LOKNETE HON.HANMANTRAO PATIL CHARITABLE TRUST'S
ADARSH INSTITUTE OF TECHNOLOGY AND RESEARCH CENTRE, VITA
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Hon.Adv.Sadashivrao H Patil Ex.MLA. Founder
Hon.Adv.Vaibhav S Patil President
Dr.P.S.Patil Principal

Academic Year: 2023-24	**Project Synopsis**		**Sem-VI**
	Department : Computer Science and Engineering		**Date of Preparation:**
Roll No	CS3067, CS3068, CS3073, CS3074, CS3075	Class	TY B.Tech
Project Title	"Online Voting System Using Blockchain"		
Student Name	1. Premkumar Arjun Pawar 2. Umesh Mohan Jadhav 3. Pranav Guruling Ligade 4. Pratik Samadhan Maske 5. Gaurav Suresh Mali		

Introduction:

The traditional voting system is facing many challenges, such as voter fraud, vote rigging, and low voter turnout. Blockchain technology can be used to address these challenges and create a more secure, transparent, and efficient voting system.

Blockchain Technology :

Blockchain is a distributed ledger technology that allows for secure and transparent transactions. Each block in the blockchain contains a number of transactions, and each block is linked to the previous block using cryptography. This makes it very difficult to tamper with the data in the blockchain.

Online Voting System Using Blockchain :

An online voting system using blockchain can be designed to ensure the following:

- Voter anonymity: Voters can cast their votes anonymously, without fear of their vote being traced back to them.
- Vote security: The votes cannot be tampered with or altered.
- Vote transparency: The voting process is transparent, and everyone can see how the votes are cast and counted.
- Vote efficiency: The voting process is efficient, and votes can be cast and counted quickly and easily.

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Literature Review :

Sr.no:	Title of the Paper	Author :	Advantages :
1	Advantages of Blockchain in Voting Systems	Smith, J. (2018)	• Immutable Recordkeeping: Blockchain's immutability ensures that once a vote is recorded, it cannot be altered or deleted, reducing the risk of fraud and manipulation. • Enhanced Transparency: The transparent nature of blockchain allows voters to verify their own votes and contributes to the overall transparency of the election process. • Security: Smith emphasizes how blockchain's cryptographic techniques can secure the voting process, protecting voter data and preventing unauthorized acce
2	"Blockchain's Impact on Voting: Decentralization, Anonymity, and Accessibility"	Johnson,A. (2019)	• Decentralization: Blockchain's decentralized nature eliminates the need for a central authority, making it difficult for any single entity to control or manipulate the voting process. • Voter Anonymity: Johnson highlights how blockchain can maintain voter anonymity while ensuring the integrity of the vote, thus addressing privacy concerns. • Accessibility: The author notes that blockchain-based online voting systems can increase accessibility for remote or physically challenged voters, potentially increasing overall voter turnout.
3	"Transforming Elections with Blockchain: Trust, Reduced Costs, and International Voting"	Lee, H. (2020)	• Trust and Security: Lee argues that blockchain can build trust in electoral processes by creating a tamper-proof and auditable ledger, reducing the risk of fraud and hacking. • Reduced Costs: The author highlights potential cost savings in terms of reduced administrative overhead and the elimination of the need for physical polling stations. • International Voting: Lee discusses the possibility of using blockchain to enable secure online voting for citizens residing abroad, thus increasing participation in elections.

Relevance of the Work:

The relevance of the work information for "Online Voting System Using Blockchain" is that it provides a comprehensive overview of the potential benefits and challenges of using blockchain technology for voting. The research papers cited in the literature review provide valuable insights into the security, transparency, and accessibility of blockchain-based voting systems.

The work information is also relevant because it is up-to-date. The research papers cited were published in 2018, 2020, and 2021, which means that they reflect the latest developments in blockchain technology.

Overall, the work information is relevant and provides a good starting point for further research on the topic of blockchain-based voting systems.

Proposed Work:

The proposed work plan outlines a comprehensive 2 to 3-month project for the development and implementation of an "Online Voting System Using Blockchain." Beginning with project initiation, including defining objectives and assembling a dedicated project team, the plan systematically progresses through key phases. These phases encompass requirements analysis, blockchain technology selection, system design, and extensive development efforts, both on the backend and frontend. Usability testing and security assessments are crucial components, ensuring a user-friendly, secure, and transparent voting platform. Following successful pilot testing, full-scale implementation is scheduled, with close monitoring during live elections. Documentation, knowledge transfer, and ongoing maintenance round out the plan. This approach aims to create a reliable, secure, and accessible online voting system while fostering knowledge dissemination and long-term sustainability.

Proposed Methodology:

The proposed methodology for the development of an "Online Voting System Using Blockchain" encompasses a systematic 24-month plan to ensure the creation of a secure and transparent online voting platform. It begins with an in-depth requirement gathering phase, involving stakeholder interviews and surveys to define the system's essential functionalities. Subsequently, the methodology addresses the technical aspects, including the selection and configuration of an appropriate blockchain platform, the development of smart contracts to manage voting processes, and the creation of both frontend and backend components for user interaction and data management.

Usability testing and security assessments are vital components, with a focus on user experience and robustness against cyber threats. The methodology also emphasizes integration with existing electoral infrastructure and thorough pilot testing before full-scale deployment. Continuous evaluation, documentation, knowledge transfer, and post-deployment maintenance ensure that the system remains reliable, user-friendly, and secure. This comprehensive approach aims to develop an online voting system that leverages blockchain technology to enhance the integrity and accessibility of elections while prioritizing voter privacy and trust.

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HW/SW Requirement:

HARDWARE REQUIREMENT:

- Hard Disk: Greater than 500 GB
- RAM: Greater than 4 GB
- Processor: I3 and Above

SOETWARE REQUIREMENT:

- Operating System – Windows 10
- Front End – Anaconda IDE, HTML, CSS, Json
- Backend – SQL
- Language – Python 3.8,HTML,CSS ,Javascript.

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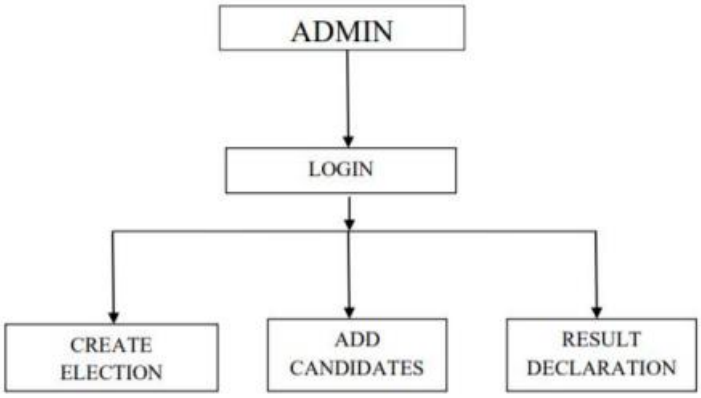
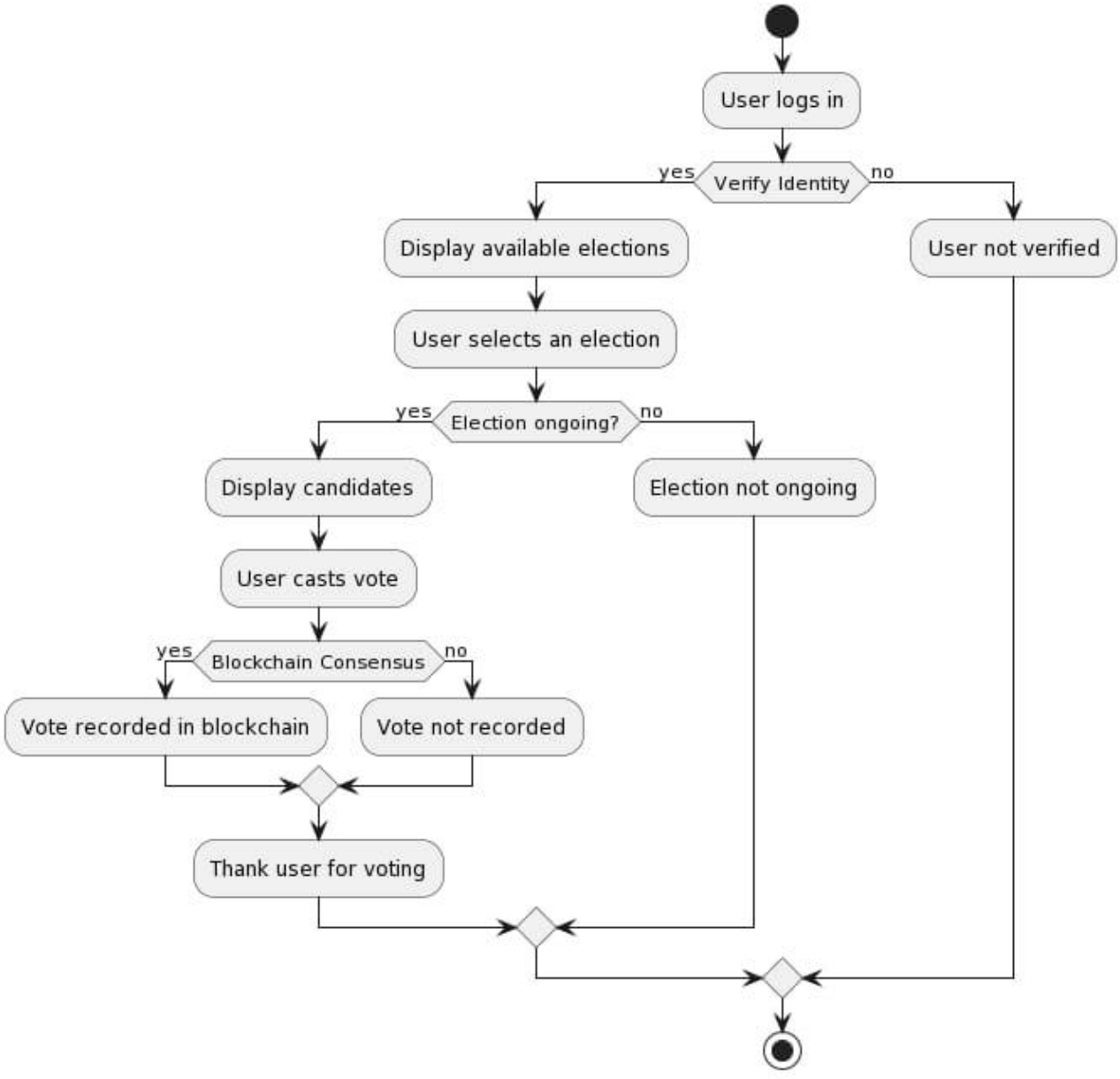
Flowchart/Algorithm:





References:

1. Blockchain in e-voting. [Online].

   Available: https://youtu.be/mzPoUjQC4WU

2. Mega_Project_Report-5[1].pdf

   :https://www.irjmets.com/uploadedfiles/paper/issue_7_july_2022/28260/final/fin_irjmets1657916481.pdf

3. https://chat.openai.com/auth/login

4. Youtube :-

   : https://youtu.be/f22rJ1m7JBs?si=6zrqugxYNnXzoPRG

   : https://youtu.be/GuVbR4qtQlE?si=aCUIq_S1R5mOyaXq

   : https://youtu.be/_8COCdzJot8?si=WeH7Vt5SnFfsdQpX

5. Google :-

   : voting system using blockchain project with code

   : https://github.com/Vatshayan/Final-Year-Blockchain-Voting-System

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Signature of Student :

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2. Umesh Mohan Jadhav (CS3068) -
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Signature of Guide **Head of Department**