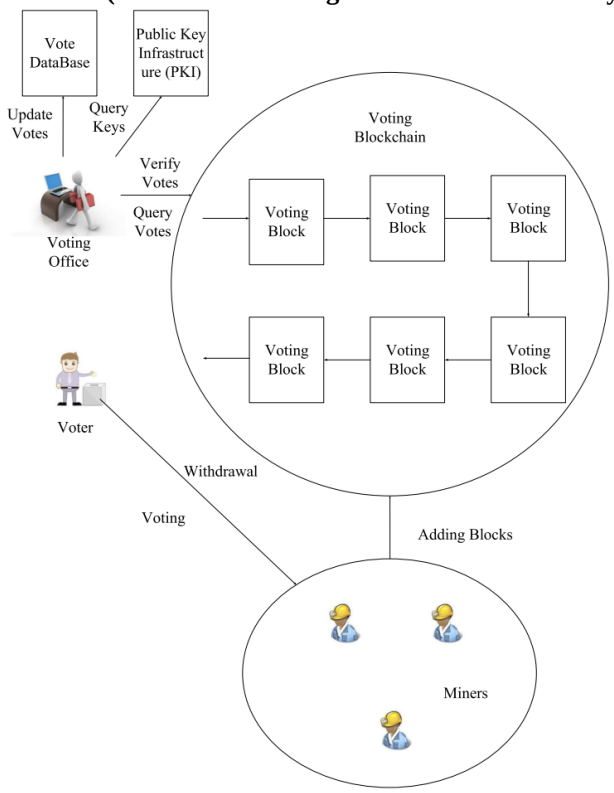
An e voting system using blockchain technology.

Interface

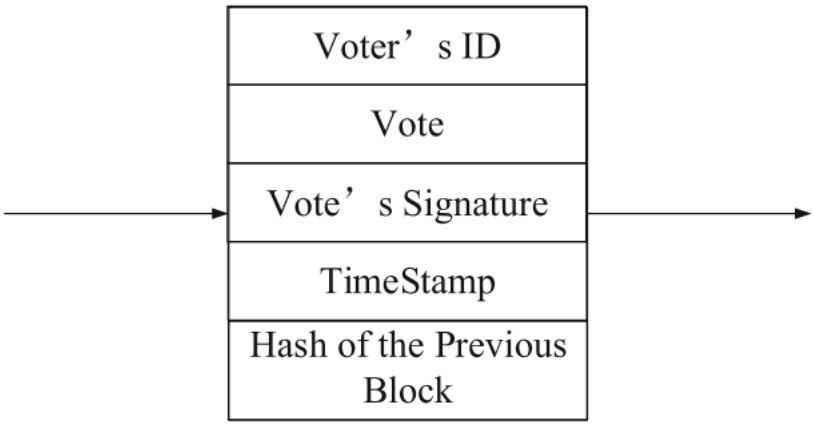


Backend/ database design /Data design

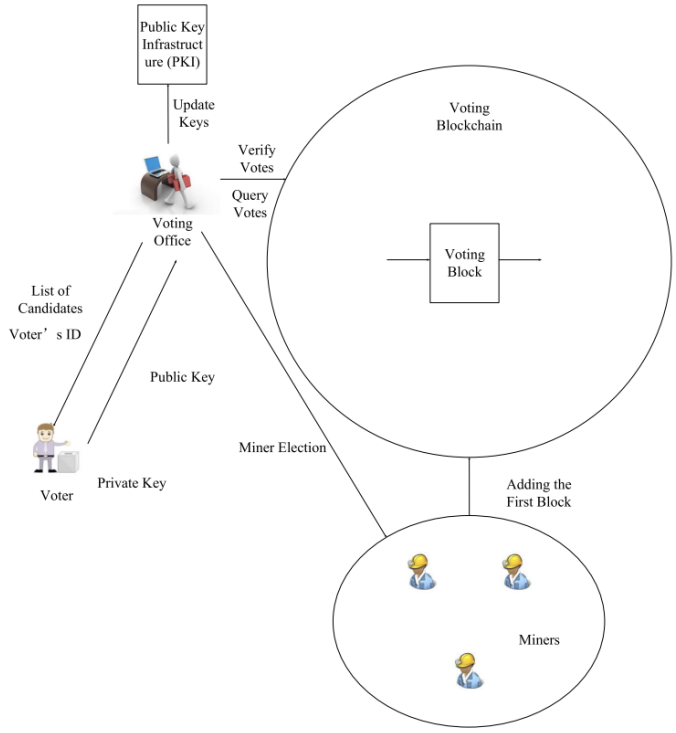
SCHEMA



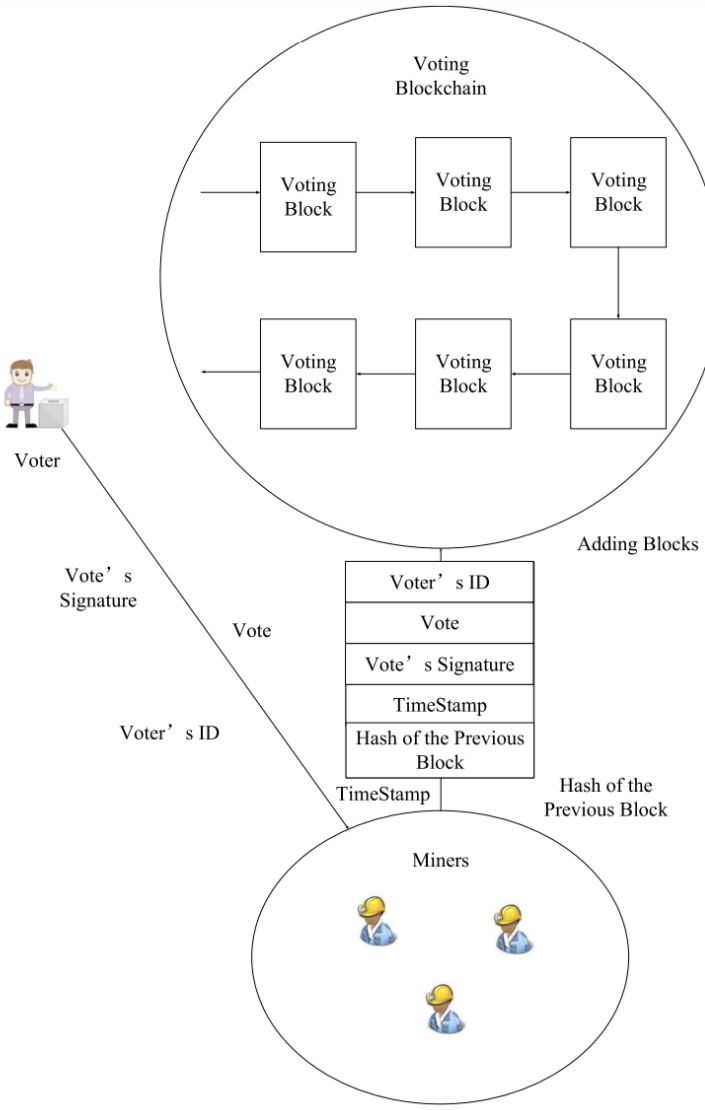
VOTING BLOCK SCHEMA



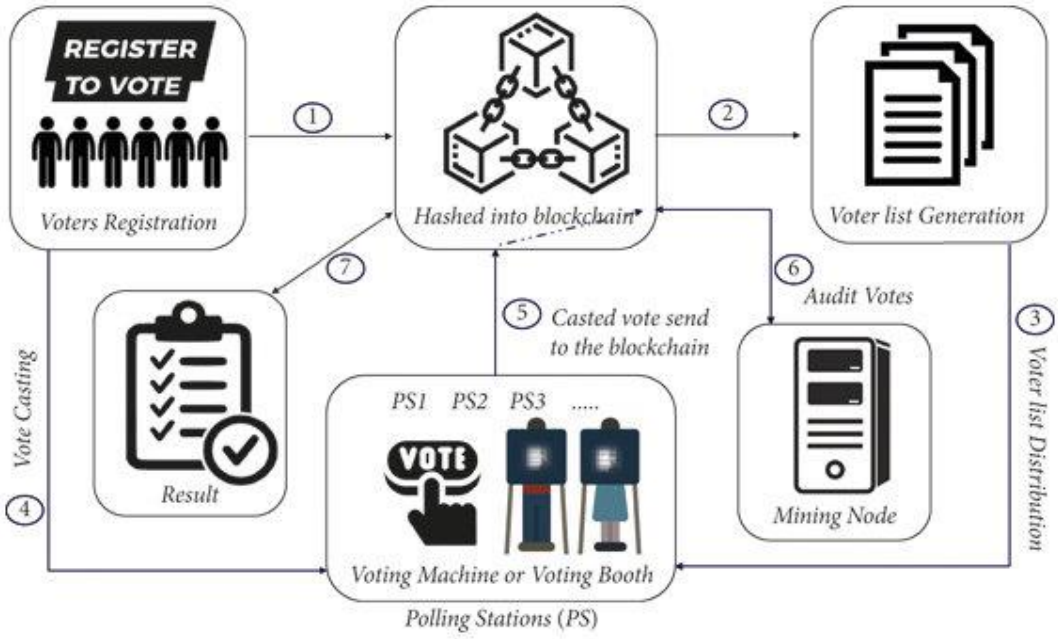
INITIALIZATION OF VOTING SYSTEM


Public Key Infrastructure (PKI)
Update Keys
Verify Votes
Query Votes
Voting Office
Voting Blockchain
Voting Block
List of Candidates
Voter's ID
Public Key
Private Key
Voter
Miner Election
Adding the First Block
Miners

VOTING

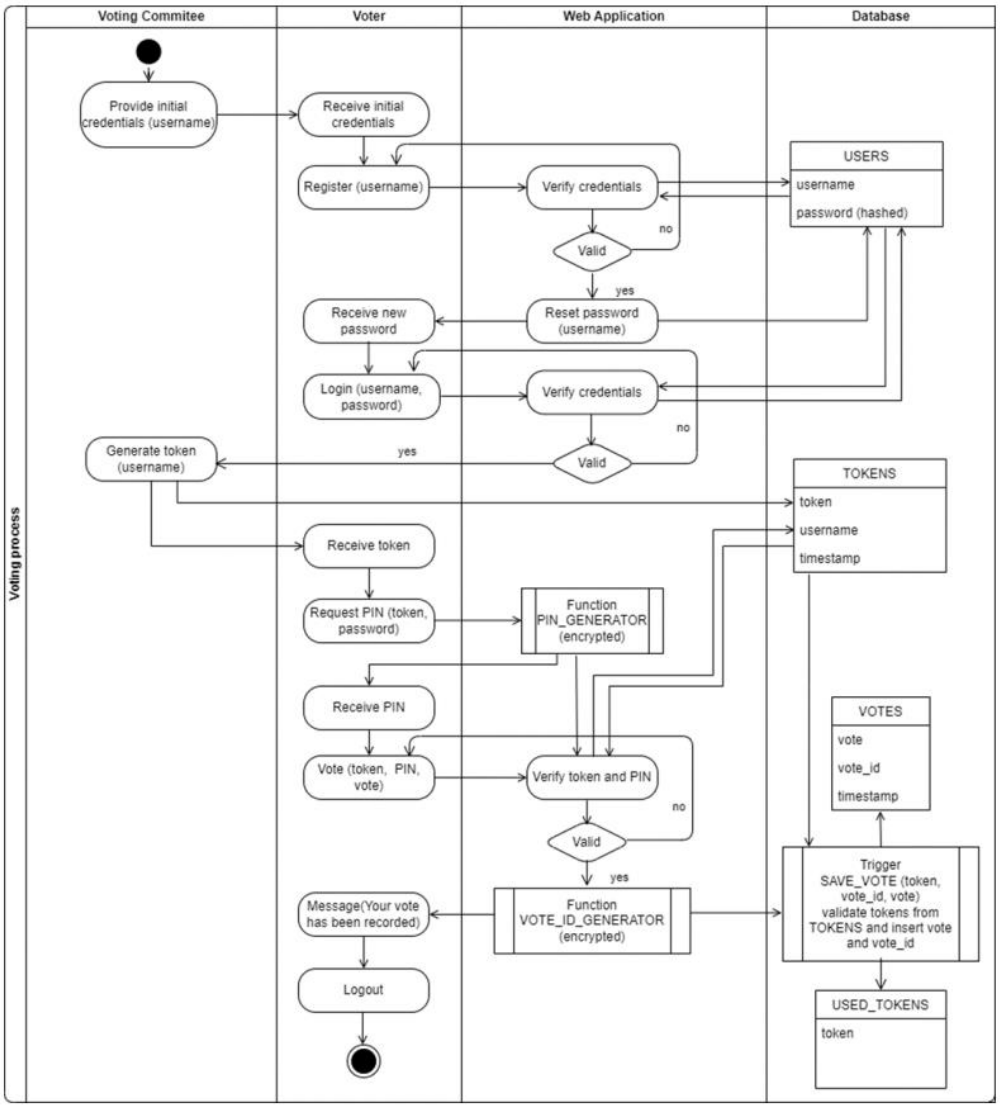


Architectural design

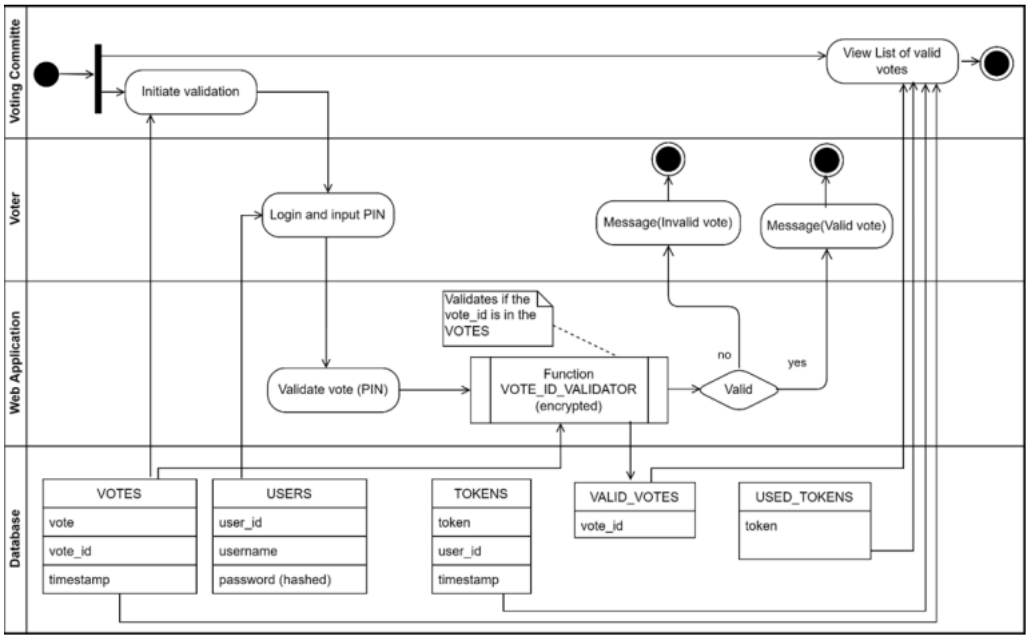


Above is reference from https://www.researchgate.net/figure/Blockchain-based-e-voting-system-architecture_fig2_357827345

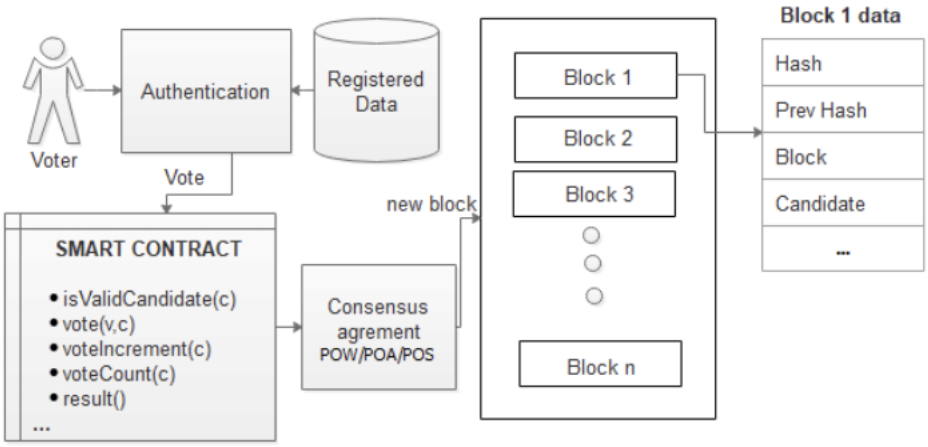
SYSTEM ARCHITECTURE FOR VOTING



SYSTEM ARCHITECTURE FOR VALIDATION

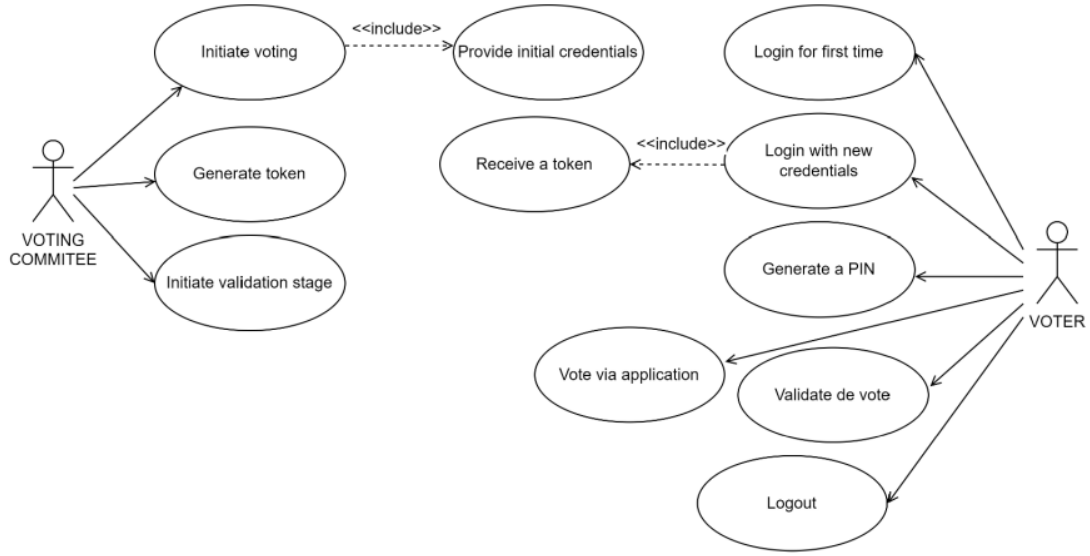


WORK FLOW

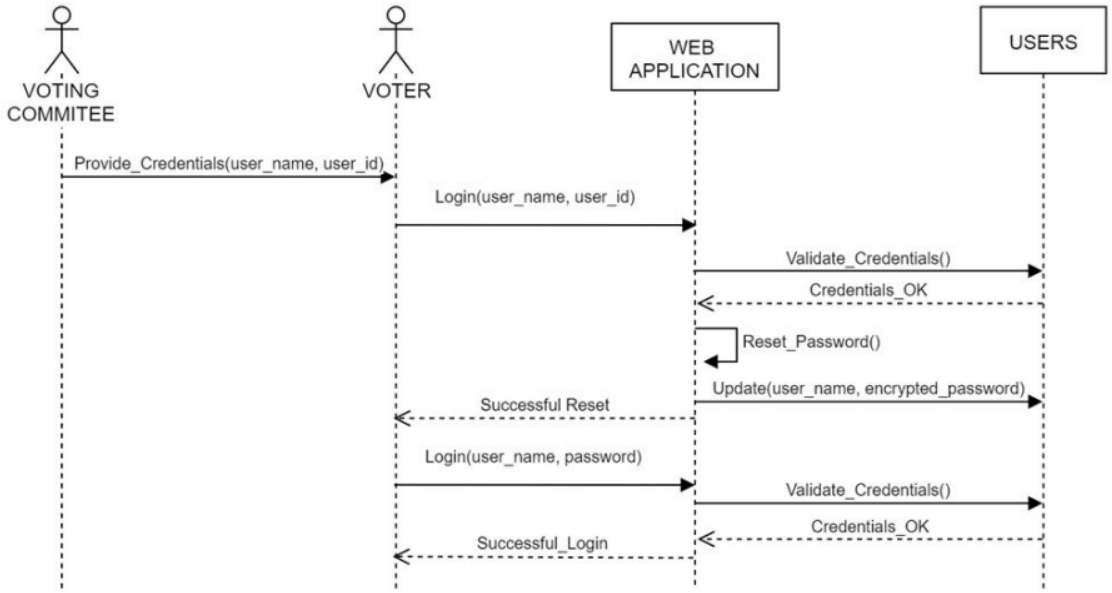


UML diagrams

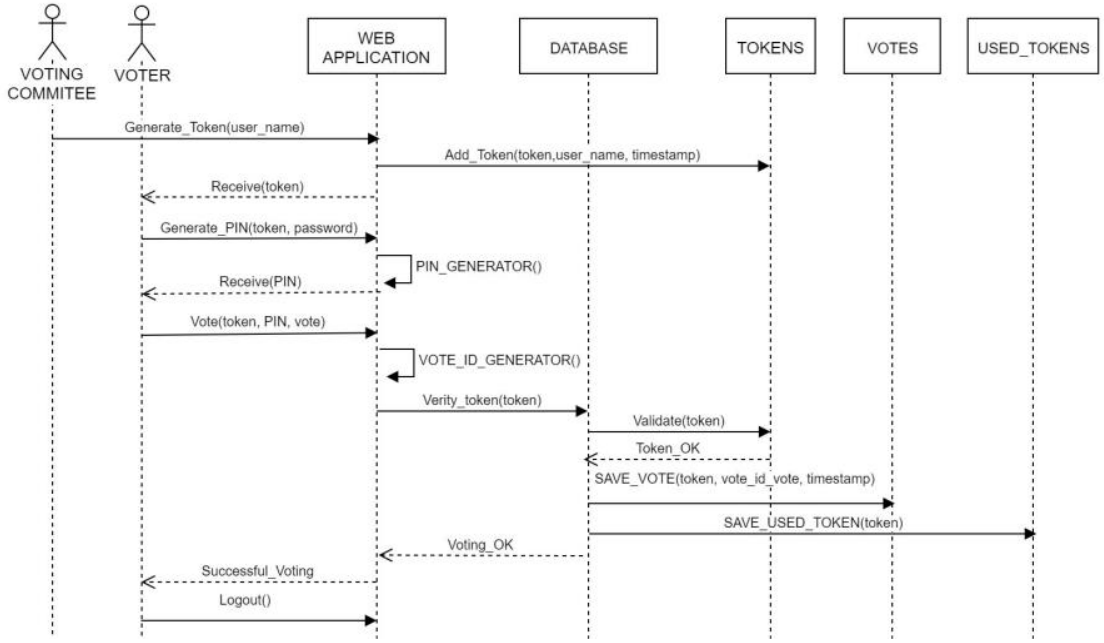
a. Use-case diagram:



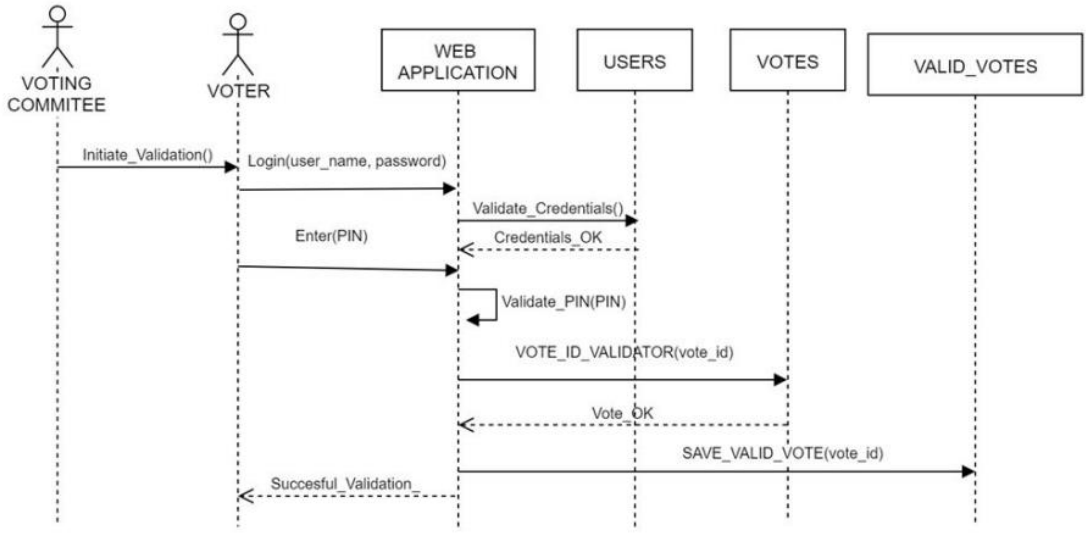
b. Sequence Diagram: Authentication



c. Sequence Diagram: voting



d. Sequence Diagram: Validation

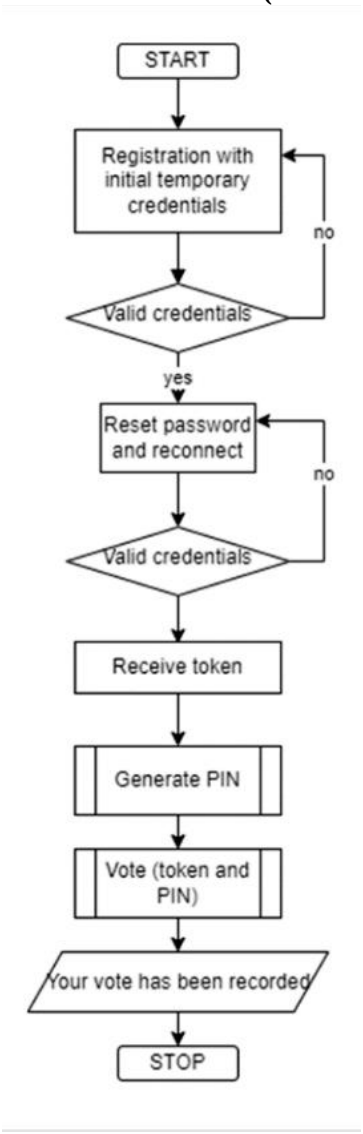


Design of test cases.

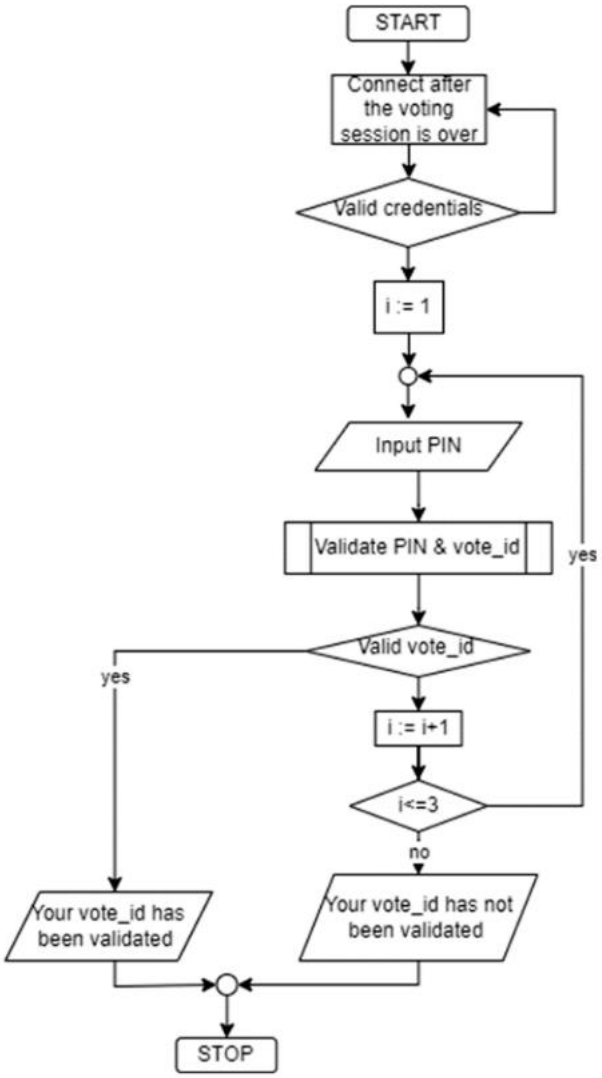
Test Case Number	Test Case Description	Expected Outcome if Successful	Expected Outcome if Unsuccessful
1	Company Registration: Successful registration	Company registered successfully	Registration fails
2	Company Login: Successful login	Company can log in successfully	Login fails
3	Election Creation: Creation of new election	Election created successfully	Election creation fails
4	Dashboard Display: Dashboard shown after election creation	Dashboard displayed successfully	Dashboard display fails
5	Candidate Listing: List of candidates displayed	Candidates listed	Candidates not listed
6	Notification to Candidate: Notification sent to candidate	Candidate notified	Notification not sent
7	Voter Listing: List of voters displayed	Voters listed	Voters not listed
8	Notification to Voter: Secure credentials sent to voters	Voters received login credentials	Credentials not sent
9	Voter Login: Successful login	Voter can log in successfully	Login fails
10	Successful Voting: Voter successfully casts vote	Vote successfully cast	Voting fails
11	Unsuccessful Voting: Voter unable to cast vote	Voting prevented	Vote cast despite issues
12	Winner Notification: Notification sent to winner candidates	Winners notified	Notification not sent to winners
13	Winner Notification: Notification sent to voters	Voters notified of winner	Notification not sent to voters

Algorithmic design

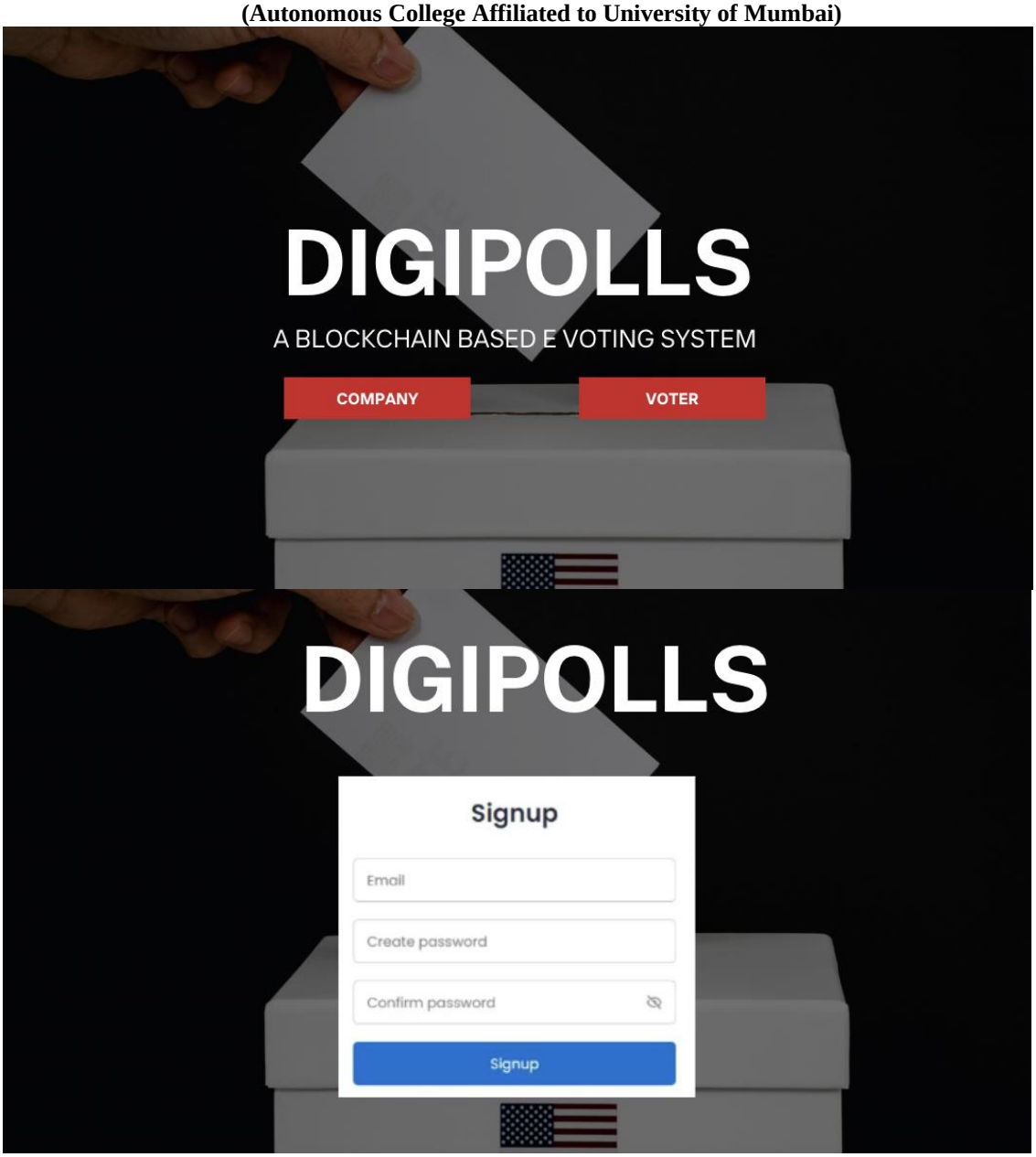
FOR VOTING

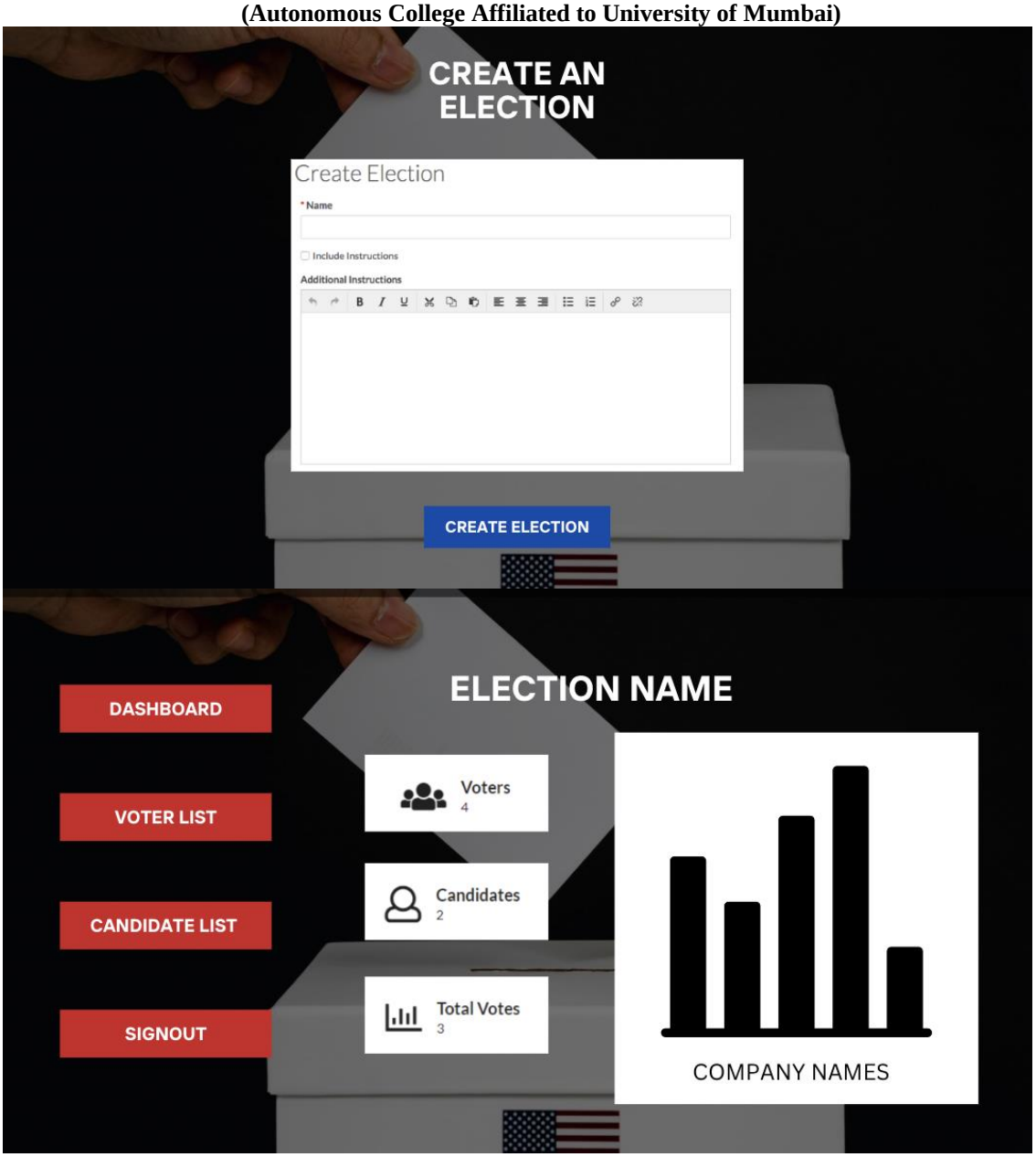


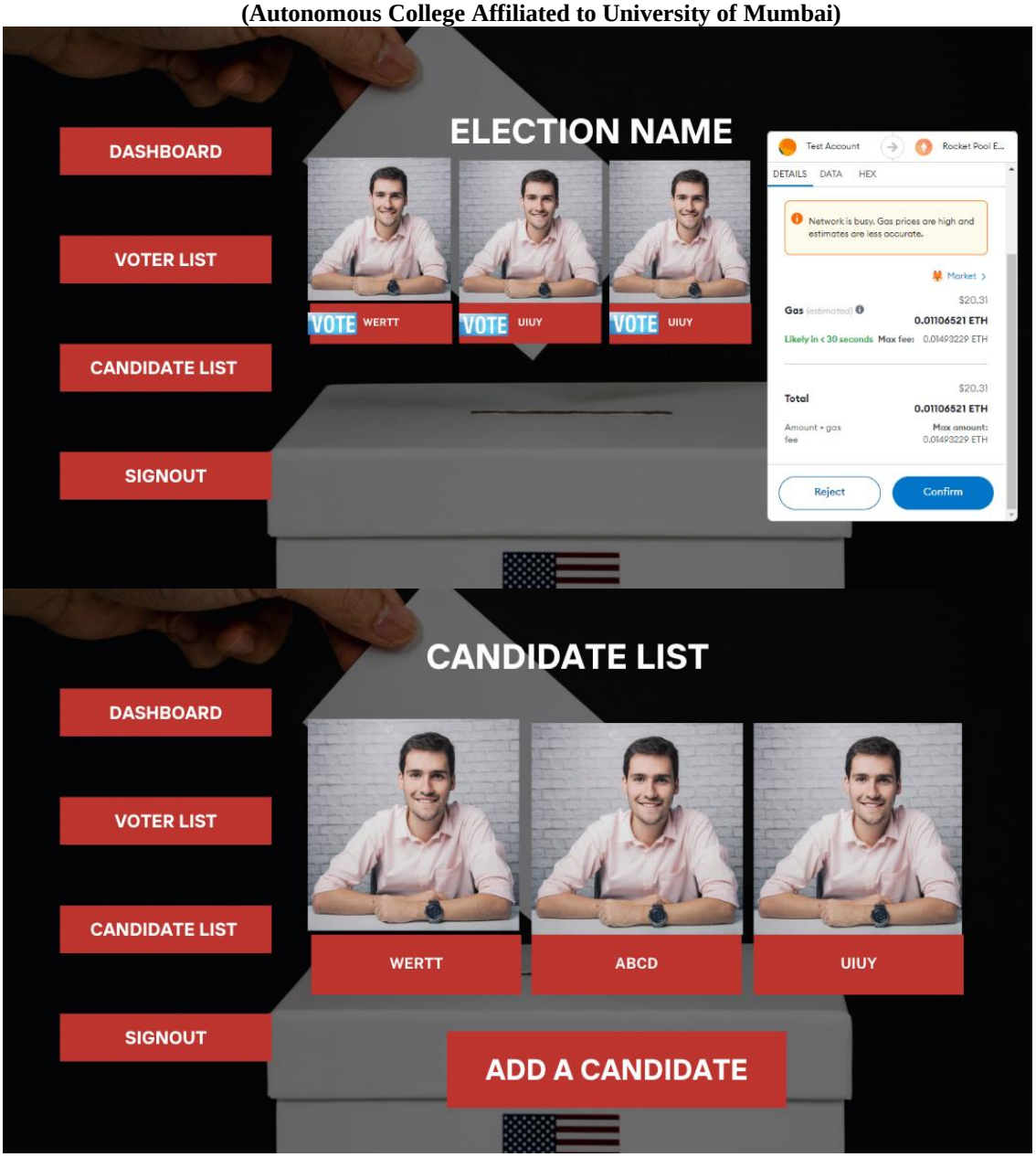
FOR VALIDATION

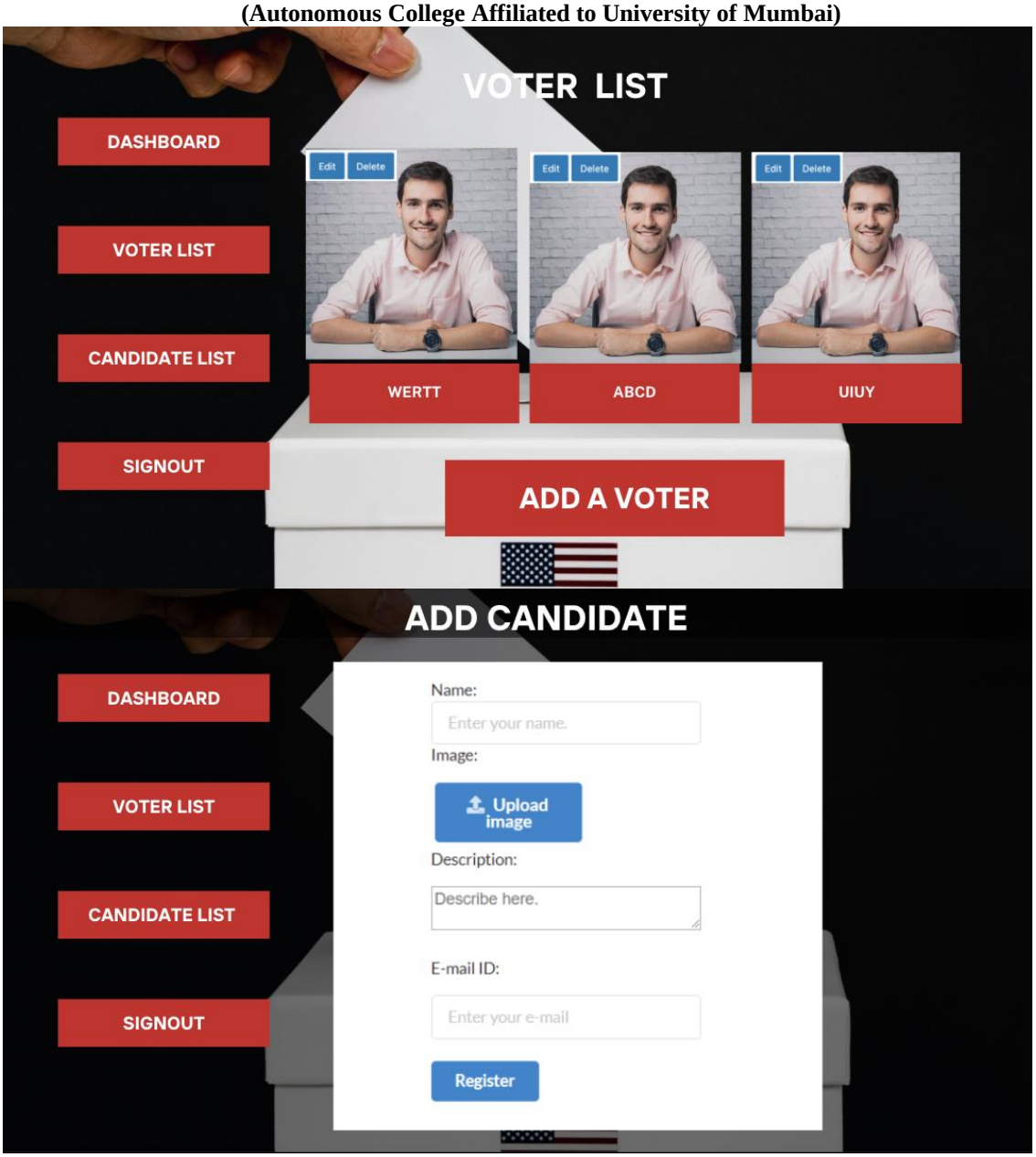


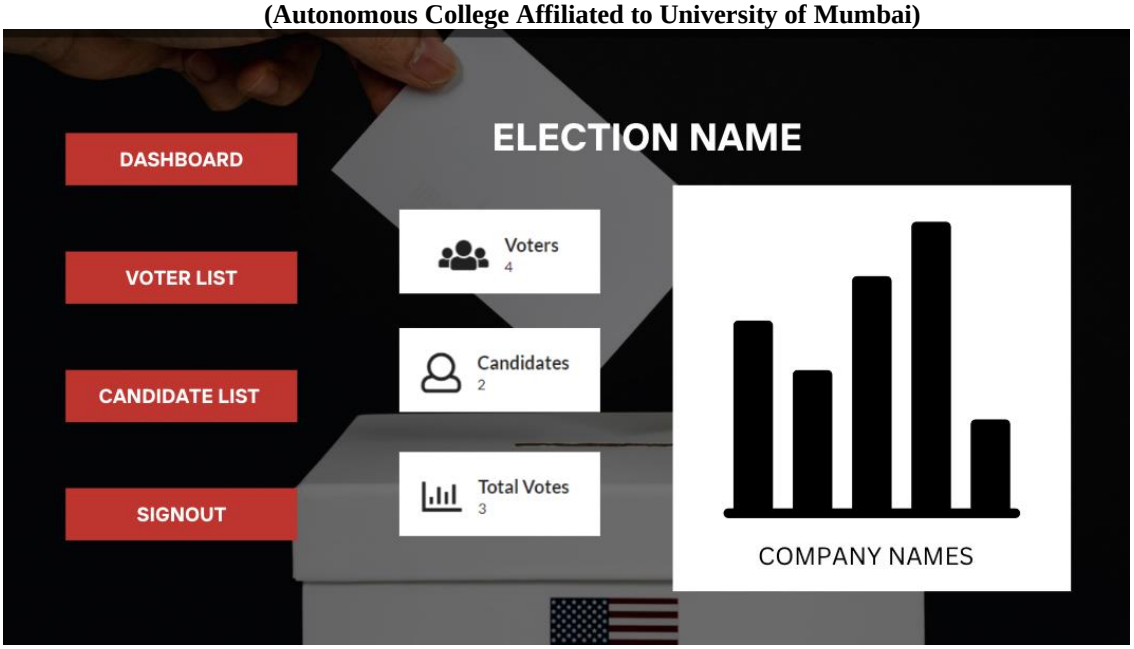
Snapshots of design:


DIGIPOLLS
A BLOCKCHAIN BASED E VOTING SYSTEM
COMPANY
VOTER
DIGIPOLLS
Signup
Email
Create password
Confirm password
Signup


CREATE AN ELECTION
Create Election
*Name
Include Instructions
Additional Instructions
CREATE ELECTION
ELECTION NAME
DASHBOARD
VOTER LIST
CANDIDATE LIST
SIGNOUT
Voters
4
Candidates
2
Total Votes
3
COMPANY NAMES


DASHBOARD
VOTER LIST
CANDIDATE LIST
SIGNOUT
ELECTION NAME
VOTE WERTT
VOTE UIUY
VOTE UIUY
Test Account
Rocket Pool E...
DETAILS DATA HEX
Network is busy. Gas prices are high and estimates are less accurate.
Market
Gas (estimated)
$20.31
0.01106521 ETH
Likely in < 30 seconds Max fee: 0.01493229 ETH
Total
$20.31
0.01106521 ETH
Amount + gas fee
Max amount: 0.01493229 ETH
Reject
Confirm
DASHBOARD
VOTER LIST
CANDIDATE LIST
SIGNOUT
CANDIDATE LIST
WERTT
ABCD
UIUY
ADD A CANDIDATE


VOTER LIST
DASHBOARD
VOTER LIST
CANDIDATE LIST
SIGNOUT
Edit
Delete
WERTT
ABCD
UIUY
ADD A VOTER
ADD CANDIDATE
DASHBOARD
VOTER LIST
CANDIDATE LIST
SIGNOUT
Name:
Enter your name.
Image:
Upload image
Description:
Describe here.
E-mail ID:
Enter your e-mail
Register



Conclusion:

The design presented here is well-suited for our e-voting system using blockchain in company elections. It ensures a smooth user experience, secure data handling, fault tolerance, and reliability. The inclusion of frontend interface, backend/database design, architectural design, UML diagrams, test case design, and algorithmic considerations guarantees the system's effectiveness, security, and usability. With thorough testing and emphasis on efficiency and security in algorithmic design, we're confident in the system's ability to facilitate transparent and trustworthy company elections.