KARNATAKA STATE COUNCIL FOR SCIENCE AND TECHNOLOGY
Indian Institute of Science campus, Bengaluru

46th SERIES OF STUDENT PROJECT PROGRAMME
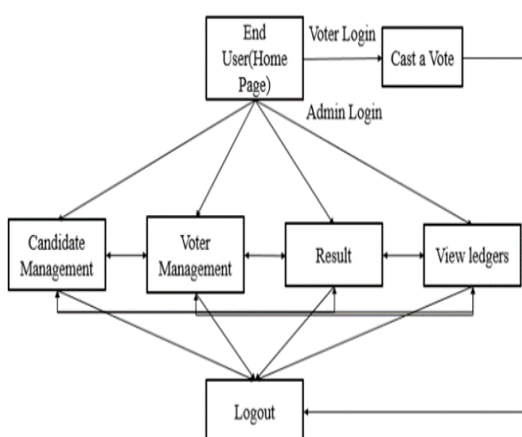
Project Synopsis

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1.	**Project Reference Number: 46S_BE_3441**
2.	**Title of the Project:** E-Voting system based on Blockchain
3.	**Name of the College and Department:** Maratha Mandal's Engineering College, Belagavi. Department of Computer Science and Engineering.
4.	**Name of the Students:**　　Ms. Sheefa Jalali 　　　　　　　　　　　　　　Ms. Zulekha M Sanadi 　　　　　　　　　　　　　　Ms. Tarannum S Mujawar 　　　　　　　　　　　　　　Ms. Zaveriya M Athani **Name of project guide:** 　　　　　　　　　Name: Prof. Padiyappa Koogati 　　　　　　　　　Email id: padiyappabkoogati@gmail.com 　　　　　　　　　Contact No.: 9972454918
5.	**Keywords:** E-voting, Blockchain, Hash, Decentralized, Voter, Enhanced security, Verification, Transparency.
6.	**Introduction/ Background:** Modern culture is increasingly embracing the practice of online voting. It has a significant chance of lowering administrative expenses and raising participation rates. Voters can cast their ballots from any location with an Internet connection, doing away with the need to print ballots or set up polling places. Blockchain technology was developed to address these problems, and it now provides decentralized nodes for electronic voting. Electronic voting systems are created using blockchain technology primarily because of the benefits of end-to-end verification. The major objective of this analysis was to assess the current state of online voting systems and blockchain-based voting research, as well as any associated challenges, to forecast future advances. In this study, the anticipated blockchain-based electronic voting application is conceptually described and the basic structure is introduced.

| 7.	**Objectives:**
	1. To make use of blockchain technology to enhance the current online system.
	2. To lighten the burden of physically holding elections and setting up polling places.
	3. Because voting is entirely online, non-resident Indians, sick people, and elderly people can participate.
	4. We are expected to learn about the blockchain and how it can be used in various industries.
	5. Increased security as votes are cast through encrypted communication channels.
	6. Low setup costs because all the available e-voting platforms only require an internet connection.
	7. Timely and accurate results from the vote count.
	8. Fraud prevention because there is less human interaction at the polls.
8.	**Methodology:**
	The system is deployed using Blockchain Technology. The system is implemented using Ganache, a personal blockchain. Truffle is being used as a developing environment to deploy smart contracts, and MetaMask is used as a cryptocurrency wallet for the transactions to take place.
	The main part of this system is the Smart Contract code written in solidity that is deployed on our personal blockchain. It registers the users on the blockchain and prevents fake votes. 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.
	System Architecture: **Conceptual Diagram:**
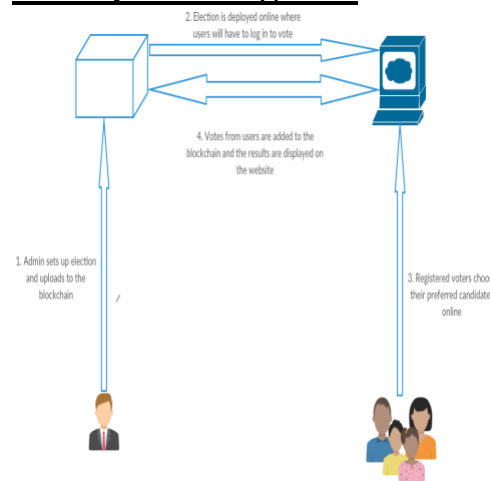
9.

Result and conclusion:

MetaMask first asks the user to connect their project to blockchain.
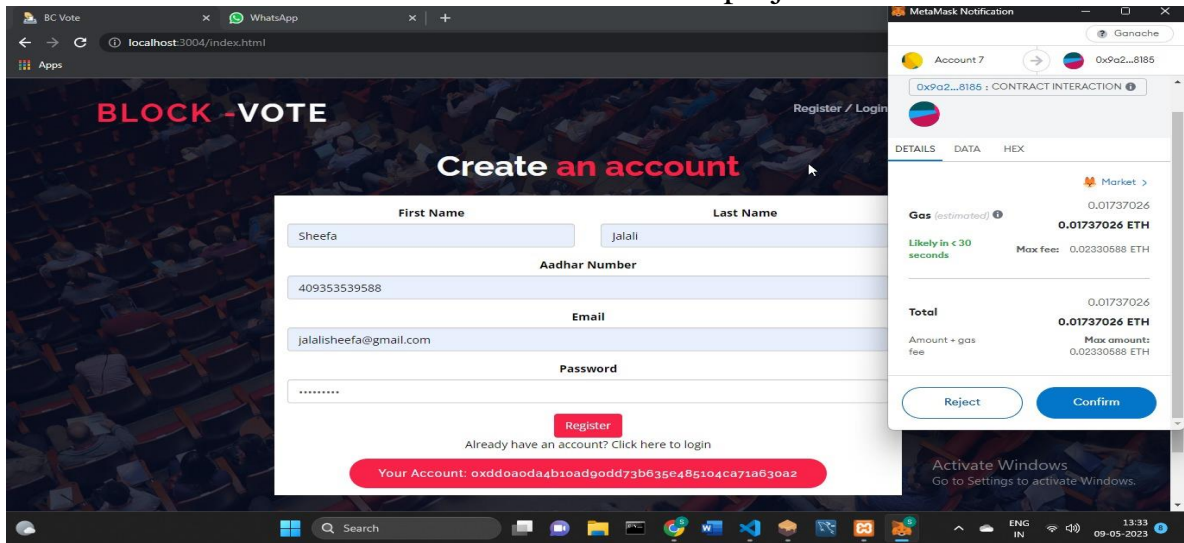
The admins can also view the election details such as vote tally and voters.
details.
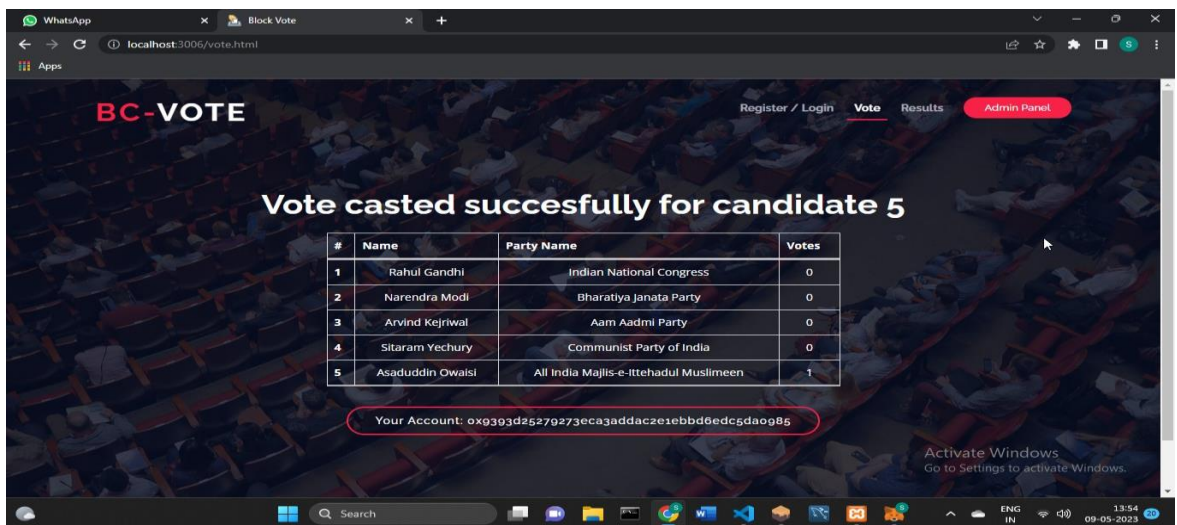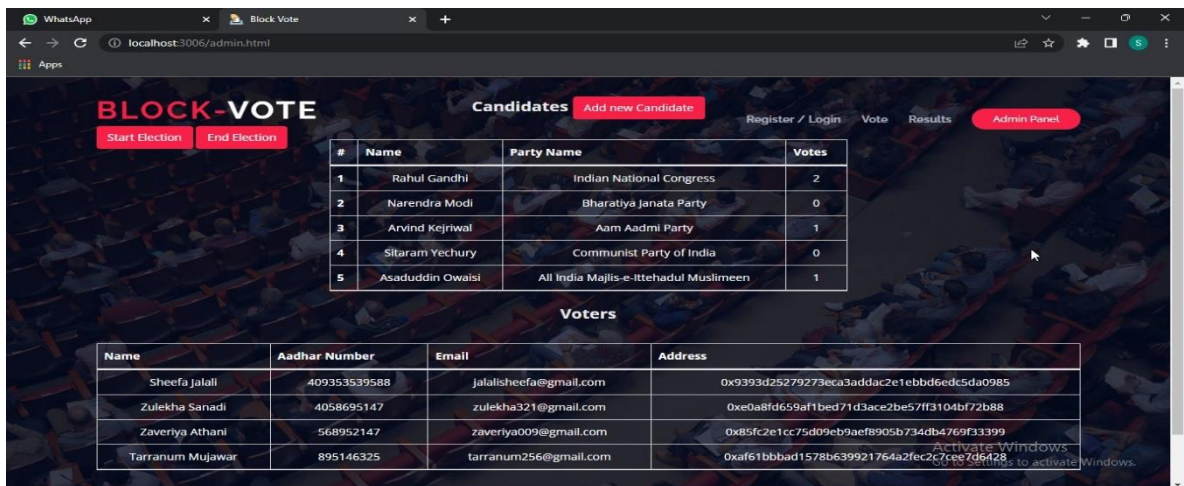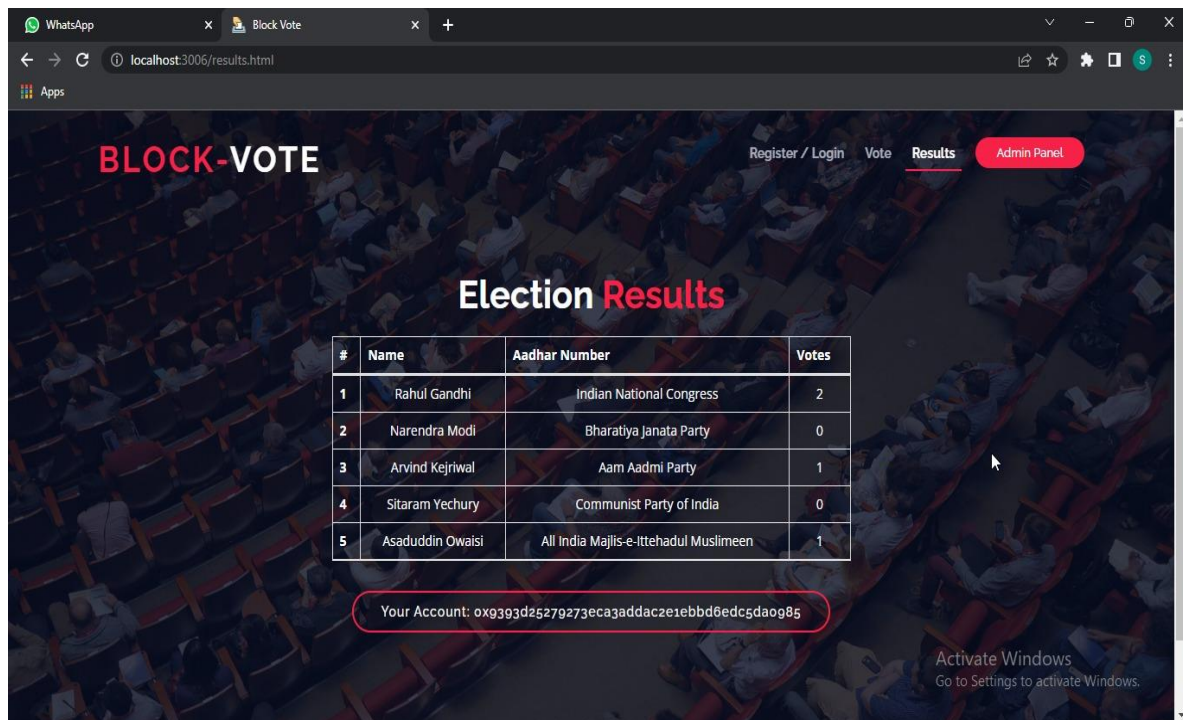
Conclusion:

Today, the idea of using online voting methods to speed up, simplify, and reduce the cost of the public election process is appealing. In this project, we have implemented a blockchain-based online voting framework where smart contracts are employed to enable safe and affordable elections while maintaining the privacy of the voters. We have demonstrated, in contrast to prior research, that the blockchain technology offers democratic nations a new opportunity to switch from the pen and paper elect scheme and paperless direct-recording electronic voting machine (DRE) to a more affordable and expedient election scheme, mounting the security measures of the current scheme, and providing new accessibility.

10.	**Scope for further work:**
	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 elections 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.