OneBet : A Decentralized Bookmaking Platform

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1) ABSTRACT:-

OneBet is a game-changing decentralized betting application that harnesses blockchain technology to provide users with a transparent and secure platform. By leveraging smart contracts and removing intermediaries, OneBet ensures seamless bet execution and instant payouts, revolutionizing the betting experience. Built on the Ethereum blockchain, OneBet guarantees trustless transactions and tamper-proof record keeping, instilling confidence in users. OneBet distinguishes itself with a unique consensus algorithm that incentivizes user participation, fostering a decentralized and self-governing ecosystem. By actively engaging in the platform, users can earn rewards, contributing to the growth and stability of OneBet's betting community.
Keywords: Blockchain, Ethereum, Betting Platform, Decentralised Applications, Smart Contracts.

2) INTRODUCTION:-

OneBet is a revolutionary decentralized sports betting platform that aims to redefine the landscape of online sports gambling. In an era where digital betting platforms often fall short in terms of transparency, security, and user experience, OneBet leverages cutting-edge blockchain technology to create an all-encompassing solution that addresses these limitations.

Traditional betting platforms often rely on intermediaries and centralized systems, which can introduce inefficiencies, vulnerabilities, and a lack of transparency. OneBet disrupts this paradigm by utilizing blockchain technology, which provides a decentralized and transparent framework for conducting secure transactions and ensuring trust among participants.

The core principle behind OneBet is to empower users by giving them full control over their bets, eliminating the need for intermediaries, and providing a level playing field for all participants. By leveraging smart contracts, OneBet enables

automated and self-executing wagers, ensuring that bets are honored and payouts are made transparently and efficiently.

One of the key advantages of the OneBet platform is its focus on user experience. The platform offers an intuitive and user-friendly interface that allows bettors to explore a wide range of sports events and markets, access real-time odds, and place bets with confidence. Moreover, privacy and security are paramount, with OneBet leveraging the decentralized nature of blockchain to protect users' personal information and betting data.

This research paper aims to provide an in-depth analysis of the architecture, functionalities, and implementation details of the OneBet platform. By shedding light on the underlying technology, this paper highlights how OneBet ensures transparency, immutability, and enhanced trustworthiness in the realm of online sports betting. Additionally, it explores the potential impact of OneBet on the industry, paving the way for a more secure, transparent, and user-centric approach to sports gambling.

3) LITERATURE SURVEY :-

The concept of blockchain was initially introduced by an individual using the pseudonym Satoshi Nakamoto. Nakamoto proposed a decentralized peer-to-peer payment system that enabled secure cash transactions over the internet without the need for trust or intermediaries like financial institutions. Blockchain technology is designed to be inherently secure and exhibits a high tolerance to Byzantine failures. Prior to commencing our project, we conducted extensive research, which involved studying numerous research papers published in various reputable sources. During the detailed reference for the literature research, we came across some words that include:

• MongoDB
• Ethereum and ethers
•
• Metamask
• Ganache

[1]Mahdi Miraz and Maaruf Ali, "Applications of Blockchain Technology beyond Cryptocurrency," Annals of Emerging Technologies in Computing (AETiC), 2018:

This research paper explores the diverse applications of blockchain technology beyond cryptocurrency. It delves into the potential uses of blockchain in various industries and domains, highlighting its benefits and discussing real-world use cases.

[2]Karim Sultan, Umar Ruhi, and Rubina Lakhani, "Conceptualizing Blockchains: Characteristics Applications," 2018:

In this paper, the authors provide a conceptual framework for understanding the characteristics and applications of blockchain technology. They analyze the key features of blockchain and examine its potential applications in different sectors, shedding light on its transformative potential.

[3]Elizabeth Killick and Mark Griffiths, "Why Do Individuals Engage in InPlay Sports Betting? A Qualitative Interview Study," Journal of Gambling Studies, 2021:

Focused on the domain of sports betting, this qualitative interview study investigates the motivations and factors that drive individuals to engage in in-play sports betting. It offers insights into the psychological and behavioral aspects of sports betting, exploring the reasons behind individuals' involvement in this form of gambling.

[4]W Metcalfe, "Ethereum Smart Contracts DApps," Blockchain and Crypto Currency. Economics Law and Institutions in Asia Pacific, 2020:

This research paper discusses Ethereum's smart contracts and decentralized applications (DApps). It provides an overview of the Ethereum blockchain platform, highlighting the capabilities and potential of smart contracts in enabling various decentralized applications and their impact on different sectors.

[5]Giulio Caldarelli, "Blockchain Oracles and The Oracle Problem: A practical handbook to discover the world of blockchain smart contracts and oracles—exploring the limits of trust decentralization," 2021:

Focusing on blockchain oracles, this practical handbook explores the challenges and solutions related to the integration of smart contracts with external data sources. It investigates the role of oracles in enhancing the functionality and reliability of blockchain-based systems, addressing the "oracle problem" and exploring the limits of trust decentralization.

[6]Z. Wang, "A decentralized prediction market platform based on blockchain and masternode technologies," China Communications, 2020:

This research paper presents a decentralized prediction market platform built on blockchain and masternode technologies. It discusses the design and implementation of the platform, showcasing how blockchain can facilitate prediction markets by providing transparency, security, and decentralization.

[7]J. Peterson, J. Krug, M. Zoltu, A. K. Williams, and S. Alexander, "Augur: a decentralized oracle and prediction market platform," 2015:

Focused on the Augur platform, this paper introduces a decentralized oracle and prediction market platform. It explores the underlying technology, architecture, and features of Augur, highlighting its potential in enabling decentralized prediction markets.

[8]Ethereum whitepaper: A next-generation smart contract and decentralized application platform," Vitalik Buterin, 2014:

Authored by Vitalik Buterin, the Ethereum whitepaper introduces the Ethereum platform, which enables the creation of decentralized applications (DApps) through the use of smart contracts. The paper outlines the key concepts, design principles, and features of Ethereum, setting the foundation for the development of a programmable blockchain.

[9]N. Z. Aitzhan and D. Svetinovic, "Security and Privacy in Decentralized Energy Trading Through Multi-Signatures Blockchain and Anonymous Messaging Streams," IEEE Transactions on Dependable and Secure Computing, 2018:

Focusing on decentralized energy trading, this research paper addresses the security and privacy challenges in such systems. It proposes a solution based on multi-signatures blockchain and anonymous messaging streams to enhance security and privacy in decentralized energy trading scenarios.

4) PROPOSED SYSTEM:-

OneBet, is a decentralized sports betting platform that aims to revolutionize the online sports gambling experience. By harnessing the power of blockchain technology, the platform provides a secure, transparent, and user-centric environment for sports enthusiasts to engage in betting activities. The key features and components of the proposed system include a decentralized infrastructure, leveraging blockchain technology to eliminate intermediaries and ensure transparency and trust. Smart contracts are implemented on the blockchain to automate and execute betting transactions, handling functions such as placing bets, calculating odds, and distributing payouts. Real-time data updates are integrated from various sources, providing users with up-to-date information on sports events, odds, and betting options. This empowers users to make informed decisions based on accurate and timely data. The proposed system prioritizes user empowerment by giving individuals control over their betting activities and enabling peer-to-peer betting without third-party involvement. Enhanced security is ensured through the decentralized and immutable nature of blockchain technology, protecting user data with cryptographic algorithms and consensus mechanisms. Overall, the proposed system redefines the sports betting landscape by combining the excitement of online gambling with the benefits of blockchain technology, delivering a seamless and trustworthy betting experience for users.
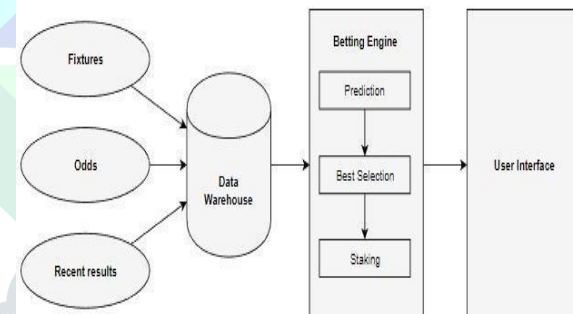

Fig 1: Proposed System

5)Proposed Methodology:

A. Blockchain:

Blockchain is a decentralized and transparent digital ledger technology that ensures secure recording of transactions. It is commonly associated with cryptocurrencies like Bitcoin but has broader applications. Essentially, it consists of linked blocks that contain transaction data, timestamps, and cryptographic hashes of previous blocks.

B. Ethereum:

Ethereum is an open-source blockchain platform that facilitates the development of decentralized applications (dApps). It includes its own programming language called Solidity, which is used to create smart contracts. These self-executing contracts encode the terms of an agreement and automate the verification and enforcement of contract terms on the Ethereum blockchain.
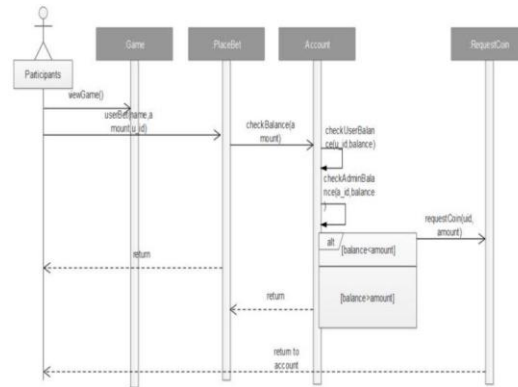
C. Metamask:

Metamask is a widely used cryptocurrency wallet and browser extension. It serves as a bridge between users' web browsers and the Ethereum blockchain, enabling interaction with decentralized applications (dApps) and conducting transactions. Users can manage multiple Ethereum accounts, securely store private keys, and easily send and receive Ethereum and other ERC-20 tokens. The built-in decentralized exchange feature allows for token trading directly from the wallet.
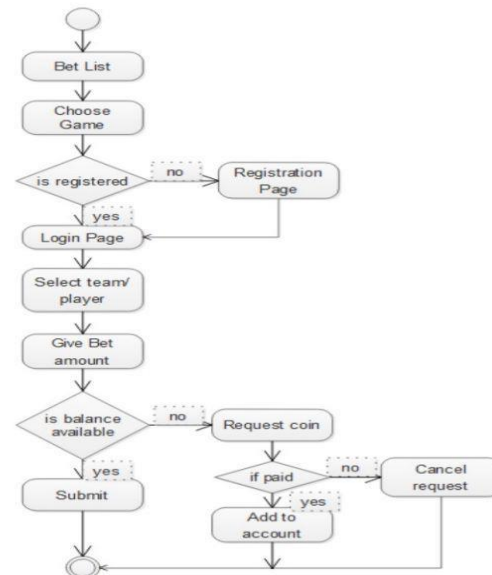
D. Ganache:

Ganache is a personal blockchain designed for Ethereum development, testing, and debugging purposes. It allows developers to simulate an Ethereum network on their local computers, creating a controlled environment for testing smart contracts, dApps, and other blockchain-related applications. Ganache offers various features, including multiple blockchain instance management, control over gas price and block time, inspection of blockchain events and transactions, and debugging capabilities.

E. MongoDB:

MongoDB is a flexible and scalable NoSQL database management system that offers efficient data storage and retrieval for the decentralized sports betting platform. With its document-based model and horizontal scalability, MongoDB can handle large volumes of data and adapt to evolving data structures. Its powerful querying and aggregation capabilities enable real-time updates, statistical analysis, and personalized user experiences. By utilizing MongoDB, the platform can ensure efficient data management, scalability, and adaptability to meet the demands of the decentralized sports betting ecosystem.

Fig 2: Sequence Diagram
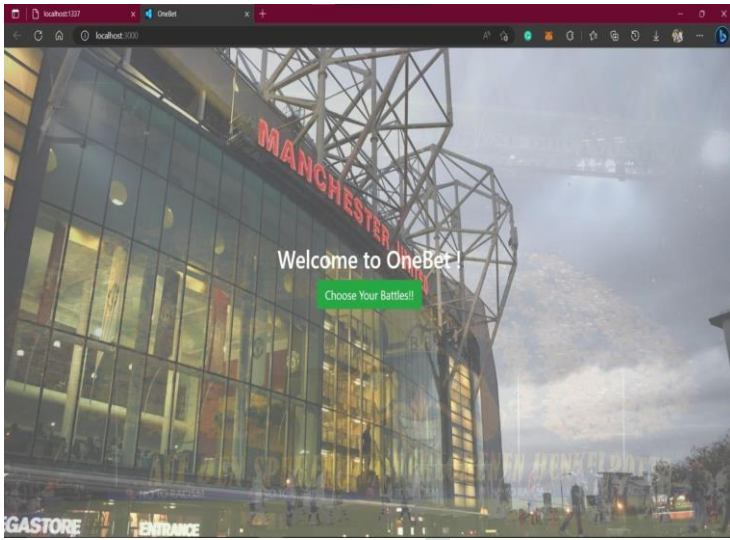

Fig 3: Workflow of System

6) Implementation:

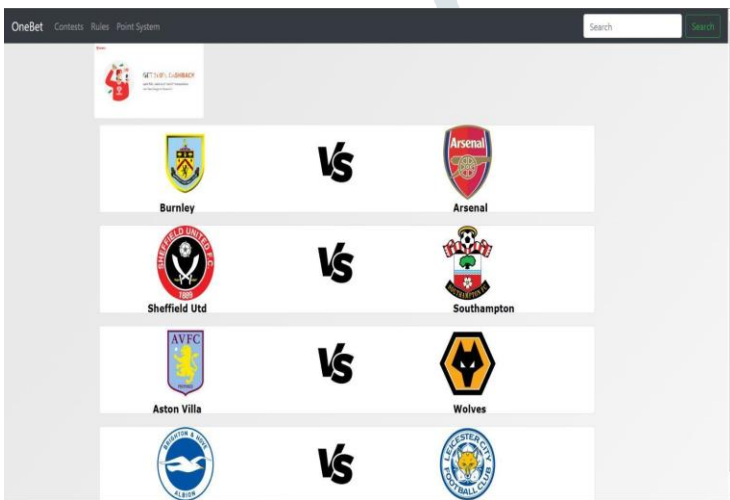
Fig 4: Home Page

Fig 5: Bet Selection

Fig 6: Points Earned

7) Conclusion:

In conclusion, the OneBet decentralized sports betting platform represents a groundbreaking solution that redefines the online sports gambling industry. By leveraging blockchain technology, OneBet addresses the limitations of traditional platforms and introduces a transparent, secure, and user-centric approach to sports betting.

OneBet's use of smart contracts ensures automated and transparent wagering, empowering users and creating a level playing field. The platform's intuitive interface allows users to explore various sports events and markets, access real-time odds, and place bets with confidence. With privacy and security as top priorities, blockchain technology safeguards users' personal information and betting data.

This research paper has provided a comprehensive analysis of the architecture, functionalities, and implementation details of the OneBet platform. It highlights the platform's commitment to transparency, immutability, and enhanced trustworthiness in online sports betting. OneBet has the potential to reshape the industry and establish itself as a game-changer in the world of sports gambling.

OneBet's success lies in its technological advancements and its ability to revolutionize user engagement in sports betting. By offering a decentralized platform that prioritizes trust, transparency, and user empowerment, OneBet sets a new standard for the future of sports betting. With ongoing developments in blockchain technology, we can expect further enhancements in the OneBet platform, ultimately transforming the online sports gambling experience.

8) Future Scope:

1. Integration with additional sports: Expanding the platform to cover a wider range of sports events, such as basketball, cricket, tennis, and more, to attract a broader user base.

2. Advanced analytics and insights: Incorporating advanced data analytics and predictive modeling techniques to provide users with valuable insights, statistics, and recommendations for making informed betting decisions.

3. Social features: Introducing social networking features that allow users to interact, follow other users' betting activities,and share their achievements and strategies.

4. Gamification elements: Implementing gamification elements, such as leaderboards, achievements, and challenges, to enhance user engagement and provide a competitive and an immersive betting experience.

9) References:

[1] Mahdi Miraz and Maaruf Ali, "Applications of Blockchain Technology beyond Cryptocurrency", Annals of Emerging Technologies in Computing (AETiC), 2018.

[2] Karim Sultan, Umar Ruhi and Rubina Lakhani, "Conceptualizing Blockchains: Characteristics Applications", 2018.

[3] Elizabeth Killick and Mark Griffiths, "Why Do Individuals Engage in InPlay Sports Betting? A Qualitative Interview Study", Journal of Gambling Studies, pp. 37, 2021.

[4] W Metcalfe, "Ethereum Smart Contracts DApps", Blockchain and CryptoCurrency.
Economics Law and Institutions in Asia Pacific, 2020, [online] Available: https://doi.org/10.1007/978-981-15-3376-1.

[5] Giulio. Caldarelli, "Blockchain Oracles and The Oracle Problem: A practical hand-book to discover the world of blockchain smart contracts and oracles—exploring the limits of trust decentralization", pp. 979-1220083386, 2021.

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[9] N. Z. Aitzhan and D. Svetinovic, "Security and Privacy in Decentralized Energy Trading Through Multi-Signatures Blockchain and Anonymous Messaging Streams", IEEE Transactions on Dependable and Secure Computing, vol. 15, no. 5, pp. 840-852, Sept.-Oct. 2018.