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**NON FUNGIBLE TOKEN IDENTITY MANAGEMENT SYSTEM**

**(Records can be instantly independently verified)**

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**A CAPSTONE PROJECT**

**SUBMITTED TO THE FACULTY OF BLOCKCHAIN STUDIES AND ARTIFICIAL INTELLIGENCE AT THE ALTHASH UNIVERSITY**

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**ABSTRACT**

In an era of advancing digital transactions and evolving privacy concerns, this project proposes a pioneering approach to identity management within financial ecosystems. We introduce a groundbreaking concept — the Soul-Bound Token Identity Management System, utilising Non-Fungible Tokens (NFTs). Our vision centres on providing users with a secure and private means to verify their identity during financial transactions. Through encryption and the association of unique digital identifiers (Soul Tokens) with individuals, this system aims to revolutionise conventional Know Your Customer (KYC) procedures. By preserving privacy and security, we aspire to redefine the landscape of identity verification, fostering trust and efficiency in financial interactions. This abstract offers a glimpse into a transformative venture poised to shape the future of identity management and enhance user experiences in the realm of finance.

**CAPSTONE DEFENSE APPROVAL FORM**

**CODE 499 WAIVER REQUEST FORM**

**PROJECT INTRODUCTION**

In an era marked by an ever-expanding digital landscape, the need for secure and private identity management has become paramount. The ubiquity of online interactions, the proliferation of personal data, and the surge in digital transactions underscore the urgency of safeguarding our identities in the digital realm.

The proposed project embarks on a journey to address this pressing need by introducing a groundbreaking Non-Fungible Token Identity Management System. This innovative system promises to redefine how individuals, organisations, and devices establish and protect their unique digital identities within the vast landscape of the blockchain.

At the heart of our initiative lie three core principles: privacy, affordability, and user-friendliness. With these principles in mind, we aim to reshape the way identity is managed in the digital world.

**KEY HIGHLIGHTS:**

**Privacy Protection**

The cornerstone of our system is advanced technology known as Zero Knowledge Proofs. By employing this cutting-edge approach, we pledge to ensure that your personal data remains shrouded in secrecy while still facilitating a robust and verifiable identity verification process. This reassures users that their private information will never be needlessly exposed, significantly reducing the risks associated with identity theft and unauthorised data access.

**Affordability**

We acknowledge the financial implications that digital identity management can bear on users. With this in mind, we are committed to eliminating the financial burden through a minimal gas transaction model. Regardless of the scale of adoption, our system is designed to be accessible to everyone, ensuring that cost is never a barrier to secure digital identity management.

**User-Friendly Interface**

Complexity and user-friendliness often stand as opposing forces in the world of technology. However, we aim to harmonise them. Our objective is to design an intuitive, easy-to-use app or website that allows users to manage their digital identities seamlessly. We believe that technology should be an enabler, not an obstacle, in the digital identity management process.

Why does this matter? It's because our project addresses the fundamental challenges of the digital age:

**Privacy**

The right to privacy is a fundamental human right. Protecting personal information from exposure during identity verification is not just a matter of convenience; it's an essential safeguard for individual freedoms.

**Access for All**

By minimising transaction fees, we're not merely removing financial barriers; we're democratising secure identity management. This makes our system accessible to a broader spectrum of users, ensuring that no one is left behind in the digital age.

**Security**

In an environment rife with cyber threats and identity theft, ensuring the security of digital identities is paramount. Our system dramatically reduces the risk of identity theft, providing users with the confidence that their digital selves are protected.

In this pursuit, we understand that challenges will arise. Complex technicalities, security concerns, and the ever-evolving legal landscape present hurdles to overcome. However, our project is fortified with a dedicated team of experts who will navigate these complexities with precision and care. Security measures and regular audits will be implemented to safeguard user data. We will work in tandem with legal experts to ensure strict compliance with prevailing laws and regulations.

In summary, our project aspires to create a user-friendly, private, and accessible identity management system. It offers solutions to modern privacy challenges and paves the way for a safer and more inclusive digital world. Together, we embark on a transformative endeavour that empowers individuals, organisations, and devices to reclaim control of their digital identities.

**PROBLEM STATEMENT**

In the rapidly evolving digital landscape, the management of digital identities has become a critical concern. As the world increasingly relies on online interactions and digital transactions, the need for secure, private, and efficient identity management has never been more urgent.

The current identity verification systems are plagued by several fundamental challenges:

**Privacy Concerns:** Existing identity management systems often require the exposure of extensive personal data during the verification process. This puts individuals at risk of privacy breaches, identity theft, and misuse of their personal information.

**Financial Barriers:** Transaction fees associated with identity verification processes can be exorbitant, especially as blockchain technology gains prominence. This financial burden can be a significant barrier to individuals and organizations, limiting access to secure identity management.

**Complex User Experience:** Many existing identity verification systems are overly complex and not user-friendly. This complexity not only hinders adoption but also increases the likelihood of user errors and system vulnerabilities.

**Lack of Security:** Identity theft and data breaches continue to be prevalent issues. Existing systems often lack the robust security measures needed to protect digital identities effectively.

Our project acknowledges these challenges and aims to provide a comprehensive solution that aligns with these core principles. By doing so, we intend to reshape the landscape of digital identity management and address the urgent needs of individuals, organisations, and devices in the digital age.

**METHODOLOGY & SOLUTION TO THE PROBLEM**

**Methodology**

**Zero Knowledge Proofs:** Implement advanced Zero Knowledge Proofs technology to protect personal data during identity verification.

**Minimal Gas Transaction Model:** Develop a system that minimises transaction fees to ensure affordability for all users.

**User-Centric Design:** Create an intuitive and user-friendly app or website for easy digital identity management.

**Solutions**

In light of these challenges, it is evident that there is a pressing need for a novel approach to digital identity management. This approach should prioritize:

**Privacy Protection:** Protecting personal information from unnecessary exposure during the identity verification process is essential. By utilising Zero Knowledge Proofs, we ensure that personal data remains confidential during identity verification, significantly reducing the risk of privacy breaches.

**Accessibility and Affordability:** Making secure identity management is accessible to everyone by minimizing transaction fees, regardless of the scale of adoption. Our minimal gas transaction model eliminates excessive fees, making secure identity management accessible to a wide user base.

**User-Friendliness:** Designing an intuitive system that simplifies the user experience, reducing the potential for errors and vulnerabilities.

**Security:** Ensuring the highest level of security to safeguard digital identities and reduce the risk of identity theft and data breaches.

**User-Friendly Interface:** The user-centric design simplifies the identity management process, reducing complexity and potential user errors.

In summary, our methodology leverages advanced technology to provide a solution that prioritises privacy, affordability, and user-friendliness, effectively addressing the identified problems in digital identity management.

**VISION STATEMENT**

To create a secure and inclusive digital world where individuals and organisations have control over their digital identities, protected by cutting-edge technology.

**MISSION STATEMENT**

Our mission is to develop an innovative Non-Fungible Token Identity Management System that safeguards privacy, ensures affordability, and offers a seamless user experience. We aim to empower users to manage their digital identities with confidence.

**GOALS**

**Privacy Assurance:** Develop a system that guarantees the privacy of personal data during identity verification, reducing the risk of data exposure.

**Affordability:** Create a minimal gas transaction model to eliminate financial barriers, ensuring accessibility to all users.

**User-Friendly Design**: Design an intuitive app or website that simplifies digital identity management, enhancing user experience.

**OBJECTIVES**

1. Develop and implement Zero Knowledge Proofs for privacy protection.

2. Establish a cost-effective transaction model that minimises fees.

3. Design a user-centric interface for digital identity management.

4. Engage potential users for feedback and improvement.

5. Secure funding and resources for full-scale development.

Our vision, mission, goals, and objectives drive our commitment to revolutionise digital identity management, making it safer, more affordable, and user-friendly for all.

**Token Name:** SoulGuard Token

**Token Ticker:** SGT

**Token Maximum Supply:** 100,000,000 SGT.

**PROJECT BUDGET AND BUDGET ALLOCATION**

**Total Project Budget:** $500,000

|  |  |  |  |
| --- | --- | --- | --- |
| S/N |  |  |  |
| 1 | Development Costs | Software Development  Blockchain Integration  Security Measures | $200,000  $50,000  $30,000 |
| 2 | User Engagement and Feedback | User Surveys and Testing  User Feedback Analysis: | $20,000  $10,000 |
| 3 | Legal Compliance and Expertise | Legal Consultation | $15,000 |
| 4 | Marketing and Promotion | Marketing Campaigns  Promotion Materials | $50,000  $10,000 |
| 5 | Prototype Development | Prototype Creation  Testing and Debugging: | $40,000  $15,000 |
| 6 | Resource Acquisition | Hardware and Software  Licensing Fees | $25,000  $5,000 |
| 7 | Miscellaneous Expenses | Contingency Fund | $5,000 |

This allocation of the project budget ensures that each aspect of your project, from development to user engagement, legal compliance, and marketing, is adequately funded. Remember to maintain flexibility in your budget for unexpected costs or changes in project scope.

**TOKEN SLOGAN**

"Unlocking Digital Identity, One SoulGuard at a Time"

**TOKEN DESCRIPTION**

SoulGuard Token (SGT) is a revolutionary Non-Fungible Token (NFT) designed to redefine the way digital identities are managed. SGT prioritises privacy, accessibility, and security, making it the ideal choice for individuals and organisations seeking to protect their digital identities in an increasingly interconnected world.

SGT utilises cutting-edge Zero Knowledge Proofs technology to safeguard your personal data during identity verification. This advanced approach ensures that your information remains confidential, drastically reducing the risk of privacy breaches and identity theft.

Moreover, SGT is committed to affordability. We've established a minimal gas transaction model, making secure identity management accessible to all users, regardless of the scale of adoption. No longer do users need to bear exorbitant transaction fees for protecting their digital identities.

Our user-friendly interface simplifies the identity management process, minimising complexity and reducing the potential for user errors. SoulGuard Token, you can take control of your digital identity with confidence.

Join us in the journey to unlock digital identity, one VeriGuard at a time.

**PROJECT LAUNCH DATE**

The Project SoulGuard Token is expected to launch in December, 2024, based on the projected timeline for the development and testing of the blockchain-based platform, which is 12 months. The project team plans to develop a minimum viable product (MVP) of the platform within 10 months, starting from January 2024.

Once the MVP is developed, the team will test and validate it with different records and gather feedback for further improvements. This testing and validation process is expected to take around 2 months, which brings us to December 2024.

Based on the feedback received, the team will then work on developing a scalable and modular platform that can be customized to meet the specific needs of stakeholders.

Launching the token in December 2024 will provide the project team with ample time for marketing and outreach efforts, ensuring that the project reaches its target audience and achieves its goals.

**TOKEN LOGO**

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**GITHUB ACCOUNT & LINK**

**LIST OF COURSES TAKEN**

* BLKN 400 The History Of Blockchain Technology
* BLKN 194 Independent Research in Blockchain Technology
* BLKN 300 Blockchain Technology & Innovation
* BLKN 205 Blockchain Theory & Practice
* BLKN 215 Applied Cryptography: Private & Public Keys and Digital Signature
* BLKN 216 Applied Cryptography: Hash Functions
* BLKN 218 Blockchain Anatomy, Nodes, & Networks
* CRPT 312 Tokenamics: Usage, Utility & Value
* BLKN 320 Consensus Mechanisms
* BLKN 232 Interoperability
* BLKN 334 Wallet Safety and Security
* BLKN 420 Decentralized Model and Consensus Mining
* BLKN 340 Diversity and Inclusion in the Technology Industry
* BLKN 342 Impostor Syndrome in Blockchain Technology
* BLKN 336 Scalability and Other Challenges
* BLKN 344 / DAPP 312 Enterprise Blockchain
* BLKN /PROG 346 Repository Systems
* BLKN /PROG 348 - Blockchain Architecture
* BLKN /PROG 350 - Althash Blockchain
* BLKN /PROG 352 Ethereum Blockchain
* BLKN 354 Blockchain Leadership & Management
* BLKN 480 Issues & Trends in Blockchain Technology
* BLKN 490B Special Topic: Cryptographic Hash Functions
* BLKN 490C Special Topic: Private & Public Keys and Digital Signature
* BLKN 354 Blockchain Leadership & Management
* BLKN 492 Directed Research in Blockchain Studies
* BLKN 495 Blockchain Profession
* BLKN  596 Blockchain Career Development
* BLKN 499 Capstone Presentation & Defense
* BLKN / COMD 310 Tribalism in Blockchain & Cryptocurrency
* HEAL 308 Self-Care and Well-Being in the Digital Age
* PROG 100 Introduction to Smart Contract (LEC)
* CRPT 200 Introduction to Cryptocurrency
* CRPT 305 Currencies, Tokens, and Stablecoins
* TKNS 330 NFT Development
* BCE/CEU 501 Blockchain Continuing Education™ (Series)