

Online Voting System Using Blockchain (OVS)

Project Submitted in Partial Fulfillment of the Requirements for the Degree of
Bachelor of Technology in the field of Computer Science and Engineering

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CERTIFICATE

This is to certify that **LOYAL DEBNATH (123200903067), DONA SAHA (123200903055), SAMIRAN BASU (123200903107), SOUDEEP CHAKRABORTY (123200903120), SWAPNIL PRANTO SARKAR (123200903143)** have completed their project entitled **ONLINE VOTING SYSTEM USING BLOCKCHAIN**, under the guidance of Assistant Professor **JAYSHREE BHATTACHARYA** in partial fulfillment of the requirements for the award of the **Bachelor of Technology in Computer Science and Engineering** from JIS college of Engineering (An Autonomous Institute) is an authentic record of their own work carried out during the academic year 2023-24 and to the best of our knowledge, this work has not been submitted elsewhere as part of the process of obtaining a degree, diploma, fellowship or any other similar title.

Signature of the Supervisor

Signature of the HOD

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Place:

Date:

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Abstract

This venture report provides the development and implementation of an internet balloting device leveraging Blockchain generation. The machine ambitions to decorate the security, transparency, and performance of the balloting procedure through making use of Blockchain's immutable and decentralized nature.

For the frontend, HTML, CSS, and JavaScript have been employed to create an intuitive user interface. these technologies make sure a user-friendly vote casting experience available throughout numerous gadgets and systems.

in the improvement phase, the Ethereum-based totally Blockchain framework changed into utilized. specially, Truffle and Ganache were employed for clever contract development, deployment, and testing. Truffle provided a suite of development tools for Ethereum clever contracts, at the same time as Ganache served as a private blockchain for nearby development and testing purposes.

furthermore, Solidity, a settlement-orientated programming language, turned into applied to code the clever contracts governing the voting manner. Solidity's security features and compatibility with Ethereum made it an excellent desire for enforcing the backend logic of the web voting gadget.

via the combination of these technology, the online balloting machine guarantees transparency and immutability of the voting facts, mitigating dangers related to traditional centralized vote casting structures consisting of fraud and manipulation.

This task report information the design, implementation, and trying out of the web voting device, highlighting its capability to revolutionize the electoral method through leveraging the power of Blockchain technology.

1.Introduction: -

Voting whether conducted through the conventional ballot or through digital method paperwork the premise on which democracy depends digital vote casting has taken center location in studies with the goal of minimizing the fee related in putting in place the voting method, while ensuring the electoral integrity is maintained by gratifying privacy, safety and compliance necessities. The current method, whether electronic or now not has proved to be unsatisfactory with respect to transparency. it may be very difficult for the citizens to be confident that the vote he/she has casted for the duration of the election reflects within the election end result. electronic vote casting using Direct Recording electronic do no longer generate receipt on successful casting of votes. No file of election besides vote rely is made public by the government, which means that the electorate aren't confident of any outside interference in case of presidency carrying out the process of vote recounting. Non-governmental entities can also intervene with elections, via physical force, verbal intimidation, or fraud, that may bring about flawed casting or counting of votes. tracking for and minimizing electoral fraud is also an ongoing mission in nations with robust traditions of unfastened and truthful elections. changing the traditional technique with electronic approach the use of Blockchain technique can save you potential frauds that could take location for the duration of election.

Blockchain technology is a distributed network of interconnected nodes. a duplicate of distributed ledger is assigned to each node, every of which contains a entire history of all the transactions which have been processed through the community. every transaction processed generated a hash. The hash created depends now not most effective at the present day transaction however also on the hash of the preceding transaction. accordingly, any small exchange at the facts will effect the hash of the transaction. The transaction is written to the block. This permits the customers to stay self sustaining whilst the usage of the machine. A primary evaluation of Blockchain shows that it presents the potential of making the voting system greater comfortable and reliable.

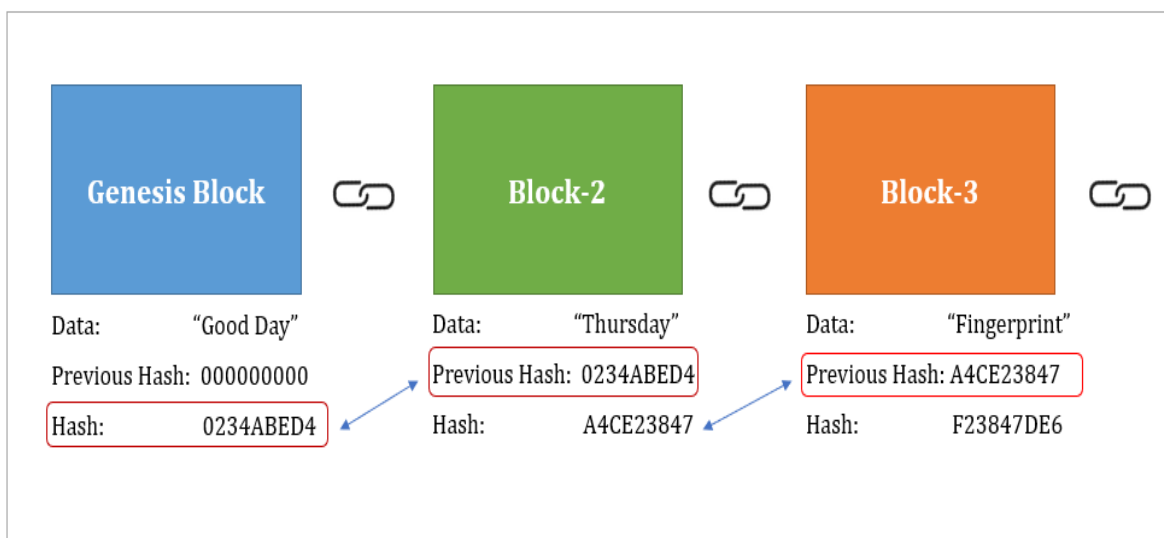
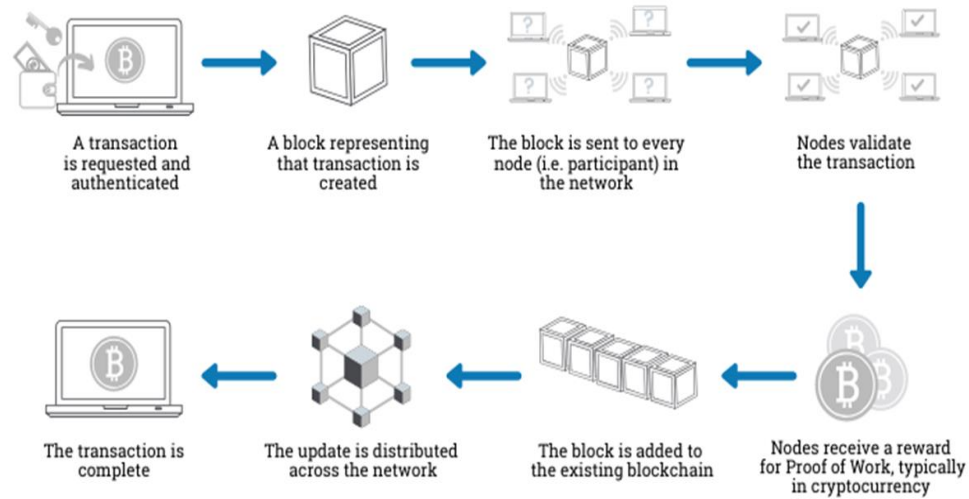


Fig:1.1: Block Chain Diagram

How does a transaction get into the blockchain?



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Fig:1.2: How does a transaction get into the blockchain

2.Literature Survey:

2.1 Online Voting System for India Based on AADHAR ID - Himanshu Agarwal, G. N.

Pandey in the year 2013. A high security password is checked in the main database before voting is allowed. The voter will be able to confirm if the vote is transferred to the correct candidate or party. The tallying of the votes can be done manually, thus saving the data.

2.2 Biometric voting system using Aadhaar card in India – S Chakraborty, S Mukherjee

in the year 2016. The main goal of this venture is to build a safe electronic voting machine using Finger printing technique that distinguishes evidence, so that we can use the Aadhar card database for specific marks. The online-voting confirmation process should be possible during the race voting season using finger vein detection, which enables the electronic poll reset to allow voters to cast their votes.

2.3 Trustworthy Electronic Voting Using Adjusted Blockchain Technology - Basit

Shahzad Raju, Jon Crowcroft in the year 2019. This paper suggests a system that makes use of appropriate hashing methods to ensure data security. This paper introduces the concept of block-creation and block sealing. The implementation of a block sealing principle helps to make the blockchain flexible to meet polling process requirements.

2.4 Security Analysis of India's Voting Machine - Hari K. Prasad, Arun Kankipati, Sai

Krishna Sakhamuri in the year 2010 . Security Analysis was performed on real Indian EVM system. This paper states that EVM can be tampered in many ways such as, tampering with software before CPU manufacture, tampering with machine state, substituting a look a-like CPU and/or a unit and thus secrecy of the ballot can be violated. The proposed voting system does not have any major hardware requirements, thus elimination all the above disadvantages of EVM. Also the proposed model uses blockchain which ensures that the vote transfer to candidate's ballot is easy and secure.

3.Methodology:

3.1. Introduction:

- Provide an overview of the project, including its objectives, significance, and the technologies employed.

3.2.System Architecture:

- Illustrate the architecture of the Online Voting System using Blockchain, highlighting the integration of HTML, CSS, JavaScript for frontend development, and Truffle, Ganache, Solidity, Node.js, and Meta mask for backend and smart contract development.

3.3. Requirements Analysis:

- Conduct a comprehensive analysis of functional and non-functional requirements, including user requirements, security requirements, performance requirements, and regulatory compliance.

3.4. Design Phase:

- **Frontend Design:**

Describe the design process of the user interface using HTML, CSS, and JavaScript, focusing on user experience and accessibility.

- **Backend Design:**

Explain the design of smart contracts using Solidity, emphasizing security, reliability, and efficiency.

Discuss the integration of Truffle and Ganache for smart contract compilation, deployment, and testing.

Outline the design of backend server using Node.js for handling user requests and interacting with the blockchain network.

3.5. Implementation:

3.5.1. Frontend Development:

Detail the implementation of the user interface using HTML, CSS, and JavaScript, including layout design, form validation, and event handling.

3.5.2. Backend Development:

- Explain the development of smart contracts using Solidity, covering contract logic, data structures, and functions.
- Describe the implementation of backend server using Node.js, including API endpoints, request handling, and blockchain interaction via web3.js.
- Provide code snippets and screenshots to illustrate key implementation aspects.

3.6. Testing:

3.6.1. Unit Testing:

- Discuss the unit testing of smart contracts using Truffle framework, ensuring contract functionalities work as expected.
- Describe the unit testing of backend server endpoints using testing frameworks like Mocha or Jest.

3.6.2. Integration Testing:

- Explain the integration testing of frontend and backend components to ensure seamless interaction and functionality.
- Perform end-to-end testing of the Online Voting System to validate its overall behavior and performance.

3.7. Deployment:

Outline the deployment process of the Online Voting System, including deploying smart contracts to the blockchain network using Truffle and Ganache, and deploying backend server to a hosting environment.

3.8. Security Considerations:

Discuss the security measures implemented in the Online Voting System to mitigate common threats such as tampering, unauthorized access, and denial-of-service attacks. Address the security implications of using blockchain technology for online voting, including consensus mechanisms, immutability, and privacy.

3.9. Evaluation:

Evaluate the Online Voting System against the defined requirements and objectives, highlighting its strengths, limitations, and areas for improvement. Gather feedback from users and stakeholders to assess user satisfaction and identify potential enhancements.

3.10. Conclusion:

Summarize the key findings and contributions of the project, reiterating its significance in the context of online voting systems and blockchain technology.

3.11. References:

Cite relevant literature, documentation, and resources consulted during the project implementation and research process.

3.12. Appendices:

Include supplementary materials such as code snippets, configuration files, and additional documentation for reference.

4. Proposed Method:

4.1 Introduction:

- a. Provide an overview of the proposed project, emphasizing the need for secure and transparent online voting systems and the potential benefits of leveraging blockchain technology.

4.2 Objective:

- a. Define the primary objective of the project, which is to develop an Online Voting System that ensures integrity, security, and transparency in the voting process through the use of blockchain technology.

4.3 System Architecture Overview:

- a. Briefly describe the proposed system architecture, highlighting the integration of HTML, CSS, JavaScript for frontend development, and Truffle, Ganache, Solidity, Node.js, and Metamask for backend and smart contract development.

4.4 Proposed Methodology:

- a. **Requirements Gathering:**

- b. Conduct stakeholder interviews and analysis to gather requirements, including functional and non-functional requirements such as user authentication, ballot secrecy, scalability, and auditability.

- c. **System Design:**

- d. **Frontend Design:**

- i. Design the user interface using HTML, CSS, and JavaScript to create an intuitive and responsive voting platform accessible via web browsers.

- e. **Backend Design:**

- i. Design smart contracts using Solidity to define the voting mechanism, candidate registration, ballot casting, and result tallying.
- ii. Develop backend server using Node.js to handle user authentication, request routing, and interaction with the blockchain network.

f. **Development:**

- **Frontend Development:**

- i. Implement the user interface components using HTML for structure, CSS for styling, and JavaScript for dynamic behavior, ensuring compatibility across different devices and browsers.

- **Backend Development:**

- ii. Develop smart contracts using Solidity, implementing the core functionalities of the voting system such as voter registration, ballot creation, and tallying.
- iii. Integrate Truffle and Ganache for smart contract compilation, deployment, and testing.
- iv. Implement backend server using Node.js, incorporating APIs for user authentication and interaction with the blockchain network via web3.js.
- v. Integrate Metamask for secure interaction with the Ethereum blockchain.

g. **Testing:**

- h. Conduct thorough testing of both frontend and backend components, including unit testing, integration testing, and end-to-end testing to ensure functionality, security, and performance.

i. **Deployment:**

- j. Deploy the Online Voting System to a hosting environment, including deploying smart contracts to the Ethereum blockchain network and deploying backend server to a web server or cloud platform.

4.5 Expected Outcomes:

- a. Describe the expected outcomes of the project, including a secure and transparent online voting platform that ensures the integrity of the voting process and enhances voter trust and participation.

4.6 Timeline:

- a. Provide a timeline outlining the proposed schedule for each phase of the project, including requirements gathering, design, development, testing, and deployment.

4.7 Resource Requirements:

- a. List the resources required for the successful implementation of the project, including software tools, development environments, and personnel.

4.8 Risk Management:

- a. Identify potential risks and challenges associated with the project, such as security vulnerabilities, regulatory compliance, and scalability issues, and propose mitigation strategies.

4.9 Conclusion:

- a. Summarize the proposed methodology, emphasizing its potential to address the challenges of traditional voting systems and enhance the integrity and transparency of the voting process through blockchain technology.

4.10 References:

- b. Provide a list of references, including academic literature, technical documentation, and online resources consulted during the planning and design phase of the project.

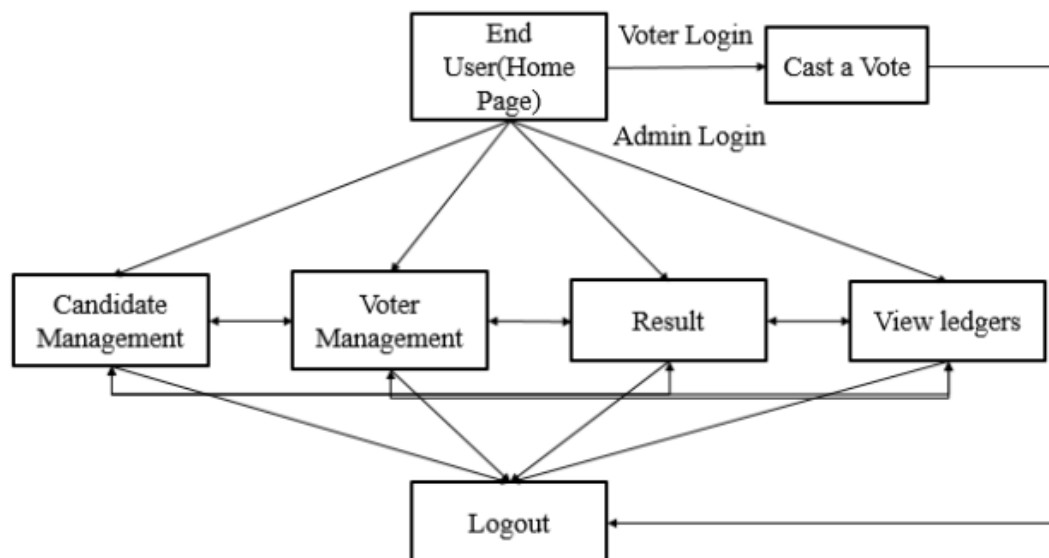


Fig:4.1: SYSTEM ARCHITECTURE

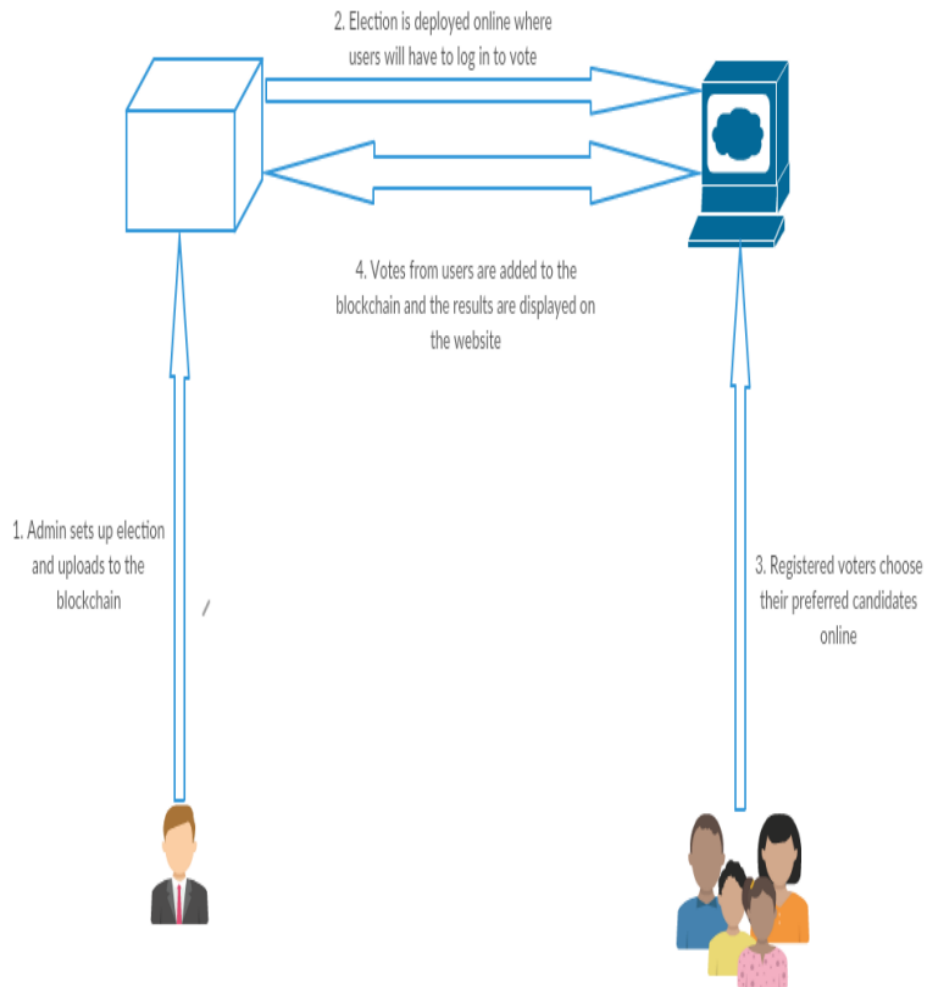


Fig:4.2: Conceptual Diagram

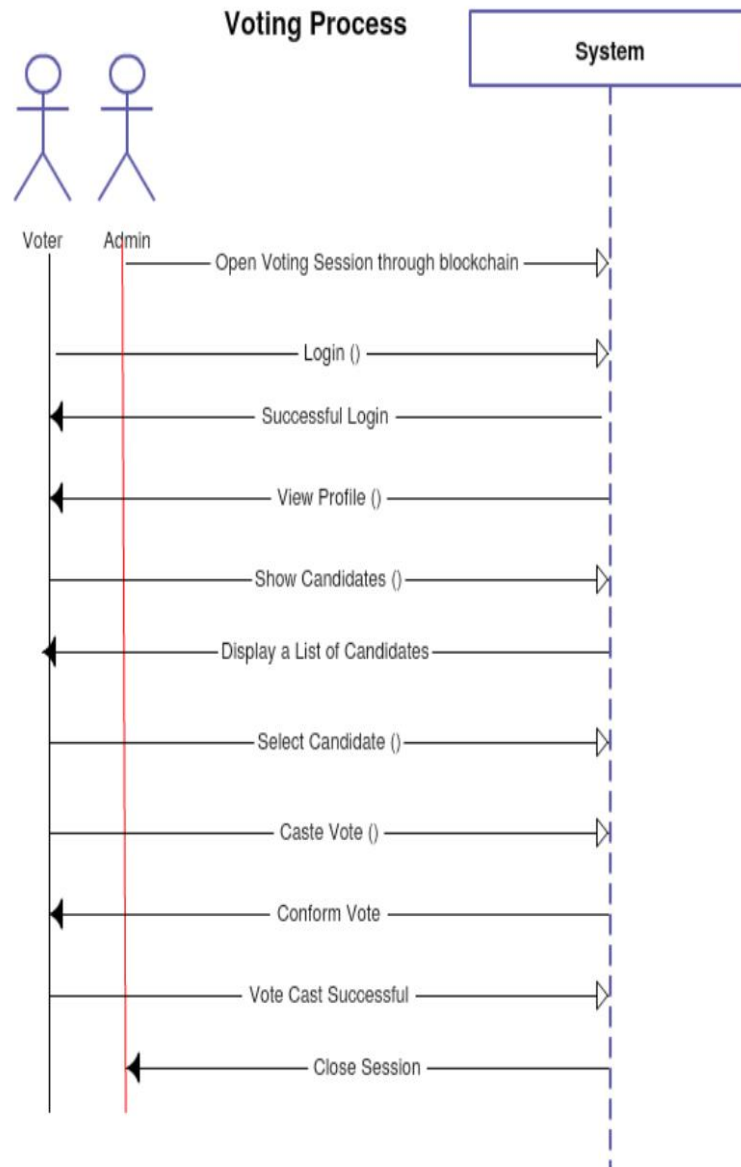


Fig:4.3: Sequence Diagram

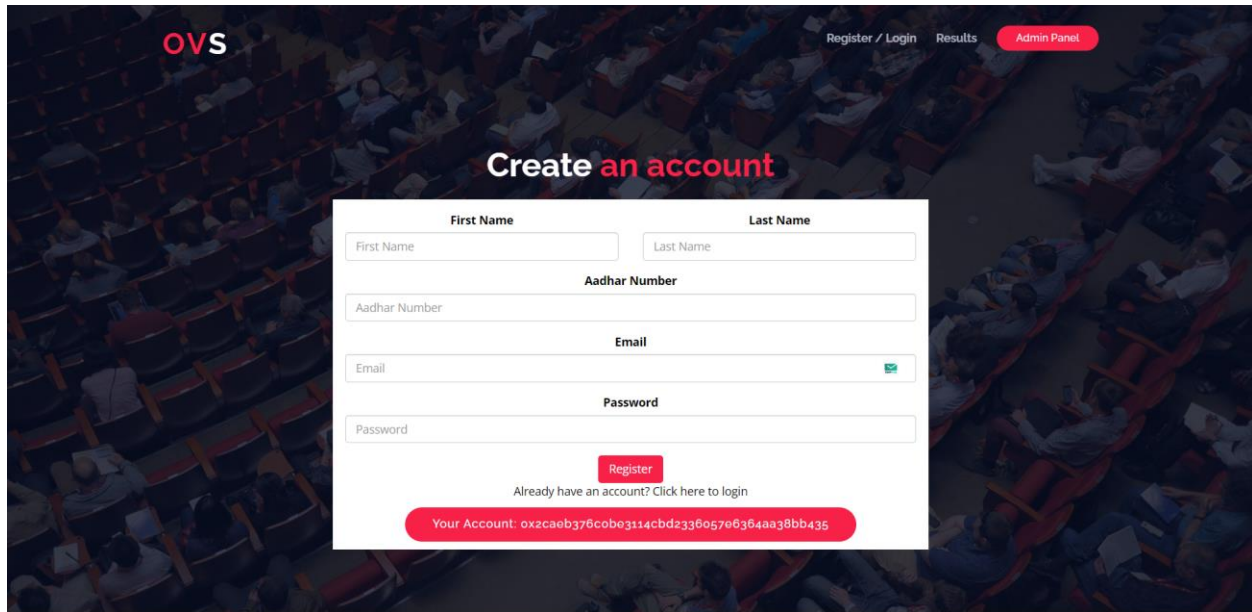
1. SOFTWARE REQUIREMENTS

Software	Type	Version
Windows	Operating System	7 or above
Visual Studio	Framework	1.76
Ganache	Ethereum Blockchain Server	2.4.0
MetaMask	Ethereum Wallet	7.7.9
Truffle	Development framework for ETH	5.1.31
Localhost	Server	

2. HARDWARE REQUIREMENTS

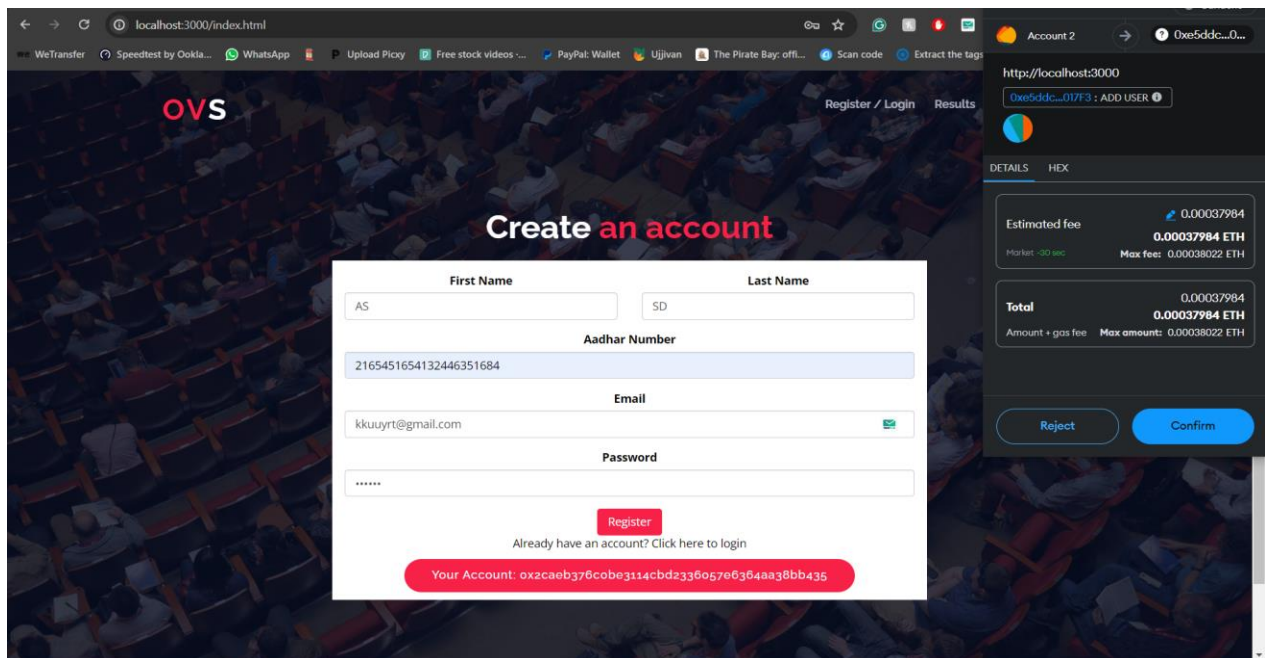
1. Processor: Intel Quad core 1.7 GHZ Processor or above.
2. HD: Minimum 10 GB of HD.
3. RAM: Minimum 4 GB of RAM

6. Results and Discussion:



The screenshot displays the OVS registration page. At the top left is the OVS logo. On the top right are links for 'Register / Login', 'Results', and an 'Admin Panel' button. The main heading is 'Create an account'. Below it is a registration form with the following fields: 'First Name' and 'Last Name' (each with a placeholder), 'Aadhar Number', 'Email' (with a green checkmark icon), and 'Password'. A red 'Register' button is positioned below the form. Under the button, it says 'Already have an account? Click here to login'. At the bottom of the form, a red box displays 'Your Account: 0x2caeb376c0be3114cbd2336057e6364aa38bb435'.

Figure 6.1. Registration Page



This screenshot shows the same registration page as Figure 6.1, but with a wallet connection overlay on the right side. The browser's address bar shows 'localhost:3000/index.html'. The wallet overlay includes a header with 'Account 2' and a dropdown menu. Below the header, it shows the URL 'http://localhost:3000' and a button '0xe5ddc...017f3 : ADD USER'. The overlay has two tabs: 'DETAILS' and 'HEX'. The 'DETAILS' tab is active, showing transaction information: 'Estimated fee' of 0.00037984 ETH, 'Market -30 sec' with a 'Max fee' of 0.00038022 ETH, and a 'Total' of 0.00037984 ETH (Amount + gas fee). At the bottom of the overlay are 'Reject' and 'Confirm' buttons. The registration form in the background is partially filled: 'First Name' is 'AS', 'Last Name' is 'SD', 'Aadhar Number' is '2165451654132446351684', 'Email' is 'kkuuyrt@gmail.com', and 'Password' is masked with asterisks. The 'Register' button and the account ID '0x2caeb376c0be3114cbd2336057e6364aa38bb435' are still visible.

Figure 6.2. Registration Page

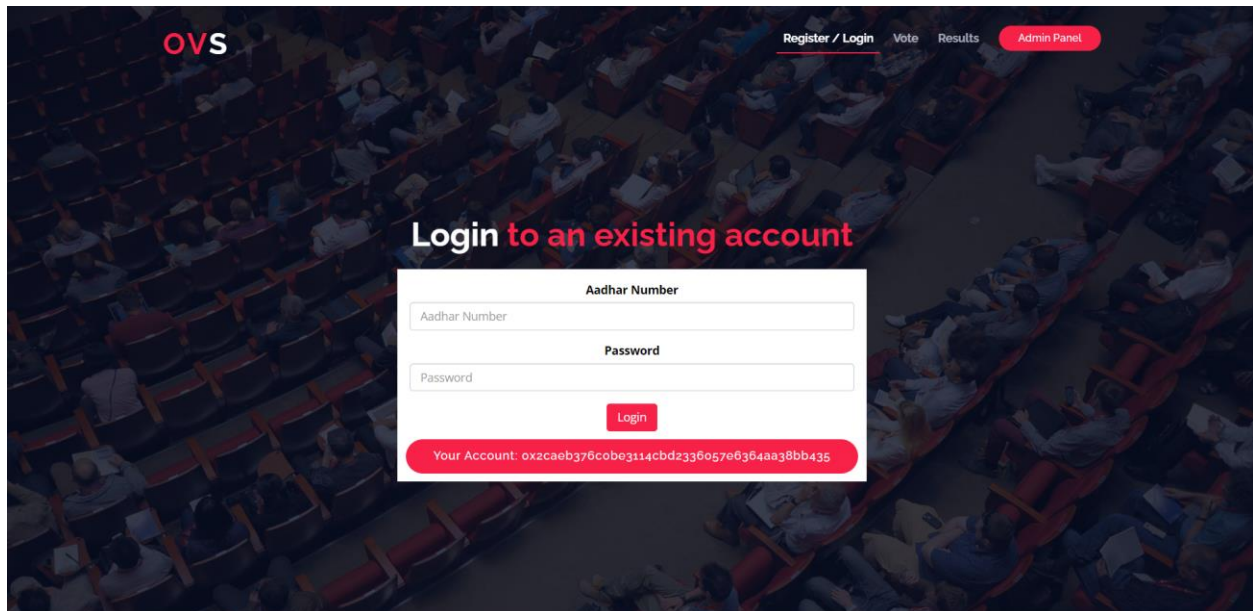


Figure 6.3. Login Page

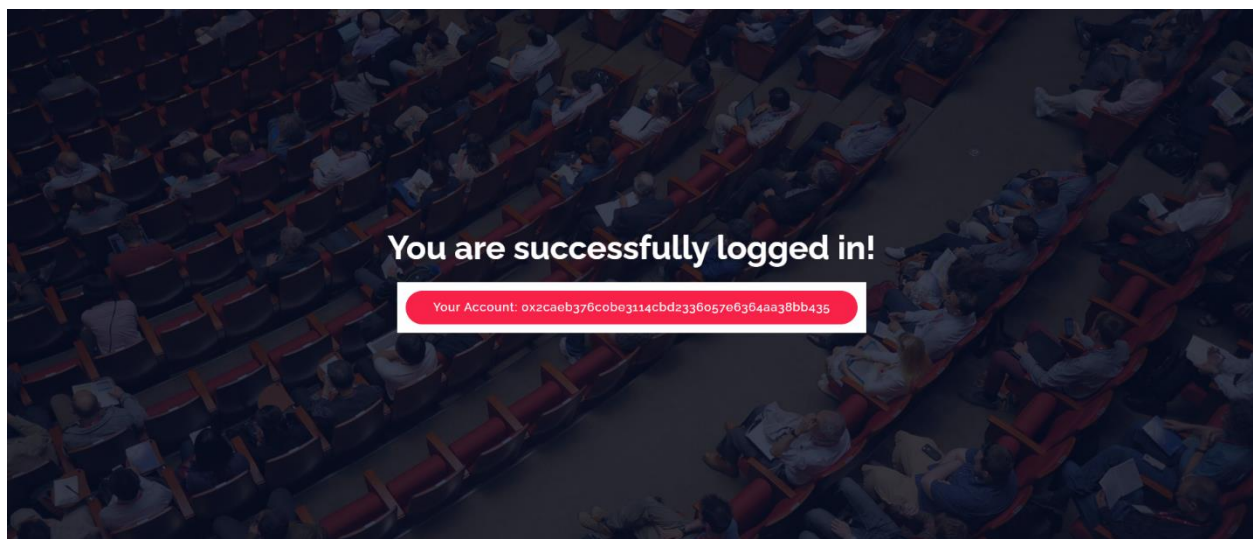


Figure 6.4. Successful Login page

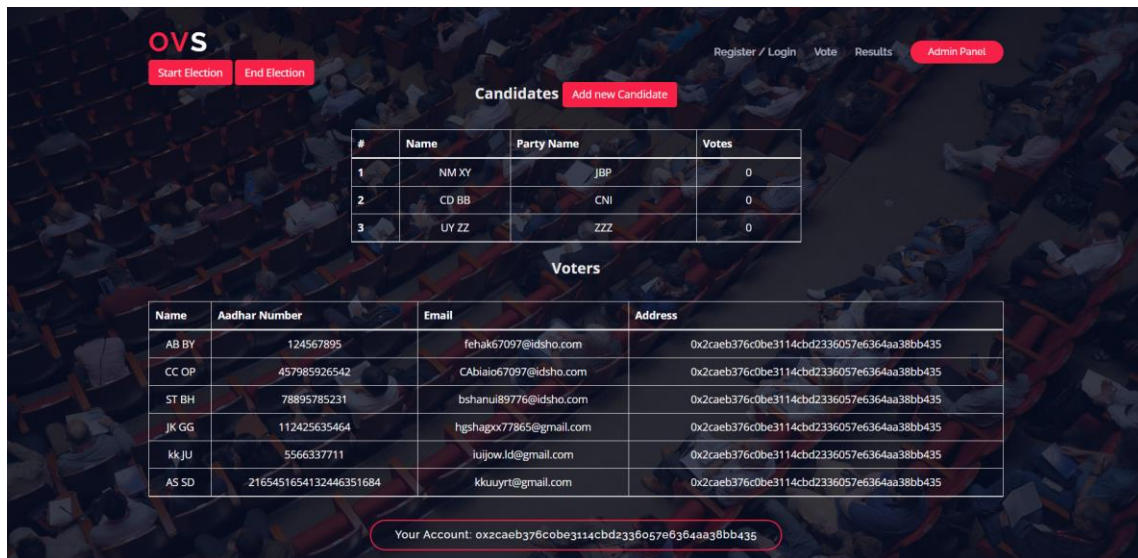


Figure 6.5. Admin Portal

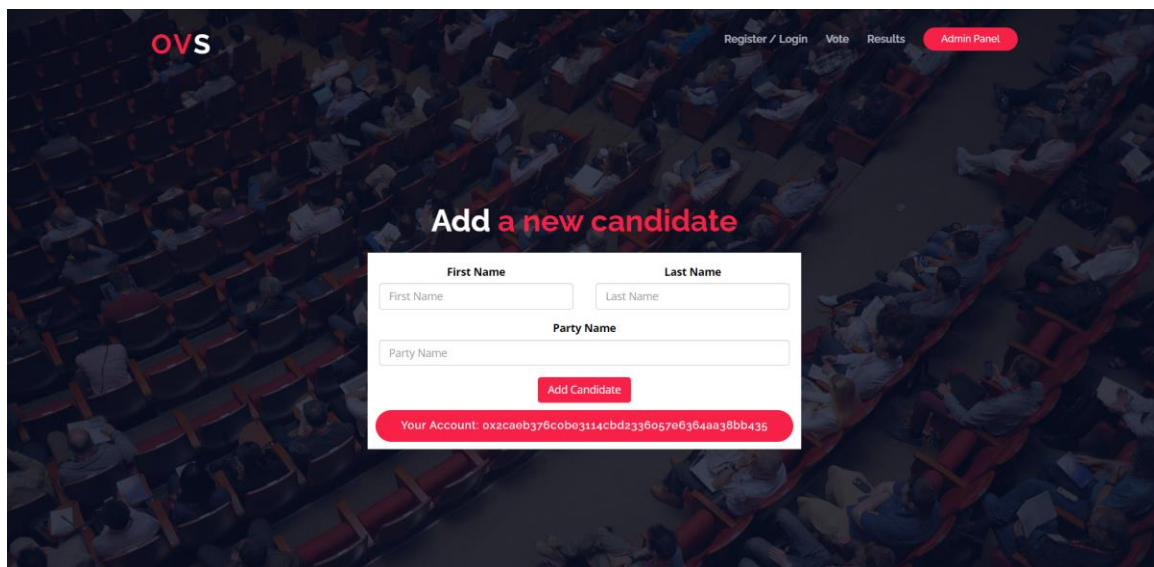


Figure 6.6. Candidate adding Portal for Admin

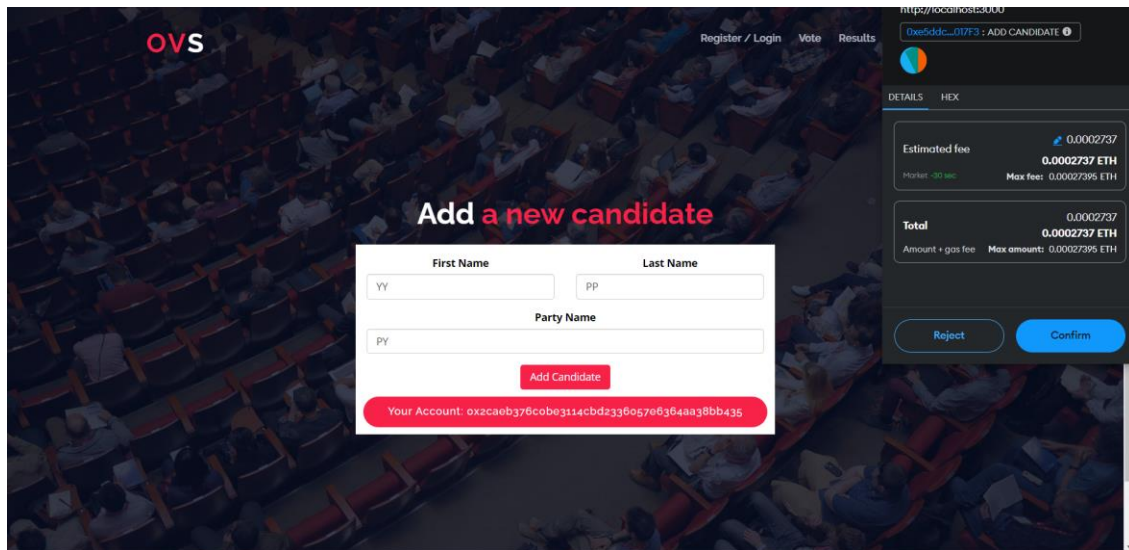


Figure 6.7. Adding Candidate

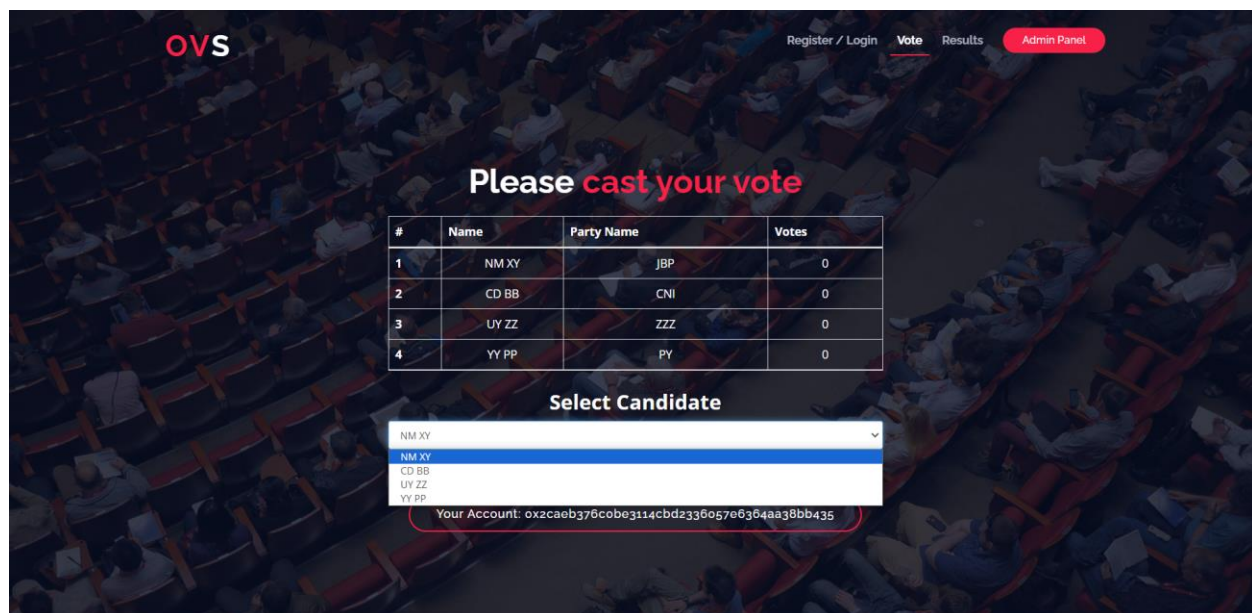


Figure 6.8 Voting page

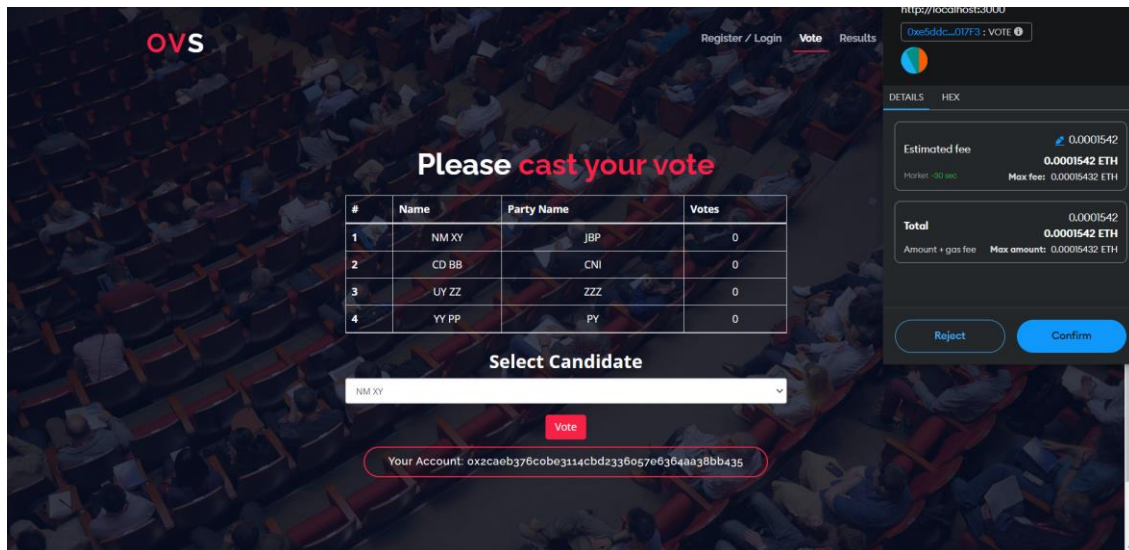


Figure 6.9. Casting Vote



Figure 6.12. Result

6.1. TESTING

Testing refers to examining the software system to identify errors and ensure that the system meets the requirements specifications. The approach in this case includes the Module testing and Integration System Testing. The module testing involved examining the memory dump of the program and using web console of the development browser. This technique was used to test each independent unit for proper functioning.

- Integration

The individually tested modules were integrated and tested together and errors and bugs collected and corrected.

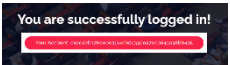
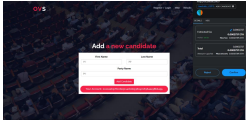


- System Testing

The entire system was tested and sample data was input to ensure the proper working of the system and that it meets the requirements of the system and that it is error free

- Software Testing

Test Case Matrix for the System

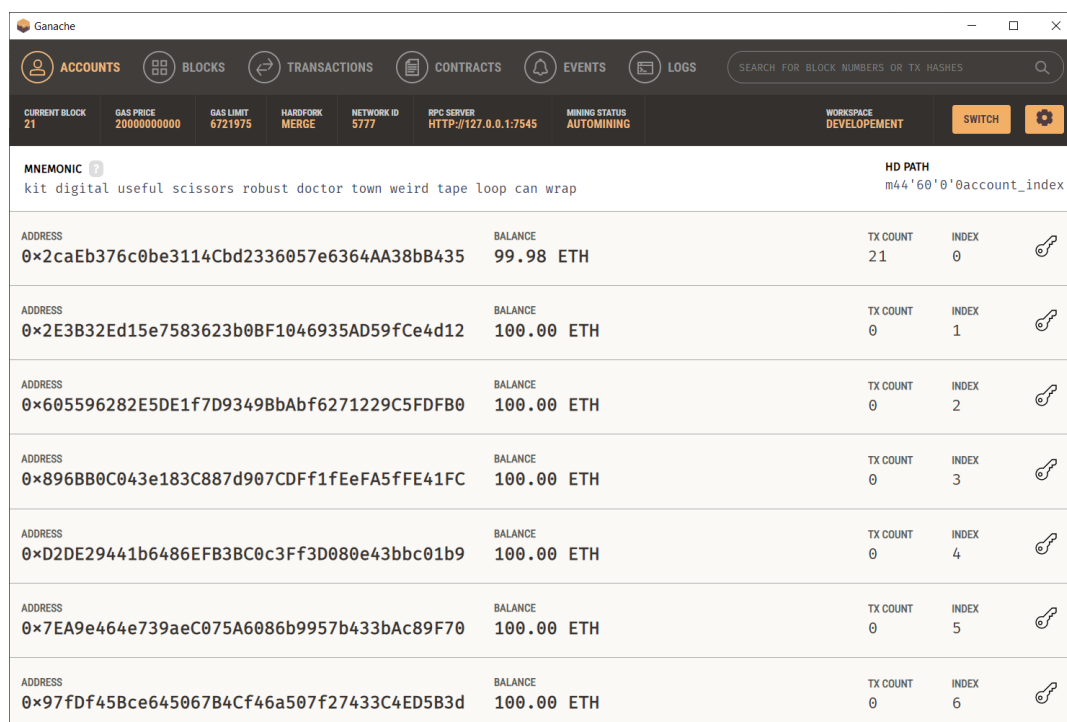
6.2. Test Table:

Test Case	Expected Results	Actual Result	Pass/Fail
Login In (Positive Match)	Should positively identify a user and redirect to a dashboard with specific rights that are appended to the user.	Positively identifies a user and redirects to voting page with information about the user. The user also is granted specific rights depending on level of access.	Pass 
Login In (Negative Match)	Should decline login request and display a reason why the request was declined.	Declines login request and displays the reason why the request was declined.	Pass
Add candidate	Should be able to add candidate into the voting process	Candidate details are displayed in the voting page where voters can choose.	Pass 
Vote	Should able to cast a vote for the preferred candidate.	Voters select their preferred candidate and click on vote. That candidates vote count increases by 1	Pass 
Check results	Should accurately show the tally of all the votes casted.	Once someone casts their vote they are taken to the results page which shows a real time vote tally	Pass 
Cannot vote twice	Should prevent users from casting a second vote once they have already voted.	The select candidate option and vote button disappears once a candidate has casted their vote.	Pass

6.3. FEATURES PROVIDED BY THE SOFTWARES:

6.3.1. GANACHE:

Ganache is a development tool in the Truffle Suite and is used for setting up a personal Ethereum Blockchain to deploy contracts, develop your applications, and run tests. It consists of details of the transaction such as hash value (Txn Hash), block number of the transaction, and transaction fee (Txn Fee), from address and to address.



The screenshot shows the Ganache application window. At the top, there is a navigation bar with icons for ACCOUNTS, BLOCKS, TRANSACTIONS, CONTRACTS, EVENTS, and LOGS. Below this is a status bar displaying various network metrics like CURRENT BLOCK, GAS PRICE, GAS LIMIT, HARDFORK, NETWORK ID, RPC SERVER, and MINING STATUS. The main area displays account information, including a mnemonic phrase and an HD path. Below this is a table listing several accounts with their addresses, balances, transaction counts, and indices.

ADDRESS	BALANCE	TX COUNT	INDEX
0x2caEb376c0be3114Cbd2336057e6364AA38bB435	99.98 ETH	21	0
0x2E3B32Ed15e7583623b0BF1046935AD59fCe4d12	100.00 ETH	0	1
0x605596282E5DE1f7D9349BbAbf6271229C5FDFB0	100.00 ETH	0	2
0x896BB0C043e183C887d907CDFf1fEeFA5fFE41FC	100.00 ETH	0	3
0xD2DE29441b6486EFB3BC0c3Ff3D080e43bbc01b9	100.00 ETH	0	4
0x7EA9e464e739aeC075A6086b9957b433bAc89F70	100.00 ETH	0	5
0x97fDf45Bce645067B4Cf46a507f27433C4ED5B3d	100.00 ETH	0	6

Fig.6.13. Ganache

TX HASH	FROM ADDRESS	TO CONTRACT ADDRESS	GAS USED	VALUE
0xb4f7efafeaf958690ff0b8c89d6de7ef22f64b63e885c1331b79149857fa9437	0x2caEb376c0be3114Cbd2336057e6364AA38bB435	0x654660Ee880Bbc9852FE3b67C4d80317969D1172	69392	0
0x04222c14038b1d12bf882c8d48918333450e2ed3824ef83d5c6ef7b675eafc3	0x2caEb376c0be3114Cbd2336057e6364AA38bB435	0x654660Ee880Bbc9852FE3b67C4d80317969D1172	182822	0
0x1d5fd5f770f85f53643eb80222280c625547f521257ede44bfb000578f1882c0	0x2caEb376c0be3114Cbd2336057e6364AA38bB435	0x654660Ee880Bbc9852FE3b67C4d80317969D1172	123131	0
0xe58944c29b9fe18fe2254028c3cd6e047424376a6e24fb3a307f4a0d5cbb5e8e	0x2caEb376c0be3114Cbd2336057e6364AA38bB435	0x654660Ee880Bbc9852FE3b67C4d80317969D1172	140243	0
0x84932ffa4ccdabc6533e575b9cfa58e12ce59f903cc7f197adc8d736c6003446				

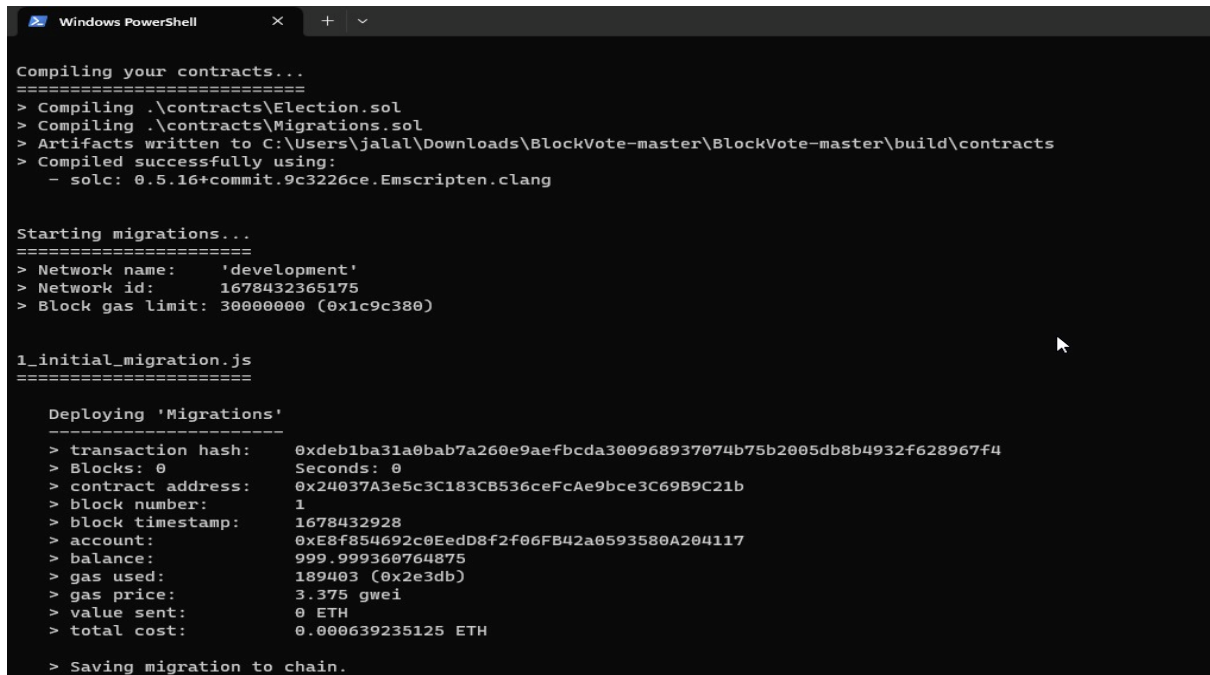
Fig. 6.14. Ganache Transactions

BLOCK	MINED ON	GAS USED
21	2024-04-22 20:58:12	69392
20	2024-04-22 20:57:23	182822
19	2024-04-22 20:55:47	123131
18	2024-04-22 20:54:32	140243
17	2024-04-21 01:57:05	28663
16	2024-04-21 01:57:05	1226677
15	2024-04-21 01:57:05	45763
14	2024-04-21 01:57:05	226525
13	2024-04-21 01:46:54	69392
12	2024-04-21 01:46:38	165674

Fig.6.15. Ganache Blocks

6.3.2. TRUFFLE:

Truffle is a development environment utilizing the EVM (Ethereum Virtual Machine) as a basis. The environment specializes in smart contract development. This environment features several great functionalities that help App developers and is used to deploy/execute the smart contracts.

A screenshot of a Windows PowerShell terminal window. The window title is "Windows PowerShell". The output shows the Truffle compilation process, migration start, and deployment details for a migration named "1_initial_migration.js".

```
Compiling your contracts...
=====
> Compiling .\contracts\Election.sol
> Compiling .\contracts\Migrations.sol
> Artifacts written to C:\Users\jalal\Downloads\BlockVote-master\BlockVote-master\build\contracts
> Compiled successfully using:
  - solc: 0.5.16+commit.9c3226ce.Emscripten.clang

Starting migrations...
=====
> Network name:      'development'
> Network id:       1678432365175
> Block gas limit: 30000000 (0x1c9c380)

1_initial_migration.js
=====

Deploying 'Migrations'
-----
> transaction hash:  0xdeb1ba31a0bab7a260e9aefbcda300968937074b75b2005db8b4932f628967f4
> Blocks: 0         Seconds: 0
> contract address: 0x24037A3e5c3C183CB536ceFcAe9bce3C69B9C21b
> block number:     1
> block timestamp:  1678432928
> account:          0xE8f854692c0EedD8f2f06FB42a0593580A204117
> balance:          999.999360764875
> gas used:         189403 (0x2e3db)
> gas price:        3.375 gwei
> value sent:       0 ETH
> total cost:       0.000639235125 ETH

> Saving migration to chain.
```

Fig 6.15. Truffle Migration

6.3.3. METAMASK:

MetaMask is a software cryptocurrency wallet used to interact with the Ethereum blockchain. It allows users to access their Ethereum wallet through a browser extension or mobile app, which can then be used to interact with decentralized applications.

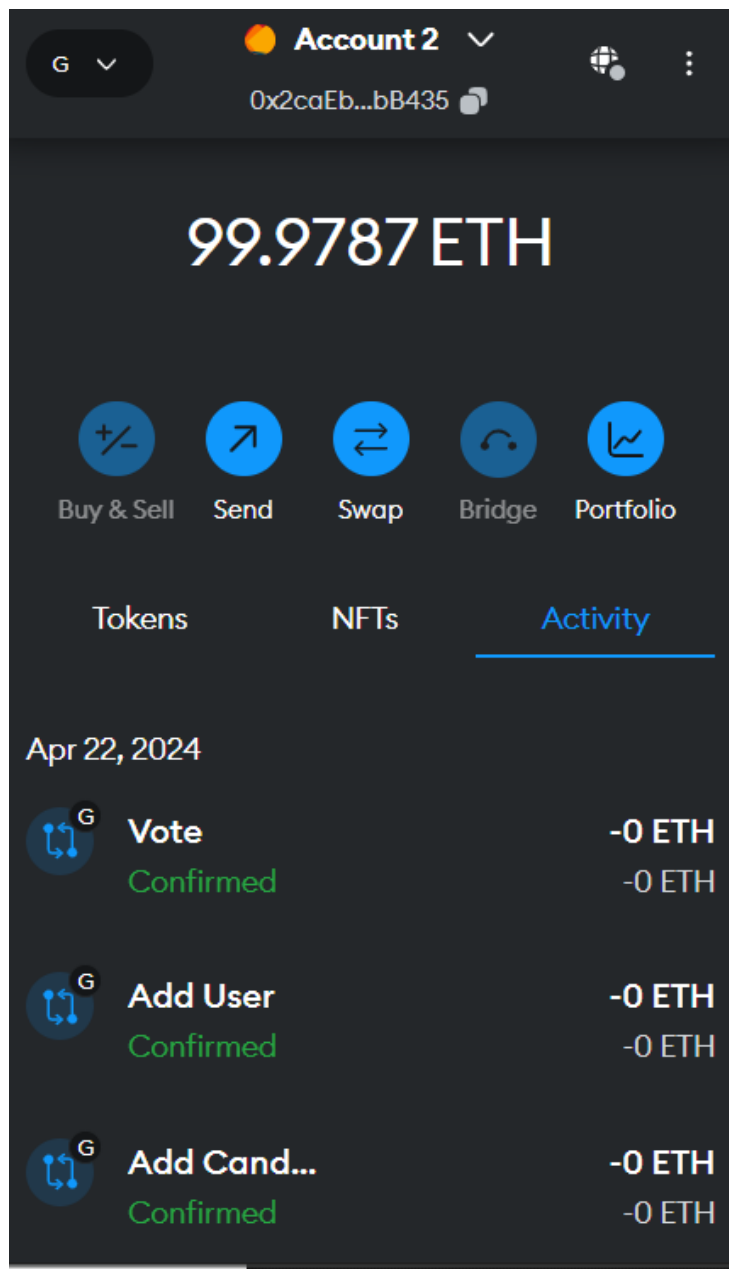


Fig 6.16. Metamask Wallet

6.3.4. Code Implementation:

```
contracts > Election.sol
Click here to ask Blackbox to help you code faster

1
2 pragma solidity >=0.5.0 <0.9.0;
3
4 contract Election{
5
6     address public manager;
7
8     struct Candidate {
9         uint id;
10        string _firstName;
11        string _lastName;
12        string _cidNumber;
13        uint voteCount;
14    }
15
16    mapping (address => bool) public voters;
17
18    mapping (uint => Candidate) public candidates;
19
20    uint public candidatesCount;
21
22    event votedEvent (
23        uint indexed_candidateId
24    );
25
26
27    constructor () public {
28        manager = msg.sender;
29    }
30
31    function addCandidate (string memory _firstName, string memory _lastName, string memory _cidNumber) public onlyAdmin{
32        candidatesCount++;
33        candidates[candidatesCount] = Candidate(candidatesCount, _firstName, _lastName, _cidNumber, 0);
34    }
35
36    modifier onlyAdmin () {
37        require(msg.sender == manager);
38        _;
39    }
```

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```

contracts > Election.sol
4  contract Election{
5      //users
6      //register
7      struct User {
8          string firstName;
9          string lastName;
10         string idNumber;
11         string email;
12         string password;
13         address add;
14     }
15     mapping (uint => User) public users;
16     uint public usersCount;
17     function addUser (string memory _firstName, string memory _lastName, string memory _idNumber, string memory _email, string memory _password) public {
18         usersCount++;
19         users[usersCount] = User(_firstName, _lastName, _idNumber, _email, _password, msg.sender);
20     }
21     function vote (uint _candidateId) public {
22         require(!voters[msg.sender]);
23         require(_candidateId > 0 && _candidateId <= candidatesCount);
24         voters[msg.sender] = true;
25         candidates[_candidateId].voteCount ++;
26         uint candidateId = _candidateId;
27         emit votedEvent(_candidateId);
28     }
29 }
30
31 //users
32 //register
33 struct User {
34     string firstName;
35     string lastName;
36     string idNumber;
37     string email;
38     string password;
39     address add;
40 }
41 mapping (uint => User) public users;
42 uint public usersCount;
43 function addUser (string memory _firstName, string memory _lastName, string memory _idNumber, string memory _email, string memory _password) public {
44     usersCount++;
45     users[usersCount] = User(_firstName, _lastName, _idNumber, _email, _password, msg.sender);
46 }
47
48
49
50
51
52
53
54
55
56
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```

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```

contracts > Migrations.sol
Click here to ask Blackbox to help you code faster
1
2  pragma solidity >=0.5.0 <0.9.0;
3
4  contract Migrations {
5      address public owner;
6      uint public last_completed_migration;
7
8      modifier restricted() {
9          if (msg.sender == owner) _;
10     }
11
12     constructor() public {
13         owner = msg.sender;
14     }
15
16     function setCompleted(uint completed) public restricted {
17         last_completed_migration = completed;
18     }
19
20     function upgrade(address new_address) public restricted {
21         Migrations upgraded = Migrations(new_address);
22         upgraded.setCompleted(last_completed_migration);
23     }
24 }
25

```



```

src > admin.html > html > body > section#intro > div.intro-container.wow.fadeIn > div.container > div#content > table.container.table.table-sm.table-bordered > thead.thead-dark > tr
Click here to ask Blackbox to help you code faster
1 <!DOCTYPE html>
2 <html lang="en">
3 <head>
4   <meta charset="utf-8">
5   <meta content="IE=edge" http-equiv="X-UA-Compatible">
6   <meta content="width=device-width, initial-scale=1" name="viewport">
7   <!-- The above 3 meta tags *must* come first in the head; any other head content must come *after* these tags -->
8   <title>The Election Commission of India</title>
9
10  <!-- Bootstrap -->
11  <link href="css/bootstrap.min.css" rel="stylesheet">
12
13  <!-- Favicons -->
14  <link href="images/favicon.png" rel="icon">
15
16  <!-- Google Fonts -->
17  <link href="https://fonts.googleapis.com/css?family=Open+Sans:300,300i,400,400i,700,700i|Raleway:300,400,500,700,800" rel="stylesheet">
18
19  <!-- Libraries CSS Files -->
20  <link href="others/font-awesome/css/font-awesome.min.css" rel="stylesheet">
21  <link href="others/animate/animate.min.css" rel="stylesheet">
22  <link href="others/venobox/venobox.css" rel="stylesheet">
23  <link href="others/owlcarousel/assets/owl.carousel.min.css" rel="stylesheet">
24  <link crossorigin="anonymous" href="https://use.fontawesome.com/releases/v5.8.1/css/all.css" integrity="sha384-50oBUHEmvpQ+11w4y57PTFmhCaX
25
26  <!-- Other Stylesheet File -->
27  <link href="css/style.css" rel="stylesheet">
28
29  <!-- HTML5 shim and Respond.js for IE8 support of HTML5 elements and media queries -->
30  <!-- WARNING: Respond.js doesn't work if you view the page via file:// -->
31  <!--[if lt IE 9]>
32  <script src="https://oss.maxcdn.com/html5shiv/3.7.3/html5shiv.min.js"></script>
33  <script src="https://oss.maxcdn.com/respond/1.4.2/respond.min.js"></script>
34  <![endif]-->
35 </head>
36 <body>
37

```

```

38 <!-- =====
39 Header
40 =====>
41 <header id="header">
42   <div class="container">
43     <div class="pull-left id="logo">
44       <!-- Uncomment below if you prefer to use a text logo -->
45       <h1><a><span>The Election Commission</span> of India</a></h1>
46       <button type="button" class="btn" style="background-color: #f82249; color: white" onclick="App.startElection(); return false">Start Election
47       <button type="button" class="btn" style="background-color: #f82249; color: white" onclick="App.endElection(); return false">End Election
48     </div>
49
50     <div class="display">
51       <h1 class="display_time-left" style="color: white"></h1>
52       <h1 class="display_end-time" style="color: white"></h1>
53     </div>
54
55     <nav id="nav-menu-container">
56       <ul class="nav-menu">
57         <li class="reg"><a href="index.html">Register / Login</a></li>
58         <li class="vot"><a href="vote.html">Vote</a></li>
59         <li class="res"><a href="results.html">Results</a></li>
60         <li class="buy-tickets"><a href="admin.html">Admin Panel</a>
61       </li>
62     </ul>
63   </nav><!-- #nav-menu-container -->
64 </div>
65 </header><!-- #header -->
66
67 <!-- =====
68 Intro Section
69 =====>
70 <section id="intro">
71   <div class="intro-container wow fadeIn">
72     <h1 style="text-transform: initial">Admin Panel</h1>
73   </div>
74

```

```

src > admin.html > html > body > section#intro > div.intro-container.wow.fadeIn > div.container > div#content > table.container.table.table-sm.table-bordered > thead.thead-dark > tr
2  <html lang="en">
36 </body>
72 <section id="intro">
73   <div class="intro-container wow fadeIn">
74     <div id="loader">
75       <svg class="loader" viewBox="0 0 340 340" xmlns="http://www.w3.org/2000/svg">
76         <circle cx="170" cy="170" r="160" stroke="#E2007C"/>
77         <circle cx="170" cy="170" r="135" stroke="#404041"/>
78         <circle cx="170" cy="170" r="110" stroke="#E2007C"/>
79         <circle cx="170" cy="170" r="85" stroke="#404041"/>
80       </svg> </div>
81     <div class="container">
82       <div id="content" style="display: none;">
83
84
85
86
87
88       <p>Candidates <button type="button" class="btn" style="background-color: #f82249; color: white" onclick="location.href='ar
89
90       <table class="container table table-sm table-bordered " style="color: white; width: 600px;">
91         <thead class="thead-dark">
92           <tr>
93             <th scope="col">#</th>
94             <th scope="col">Name</th>
95             <th scope="col">Party Name</th>
96             <th scope="col">Votes</th>
97           </tr>
98         </thead>
99         <tbody id="candidatesResults">
100           </tbody>
101       </table>
102
103
104       <p>Voters</p>
105       <table class="container table table-sm table-bordered " style="color: white;">
106         <thead class="thead-dark">
107           <tr>
108             <th scope="col">Name</th>

```

```

src > admin.html > html > body > section#intro > div.intro-container.wow.fadeIn > div.container > div#content > table.container.table.t
2 <html lang="en">
36 <body>
72 <section id="intro" >
73   <div class="intro-container wow fadeIn">
82     <div class="container">
100       <table>
109         <thead>
110           <th scope="col">Aadhar Number</th>
111           <th scope="col">Email</th>
112           <th scope="col">Address</th>
113         </thead>
114         <tbody id="voterz">
115         </tbody>
116       </table>
117
118
119
120
121       <a class="about-btn scrollTo" class="text-center" id="accountAddress"></a>
122     </div>
123   </div>
124 </div>
125 </section>
126
127 <!-- jQuery (necessary for Bootstrap's JavaScript plugins) -->
128 <script src="https://ajax.googleapis.com/ajax/libs/jquery/1.12.4/jquery.min.js"></script>
129 <!-- Include all compiled plugins (below), or include individual files as needed -->
130 <script src="js/bootstrap.min.js"></script>
131 <script src="js/web3.min.js"></script>
132 <script src="js/truffle-contract.js"></script>
133 <script src="js/app.js"></script>
134
135 <script src="others/jquery/jquery.min.js"></script>
136 <script src="others/jquery/jquery-migrate.min.js"></script>
137 <script src="others/bootstrap/js/bootstrap.bundle.min.js"></script>
138 <script src="others/easing/easing.min.js"></script>
139 <script src="others/superfish/hoverIntent.js"></script>
140 <script src="others/superfish/superfish.min.js"></script>
141 <script src="others/wow/wow.min.js"></script>
142 <script src="others/venobox/venobox.min.js"></script>

```

```
src > index.html > html > body > header#header > div.container > div#logo.pull-left > h1 > a > span
Click here to ask Blackbox to help you code faster
1 <!DOCTYPE html>
2 <html lang="en">
3 <head>
4 <meta charset="utf-8">
5 <meta http-equiv="X-UA-Compatible" content="IE=edge">
6 <meta name="viewport" content="width=device-width, initial-scale=1">
7 <!-- The above 3 meta tags *must* come first in the head; any other head content must come *after* these tags -->
8 <title>The Election Commission of India</title>
9
10 <!-- Bootstrap -->
11 <link href="css/bootstrap.min.css" rel="stylesheet">
12
13 <!-- Favicons -->
14 <link href="images/favicon.png" rel="icon">
15
16 <!-- Google Fonts -->
17 <link href="https://fonts.googleapis.com/css?family=Open+Sans:300,300i,400,400i,700,700i|Raleway:300,400,500,700,800" rel="stylesheet">
18
19 <!-- Libraries CSS Files -->
20 <link href="others/font-awesome/css/font-awesome.min.css" rel="stylesheet">
21 <link href="others/animate/animate.min.css" rel="stylesheet">
22 <link href="others/venobox/venobox.css" rel="stylesheet">
23 <link href="others/owlcarousel/assets/owl.carousel.min.css" rel="stylesheet">
24
25 <!-- Other Stylesheet File -->
26 <link href="css/style.css" rel="stylesheet">
27
28 <!-- HTML5 shim and Respond.js for IE8 support of HTML5 elements and media queries -->
29 <!-- WARNING: Respond.js doesn't work if you view the page via file:// -->
30 <!--[if lt IE 9]>
31 <script src="https://oss.maxcdn.com/html5shiv/3.7.3/html5shiv.min.js"></script>
32 <script src="https://oss.maxcdn.com/respond/1.4.2/respond.min.js"></script>
33 <![endif]-->
34 </head>
35 <body>
36
```

```
src > index.html > html > body > header#header > div.container > div#logo.pull-left > h1 > a > span
2 <html lang="en">
35 <body>
37 <!-- =====
38 | Header
39 | ===== -->
40 <header id="header">
41 <div class="container">
42
43 <div id="logo" class="pull-left">
44 <!-- Uncomment below if you prefer to use a text logo -->
45 <h1><a><span>The Election Commission </span> of India</a></h1>
46 </div>
47
48 <nav id="nav-menu-container">
49 <ul class="nav-menu">
50 <li class="reg" class="menu-active"><a href="index.html">Register / Login</a></li>
51 <li class="vot" style="display: none"><a href="vote.html">Vote</a></li>
52 <li><a href="results.html">Results</a></li>
53 <li class="buy-tickets"><a href="admin.html">Admin Panel</a></li>
54 </ul>
55 </nav><!-- #nav-menu-container -->
56 </div>
57 </header><!-- #header -->
58
59 <!-- =====
60 | Intro Section
61 | ===== -->
62 <section id="intro">
63 <div class="intro-container wow fadeIn">
64 <h1 style="text-transform: initial" id="index-text">Create<span> an account</span></h1>
65 <div id="loader">
66 <svg class="loader" xmlns="http://www.w3.org/2000/svg" viewBox="0 0 340 340">
67 <circle cx="170" cy="170" r="160" stroke="#E2007C"/>
68 <circle cx="170" cy="170" r="135" stroke="#404041"/>
69 <circle cx="170" cy="170" r="110" stroke="#E2007C"/>
70 <circle cx="170" cy="170" r="85" stroke="#404041"/>
71 </svg> </div>
72 <div id="content" style="display: none; background-color: white; color: black;">
```

```

71 </svg> </div>
72 <div id="content" style="display: none; background-color: ■white; color: □black;">
73
74
75 <form onSubmit="App.addUser(); return false;" >
76 <div class="form-row" style="padding-top: 15px">
77 <div class="form-group col-md-6">
78 <label for="firstName">First Name</label>
79 <input type="text" class="form-control" id="firstName" placeholder="First Name" required>
80 </div>
81 <div class="form-group col-md-6">
82 <label for="lastName">Last Name</label>
83 <input type="text" class="form-control" id="lastName" placeholder="Last Name" required>
84 </div>
85 </div>
86 <div class="form-group col-lg-12">
87 <label for="idNumber">Aadhar Number</label>
88 <input type="text" class="form-control" id="idNumber" placeholder="Aadhar Number" required>
89 </div>
90 <div class="form-group col-lg-12">
91 <label for="email">Email</label>
92 <input type="email" class="form-control" id="email" placeholder="Email" required>
93 </div>
94 <div class="form-group col-lg-12">
95 <label for="password">Password</label>
96 <input type="password" class="form-control" id="password" placeholder="Password" required>
97 </div>
98 <button type="submit" class="btn " style="background-color: ■#f82249; color: ■white">Register</button>
99 <div ><a href="login.html" style="color: □black"> Already have an account? Click here to login</a></div>
100 </form>
101 <a class="about-btn scrollTo" id="accountAddress" class="text-center" style="background-color: ■#f82249; color: ■white"></a>
102 </div>
103 </div>
104 </section>

```

```

src > index.html > html > body > header#header > div.container > div#logo.pull-left > h1 > a > span
2 <html lang="en">
35 <body>
62 <section id="intro">
63 <div class="intro-container wow fadeIn">
72 <div id="content" style="display: none; background-color: ■white; color: □black;">
94 <div class="form-group col-lg-12">
95 <label for="password">Password</label>
96 <input type="password" class="form-control" id="password" placeholder="Password" required>
97 </div>
98 <button type="submit" class="btn " style="background-color: ■#f82249; color: ■white">Register</button>
99 <div ><a href="login.html" style="color: □black"> Already have an account? Click here to login</a></div>
100 </form>
101 <a class="about-btn scrollTo" id="accountAddress" class="text-center" style="background-color: ■#f82249; color: ■white"></a>
102 </div>
103 </div>
104 </section>
105
106 <!-- jQuery (necessary for Bootstrap's JavaScript plugins) -->
107 <script src="https://ajax.googleapis.com/ajax/libs/jquery/1.12.4/jquery.min.js"></script>
108 <!-- Include all compiled plugins (below), or include individual files as needed -->
109 <script src="js/bootstrap.min.js"></script>
110 <script src="js/web3.min.js"></script>
111 <script src="js/truffle-contract.js"></script>
112 <script src="js/app.js"></script>
113
114 <script src="others/jquery/jquery.min.js"></script>
115 <script src="others/jquery/jquery-migrate.min.js"></script>
116 <script src="others/bootstrap/js/bootstrap.bundle.min.js"></script>
117 <script src="others/easing/easing.min.js"></script>
118 <script src="others/superfish/hoverIntent.js"></script>
119 <script src="others/superfish/superfish.min.js"></script>
120 <script src="others/wow/wow.min.js"></script>
121 <script src="others/venobox/venobox.min.js"></script>
122 <script src="others/owlcarousel/owl.carousel.min.js"></script>
123 <!-- Main Javascript file -->
124 <script src="js/main.js"></script>
125 </body>
126 </html>
127

```

Click here to ask Blackbox to help you code faster

```
1 <!DOCTYPE html>
2 <html lang="en">
3 <head>
4   <meta charset="utf-8">
5   <meta http-equiv="X-UA-Compatible" content="IE=edge">
6   <meta name="viewport" content="width=device-width, initial-scale=1">
7   <!-- The above 3 meta tags *must* come first in the head; any other head content must come *after* these tags -->
8   <title>Election Results</title>
9
10  <!-- Bootstrap -->
11  <link href="css/bootstrap.min.css" rel="stylesheet">
12
13  <!-- HTML5 shim and Respond.js for IE8 support of HTML5 elements and media queries -->
14  <!-- WARNING: Respond.js doesn't work if you view the page via file:// -->
15  <!--[if lt IE 9]>
16  <script src="https://oss.maxcdn.com/html5shiv/3.7.3/html5shiv.min.js"></script>
17  <script src="https://oss.maxcdn.com/respond/1.4.2/respond.min.js"></script>
18  <![endif]-->
19 </head>
20 <body>
21 <div class="container" style="width: 650px;">
22   <div class="row">
23     <div class="col-lg-12">
24       <h1 class="text-center">Election Results</h1>
25       <hr/>
26       <br/>
27       <div id="loader">
28         <p class="text-center">Loading...</p>
29       </div>
30       <div id="content" style="display: none;">
31         <table class="table">
32           <thead>
33             <tr>
34               <th scope="col">#</th>
35               <th scope="col">Name</th>
36               <th scope="col">Votes</th>
37             </tr>
38           </thead>
39           <tbody id="candidatesResults">
```

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```

src > index2.html > ...
 2  <html lang="en">
20  <body>
21  <div class="container" style="width: 650px;">
22    <div class="row">
23      <div class="col-lg-12">
37        </tr>
38        </thead>
39        <tbody id="candidatesResults">
40        </tbody>
41      </table>
42      <hr/>
43      <form onSubmit="App.castVote(); return false;">
44        <div class="form-group">
45          <label for="candidatesSelect">Select Candidate</label>
46          <select class="form-control" id="candidatesSelect">
47          </select>
48        </div>
49        <button type="submit" class="btn btn-primary">Vote</button>
50      <hr />
51    </form>
52    <p id="accountAddress" class="text-center"></p>
53  </div>
54 </div>
55 </div>
56 </div>
57
58 <!-- jQuery (necessary for Bootstrap's JavaScript plugins) -->
59 <script src="https://ajax.googleapis.com/ajax/libs/jquery/1.12.4/jquery.min.js"></script>
60 <!-- Include all compiled plugins (below), or include individual files as needed -->
61 <script src="js/bootstrap.min.js"></script>
62 <script src="js/web3.min.js"></script>
63 <script src="js/truffle-contract.js"></script>
64 <script src="js/app.js"></script>
65 </body>
66 </html>
67

```

```
src > login.html > html > head > meta
Click here to ask Blackbox to help you code faster
1 <!DOCTYPE html>
2 <html lang="en">
3 <head>
4   <meta charset="utf-8">
5   <meta http-equiv="X-UA-Compatible" content="IE=edge">
6   <meta name="viewport" content="width=device-width, initial-scale=1">
7   <!-- The above 3 meta tags *must* come first in the head; any other head content must come *after* these tags -->
8   <title>The Election Commission of India</title>
9
10  <!-- Bootstrap -->
11  <link href="css/bootstrap.min.css" rel="stylesheet">
12
13  <!-- Favicons -->
14  <link href="images/favicon.png" rel="icon">
15
16  <!-- Google Fonts -->
17  <link href="https://fonts.googleapis.com/css?family=Open+Sans:300,300i,400,400i,700,700i|Raleway:300,400,500,700,
18
19  <!-- Libraries CSS Files -->
20  <link href="others/font-awesome/css/font-awesome.min.css" rel="stylesheet">
21  <link href="others/animate/animate.min.css" rel="stylesheet">
22  <link href="others/venobox/venobox.css" rel="stylesheet">
23  <link href="others/owlcarousel/assets/owl.carousel.min.css" rel="stylesheet">
24
25  <!-- Other Stylesheet File -->
26  <link href="css/style.css" rel="stylesheet">
27
28  <!-- HTML5 shim and Respond.js for IE8 support of HTML5 elements and media queries -->
29  <!-- WARNING: Respond.js doesn't work if you view the page via file:// -->
30  <!--[if lt IE 9]>
31  <script src="https://oss.maxcdn.com/html5shiv/3.7.3/html5shiv.min.js"></script>
32  <script src="https://oss.maxcdn.com/respond/1.4.2/respond.min.js"></script>
33  <![endif]-->
34 </head>
35 <body>
36
37 <!--=====
38   Header
39
```

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```

src > login.html > html > body
2 <html lang="en">
35 <body>
40 <header id="header">
41 <div class="container">
42
43 <div id="logo" class="pull-left">
44 <!-- Uncomment below if you prefer to use a text logo -->
45 <h1><a><span>The Election Commission </span> of India</a></h1>
46 </div>
47
48 <nav id="nav-menu-container">
49 <ul class="nav-menu">
50 <li class="menu-active" class="reg"><a href="index.html" >Register / Login</a></li>
51 <li class="vot" ><a href="vote.html" >Vote</a></li>
52 <li><a href="results.html" >Results</a></li>
53 <li class="buy-tickets"><a href="admin.html">Admin Panel</a></li>
54 </ul>
55 </nav><!-- #nav-menu-container -->
56 </div>
57 </header><!-- #header -->
58
59 <!--=====
60 Intro Section
61 =====>
62 <section id="intro">
63 <div class="intro-container wow fadeIn">
64 <h1 style="text-transform: initial" class= >Login<span> to an existing account</span></h1>
65 <div id="loader">
66 <svg class="loader" xmlns="http://www.w3.org/2000/svg" viewBox="0 0 340 340">
67 <circle cx="170" cy="170" r="160" stroke="#E2007C"/>
68 <circle cx="170" cy="170" r="135" stroke="#404041"/>
69 <circle cx="170" cy="170" r="110" stroke="#E2007C"/>
70 <circle cx="170" cy="170" r="85" stroke="#404041"/>
71 </svg> </div>
72 <div id="content" style="display: none; background-color: ■white; color: □black;">
73 <form onSubmit="App.login(); return false;">
74 <div class="form-group col-lg-12" style="padding-top: 15px">
75 <label for="lidNumber" >Aadhar Number</label>
76 <input type="text" class="form-control" id="lidNumber" placeholder="Aadhar Number" >

```

```
index.html M  index2.html  login.html M  results.html M  vote.html M  Election.sol M  Migrations.sol M  JS truffle-config.js M  D  Q
src > login.html > html > body
2  <html lang="en">
35 <body>
62 <section id="intro">
63   <div class="intro-container wow fadeIn">
72     <div id="content" style="display: none; background-color: #white; color: #black;">
74       <div class="form-group col-lg-12" style="padding-top: 15px">
75         <label for="lidNumber" >Aadhar Number</label>
76         <input type="text" class="form-control" id="lidNumber" placeholder="Aadhar Number" >
77       </div>
78       <div class="form-group col-lg-12">
79         <label for="lpassword">Password</label>
80         <input type="password" class="form-control" id="lpassword" placeholder="Password" >
81       </div>
82       <button type="submit" class="btn " style="background-color: #f82249; color: #white" a href="login.html"> <a style="color: #
83     </form>
84     <a class="about-btn scrollTo" id="accountAddress" class="text-center" style="background-color: #f82249; color: #white"></a>
85   </div>
86 </div>
87 </section>
88
89 <!-- jQuery (necessary for Bootstrap's JavaScript plugins) -->
90 <script src="https://ajax.googleapis.com/ajax/libs/jquery/1.12.4/jquery.min.js"></script>
91 <!-- Include all compiled plugins (below), or include individual files as needed -->
92 <script src="js/bootstrap.min.js"></script>
93 <script src="js/web3.min.js"></script>
94 <script src="js/truffle-contract.js"></script>
95 <script src="js/app.js"></script>
96
97 <script src="others/jquery/jquery.min.js"></script>
98 <script src="others/jquery/jquery-migrate.min.js"></script>
99 <script src="others/bootstrap/js/bootstrap.bundle.min.js"></script>
100 <script src="others/easing/easing.min.js"></script>
101 <script src="others/superfish/hoverIntent.js"></script>
102 <script src="others/superfish/superfish.min.js"></script>
103 <script src="others/wow/wow.min.js"></script>
104 <script src="others/venobox/venobox.min.js"></script>
105 <script src="others/owlcarousel/owl.carousel.min.js"></script>
106 <!-- Main Javascript File -->
107 <script src="js/main.js"></script>
```

```
src > results.html > html > body > header#header > div.container > div#logo.pull-left > h1 > a > span
Click here to ask Blackbox to help you code faster
1 <!DOCTYPE html>
2 <html lang="en">
3 <head>
4   <meta charset="utf-8">
5   <meta http-equiv="X-UA-Compatible" content="IE=edge">
6   <meta name="viewport" content="width=device-width, initial-scale=1">
7   <!-- The above 3 meta tags *must* come first in the head; any other head content must come *after* these tags -->
8   <title>The Election Commission of India</title>
9
10  <!-- Bootstrap -->
11  <link href="css/bootstrap.min.css" rel="stylesheet">
12
13  <!-- Favicons -->
14  <link href="images/favicon.png" rel="icon">
15
16  <!-- Google Fonts -->
17  <link href="https://fonts.googleapis.com/css?family=Open+Sans:300,300i,400,400i,700,700i|Raleway:300,400,500,700,800" rel="stylesheet">
18
19  <!-- Libraries CSS Files -->
20  <link href="others/font-awesome/css/font-awesome.min.css" rel="stylesheet">
21  <link href="others/animate/animate.min.css" rel="stylesheet">
22  <link href="others/venobox/venobox.css" rel="stylesheet">
23  <link href="others/owlcarousel/assets/owl.carousel.min.css" rel="stylesheet">
24
25  <!-- Other Stylesheet File -->
26  <link href="css/style.css" rel="stylesheet">
27
28  <!-- HTML5 shim and Respond.js for IE8 support of HTML5 elements and media queries -->
29  <!-- WARNING: Respond.js doesn't work if you view the page via file:// -->
30  <!--[if lt IE 9]>
31  <script src="https://oss.maxcdn.com/html5shiv/3.7.3/html5shiv.min.js"></script>
32  <script src="https://oss.maxcdn.com/respond/1.4.2/respond.min.js"></script>
33  <![endif]-->
34 </head>
35 <body>
36
37 <!-- ... -->
```

```

src > results.html > html > body > header#header > div.container > div#logo.pull-left > h1 > a > span
2  <html lang="en">
35 <body>
37 <!--=====
38 | Header
39 | =====-->
40 <header id="header">
41 |   <div class="container">
42 |     <div id="logo" class="pull-left">
43 |       <!-- Uncomment below if you prefer to use a text logo -->
44 |       <h1><a><span>The Election Commission </span> of India</a></h1>
45 |     </div>
46 |     <nav id="nav-menu-container">
47 |       <ul class="nav-menu">
48 |         <li class="reg"><a href="index.html">Register / Login</a></li>
49 |         <li class="vot"><a href="vote.html">Vote</a></li>
50 |         <li class="menu-active"><a href="results.html">Results</a></li>
51 |         <li class="buy-tickets"><a href="admin.html">Admin Panel</a></li>
52 |       </ul>
53 |     </nav><!-- #nav-menu-container -->
54 |   </div>
55 | </header><!-- #header -->
56 |
57 | <!--=====
58 | Intro Section
59 | =====-->
60 <section id="intro">
61 |   <div class="intro-container wow fadeIn">
62 |     <h1 style="text-transform: initial" id="result-text">Election<span> Results</span></h1>
63 |     <div id="loader">
64 |       <svg class="loader" xmlns="http://www.w3.org/2000/svg" viewBox="0 0 340 340">
65 |         <circle cx="170" cy="170" r="160" stroke="#E2007C"/>
66 |         <circle cx="170" cy="170" r="135" stroke="#404041"/>
67 |         <circle cx="170" cy="170" r="110" stroke="#E2007C"/>
68 |         <circle cx="170" cy="170" r="85" stroke="#404041"/>
69 |       </svg> </div>
70 |     <div id="content" style="display: none;">
71 |       <table class="container table table-sm table-bordered " style="color: white; width: 600px;">
72 |
73 |

```

src > > results.html > html > body > header#header > div.container > div#logo.pull-left > h1 > a > span

```
2  <html lang="en">
35 <body>
62 <section id="intro">
63   <div class="intro-container wow fadeIn">
72     <div id="content" style="display: none;">
80       </tr>
81       </thead>
82       <tbody id="candidatesResults">
83       </tbody>
84     </table>
85     <div id="votedFor"></div>
86
87     <a class="about-btn scrollTo" id="accountAddress" class="text-center"></a>
88   </div>
89 </div>
90 </section>
91
92 <!-- jQuery (necessary for Bootstrap's JavaScript plugins) -->
93 <script src="https://ajax.googleapis.com/ajax/libs/jquery/1.12.4/jquery.min.js"></script>
94 <!-- Include all compiled plugins (below), or include individual files as needed -->
95 <script src="js/bootstrap.min.js"></script>
96 <script src="js/web3.min.js"></script>
97 <script src="js/truffle-contract.js"></script>
98 <script src="js/app.js"></script>
99
100 <script src="others/jquery/jquery.min.js"></script>
101 <script src="others/jquery/jquery-migrate.min.js"></script>
102 <script src="others/bootstrap/js/bootstrap.bundle.min.js"></script>
103 <script src="others/easing/easing.min.js"></script>
104 <script src="others/superfish/hoverIntent.js"></script>
105 <script src="others/superfish/superfish.min.js"></script>
106 <script src="others/wow/wow.min.js"></script>
107 <script src="others/venobox/venobox.min.js"></script>
108 <script src="others/owlcarousel/owl.carousel.min.js"></script>
109 <!-- Main Javascript File -->
110 <script src="js/main.js"></script>
111 </body>
112 </html>
113
```

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```
1 <!DOCTYPE html>
2 <html lang="en">
3 <head>
4   <meta charset="utf-8">
5   <meta http-equiv="X-UA-Compatible" content="IE=edge">
6   <meta name="viewport" content="width=device-width, initial-scale=1">
7   <!-- The above 3 meta tags *must* come first in the head; any other head content must come *after* these tags -->
8   <title>The Election Commission of India</title>
9
10  <!-- Bootstrap -->
11  <link href="css/bootstrap.min.css" rel="stylesheet">
12
13  <!-- Favicons -->
14  <link href="images/favicon.png" rel="icon">
15
16  <!-- Google Fonts -->
17  <link href="https://fonts.googleapis.com/css?family=Open+Sans:300,300i,400,400i,700,700i|Raleway:300,400,500,700,800" rel="stylesheet">
18
19  <!-- Libraries CSS Files -->
20  <link href="others/font-awesome/css/font-awesome.min.css" rel="stylesheet">
21  <link href="others/animate/animate.min.css" rel="stylesheet">
22  <link href="others/venobox/venobox.css" rel="stylesheet">
23  <link href="others/owlcarousel/assets/owl.carousel.min.css" rel="stylesheet">
24
25  <!-- Other Stylesheet File -->
26  <link href="css/style.css" rel="stylesheet">
27
28  <!-- HTML5 shim and Respond.js for IE8 support of HTML5 elements and media queries -->
29  <!-- WARNING: Respond.js doesn't work if you view the page via file:// -->
30  <!--[if lt IE 9]>
31  <script src="https://oss.maxcdn.com/html5shiv/3.7.3/html5shiv.min.js"></script>
32  <script src="https://oss.maxcdn.com/respond/1.4.2/respond.min.js"></script>
33  <![endif]-->
34 </head>
35 <body>
36
```

```

src > vote.html > html > body > header#header > div.container > nav#nav-menu-container > ul.nav-menu > li.reg
2 <html lang="en">
35 <body>
40 <header id="header">
41   <div class="container">
42     <div id="logo" class="pull-left">
43       <!-- Uncomment below if you prefer to use a text logo -->
44       <h1><a><span>The Election Commission </span> of India</a></h1>
45     </div>
46   <nav id="nav-menu-container">
47     <ul class="nav-menu">
48       <li class="reg" ><a href="index.html" >Register / Login</a></li>
49       <li class="menu-active" class="vot"><a href="vote.html" >Vote</a></li>
50       <li><a href="results.html" >Results</a></li>
51       <li class="buy-tickets"> <a href="admin.html">Admin Panel</a></li>
52     </ul>
53   </nav><!-- #nav-menu-container -->
54 </div>
55 </header><!-- #header -->
56
57 <!--=====
58 | Intro Section
59 |=====-->
60
61 <section id="intro">
62   <div class="intro-container wow fadeIn">
63     <h1 style="text-transform: initial" id="vote-text">Please<span> cast your vote</span></h1>
64     <div id="loader">
65       <svg class="loader" xmlns="http://www.w3.org/2000/svg" viewBox="0 0 340 340">
66         <circle cx="170" cy="170" r="160" stroke="#E2007C"/>
67         <circle cx="170" cy="170" r="135" stroke="#404041"/>
68         <circle cx="170" cy="170" r="110" stroke="#E2007C"/>
69         <circle cx="170" cy="170" r="85" stroke="#404041"/>
70       </svg> </div>
71     <div id="content" style="display: none;">
72       <table class="container table table-sm table-bordered " style="color: ■white; width: 600px;">
73         <thead class="thead-dark">
74           <tr>
75             <th scope="col">#</th>
76

```

Fig 6.35

```

src > vote.html > html > body > section#intro > div.intro-container.wow.fadeIn > div#content > form
2  <html lang="en">
35 <body>
62 <section id="intro">
63   <div class="intro-container wow fadeIn">
72     <div id="content" style="display: none;">
75       <table>
76         <thead>
77           <tr>
78             <th scope="col">#</th>
79             <th scope="col">Name</th>
80             <th scope="col">Party Name</th>
81             <th scope="col">Votes</th>
82           </tr>
83         </thead>
84         <tbody id="candidatesResults">
85         </tbody>
86       </table>
87       <form onSubmit="App.castVote(); return false;">
88         <div class="form-group">
89           <label for="candidatesSelect" style="color: white; font-size: 25px">Select Candidate</label>
90           <select class="form-control btn-sm" id="candidatesSelect" style="align-content: center">
91             <option></option>
92           </select>
93         </div>
94         <button type="submit" class="btn" style="background-color: #f82249; color: white">Vote</button>
95       </form>
96       <a class="about-btn scrollto" id="accountAddress" class="text-center"></a>
97     </div>
98   </div>
99 </section>
100 <!-- jQuery (necessary for Bootstrap's JavaScript plugins) -->
101 <script src="https://ajax.googleapis.com/ajax/libs/jquery/1.12.4/jquery.min.js"></script>
102 <!-- Include all compiled plugins (below), or include individual files as needed -->
103 <script src="js/bootstrap.min.js"></script>
104 <script src="js/web3.min.js"></script>
105 <script src="js/truffle-contract.js"></script>
106 <script src="js/app.js"></script>
107 <script src="others/jquery/jquery.min.js"></script>
108 <script src="others/jquery/jquery-migrate.min.js"></script>

```

Fig 6.36


```
src > js > JS app.js > ...
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1 App = {
2   web3Provider: null,
3   contracts: {},
4   account: '0x0',
5   hasVoted: false,
6   votedForID: 0,
7   finishElection: 0,
8   mins: 0,
9
10
11   // web3 connects our client side application to the blockchain.
12   // metamask gives us an instance of web3 that we will use to connect to the blockchain
13   // if this doesn't happen we will set a default web3 provider from our local blockchain instance 'localhost 7545'
14   init: function () {
15     return App.initWeb3();
16   },
17
18   initWeb3: async function () {
19     // Modern dapp browsers...
20     if (window.ethereum) {
21       App.web3Provider = window.ethereum;
22       try {
23         // Request account access
24         await window.ethereum.enable();
25       } catch (error) {
26         // User denied account access...
27         console.error("User denied account access")
28       }
29     }
30     // Legacy dapp browsers...
31     else if (window.web3) {
32       App.web3Provider = window.web3.currentProvider;
33     }
34     // If no injected web3 instance is detected, fall back to Ganache
35     else {
36       App.web3Provider = new Web3.providers.HttpProvider('http://localhost:7545');
37     }
38     web3 = new Web3(App.web3Provider);
39     web3.eth.defaultAccount = web3.eth.accounts[0]
```

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```

src > js > JS app.js > listenForEvents > then() callback
46 // this function adds up our contract to our front end application
47 initContract: function () {
48     $.getJSON("Election.json", function (election) {
49         // Instantiate a new truffle contract from the artifact
50         App.contracts.Election = TruffleContract(election);
51         // Connect provider to interact with contract
52         App.contracts.Election.setProvider(App.web3Provider);
53
54         App.listenForEvents();
55
56         return App.render();
57     });
58 },
59
60
61
62 // Listen for events emitted from the contract
63 listenForEvents: function () {
64     App.contracts.Election.deployed().then(function (instance) {
65         // Restart Chrome if you are unable to receive this event
66         // This is a known issue with Metamask
67         // https://github.com/MetaMask/metamask-extension/issues/2393
68         instance.votedEvent({}, {
69             fromBlock: 0,
70             toBlock: 'latest'
71         }).watch(function (error, event) {
72             console.log("event triggered", event)
73             // Reload when a new vote is recorded
74             // App.render();
75         });
76     });
77 },
78
79
80
81
82 // render function which is what will layout all the content on the page
83 render: function () {
84     var electionInstance;
85     var loader = $("#loader");

```

src > js > JS app.js > listenForEvents > then() callback

```
82 // render function which is what will layout all the content on the page
83 render: function () {
84     var electionInstance;
85     var loader = $("#loader");
86     var content = $("#content");
87     var register = $("#register");
88
89     loader.show();
90     content.hide();
91
92
93     // Load account data
94     web3.eth.getCoinbase(function (err, account) {
95         if (err === null) {
96             App.account = account;
97             $("#accountAddress").html("Your Account: " + account);
98         }
99     });
100
101
102
103     App.contracts.Election.deployed().then(function(instance) {
104         electionInstance = instance;
105         // document.querySelector('.buy-tickets').style.display = 'none';
106
107         return electionInstance.manager();
108     }).then(function (manager) {
109         if (manager !== App.account){
110             document.querySelector('.buy-tickets').style.display = 'none';
111         }
112
113         return electionInstance.candidatesCount();
114     }).then(function(candidatesCount) {
115         var candidatesResults = $("#candidatesResults");
116         candidatesResults.empty();
117
118         var candidatesSelect = $('#candidatesSelect');
119         candidatesSelect.empty();
120     });
```

```
src > js > app.js > listenForEvents > then() callback
83   render: function () {
142   }).then( function(hasVoted) {
150       loader.hide();
151       content.show();
152       return electionInstance.usersCount();
153   }).then(function (usersCount) {
154       var voterz = $("#voterz");
155       voterz.empty();
156
157       for (var i = 1; i <= usersCount; i++) {
158           electionInstance.users(i).then(function (user) {
159               var firstName = user[0];
160               var lastName = user[1];
161               var idNumber = user[2];
162               var email = user[3];
163               var address = user[5];
164
165               let voterTemplate = "<tr><td>" + firstName + " " + lastName + "</td><td>" + idNumber + "</td><td>" + email + "</td><td>" +
166               voterz.append(voterTemplate);
167           });
168       }
169
170
171       if (localStorage.getItem("finishElection") === "1") {
172           $('form').hide();
173           $("#index-text").html("There is no active election ongoing at the moment");
174           $("#vote-text").html("No active voting ongoing");
175           // $("#result-text").html("The voting process has ended. These are the final results");
176           document.querySelector('.addCandidateForm').style.display = 'block';
177           // document.querySelector('.reg').style.display = 'none';
178           document.querySelector('.vot').style.display = 'none';
179       } else if (localStorage.getItem("finishElection") === "0") {
180
181       }
182
183   }).catch(function(error) {
184       console.warn(error);
185   });
186 },
187
```

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src > js > JS app.js > listenForEvents > then() callback

```
190     castVote: function () {
191         var candidateId = $('#candidatesSelect').val();
192         App.votedForID = candidateId;
193         localStorage.setItem("votedForID", candidateId);
194         App.contracts.Election.deployed().then(function (instance) {
195             return instance.vote(candidateId, {from: App.account});
196         }).then(function (result) {
197             // Wait for votes to update
198             $("#content").hide();
199             $("#loader").show();
200
201             location.href='results.html';
202         }).catch(function (err) {
203             console.error(err);
204         });
205     },
206 },
207
208
209     addUser: async function () {
210         var firstName = $('#firstName').val();
211         var lastName = $('#lastName').val();
212         var idNumber = $('#idNumber').val();
213         var email = $('#email').val();
214         var password = $('#password').val();
215         var app = await App.contracts.Election.deployed();
216         await app.addUser(firstName, lastName, idNumber, email, password);
217         $("#content").hide();
218         $("#loader").show();
219         document.querySelector('.vot').style.display = 'block';
220         location.href='vote.html';
221     },
222 },
223
224
225     addCandidate: async function (){
226         var CfirstName = $('#CfirstName').val();
227         var ClastName = $('#ClastName').val();
228         var CidNumber = $('#CidNumber').val();
```

```

src > js > JS app.js > listenForEvents > then() callback
238 login: async function() {
240     var lpassword = $('#lpassword').val();
241
242     var app = await App.contracts.Election.deployed();
243     var users = await app.users();
244     var usersCount = await app.usersCount;
245
246     for (var i = 1; i <= usersCount; i++) {
247         electionInstance.users(i).then(function (user) {
248             var idNumber = user[2];
249             var password = user[4];
250         });
251
252         if (lidNumber === idNumber) {
253             if(lpassword === password)
254             {
255                 location.href='results.html';
256             }
257             else {
258                 prompt("Incorrect login details, Please try again");
259             }
260
261             break;
262         }
263     }
264 }
265 },
266
267
268 startElection: function () {
269     localStorage.setItem("finishElection", "0");
270     location.href='index.html';
271 },
272
273 endElection: function () {
274     localStorage.setItem("finishElection", "1");
275     location.href='results.html';
276 }
277

```

7.CONCLUSION:

The concept of incorporating online voting systems to make the public election process cheaper, quicker, and easier is a compelling one in modern society. We have deployed online-based blockchain voting framework in this project where smart contracts are used to allow secure and cost-effective election while preserving the secrecy of the voters. Compared with previous research, we have shown that the blockchain technology provides a new opportunity for democratic countries to move from the pen and paper elect scheme and paperless direct-recording electronic voting machine (DRE) to a more cost effective and time-efficient election scheme, thus mounting the security measures of the current scheme, and offering new accessibility.

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