



ALTHASH
EDUCATION

SUPPLY CHAIN MANAGEMENT

(End-to-end visibility and Tracking of Supply Chain process in real time)

BY

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NIGERIA

**A CAPSTONE PROJECT
SUBMITTED TO THE FACULTY OF BLOCKCHAIN STUDIES AND ARTIFICIAL
INTELLIGENCE
AT THE ALTHASH UNIVERSITY
IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR
THE COLLEGiate OF SCIENCE IN DECENTRALIZED APPLICATIONS**

CHICAGO, ILLINOIS.

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ABSTRACT

This project examines the implementation of blockchain technology to enhance end-to-end visibility and real-time tracking in supply chain management. Traditional supply chain systems often suffer from issues like limited transparency, inefficient communication, and delayed information flow. By harnessing the power of blockchain, a secure and decentralized platform can be created to address these challenges and revolutionize supply chain management processes.

A common occurrence where supply chain management comes into play is the transportation of perishable goods from farm to end user. Efficient and transparent road transport plays a vital role in ensuring the smooth flow of goods within the supply chain. To address current challenges associated with supply chain management, this project proposes the development of a tokenized ecosystem that empowers road transport carriers and enhances end-to-end visibility and tracking of supply chain processes in real time.

Built upon blockchain technology and smart contracts, this project aims to create a secure and decentralized platform tailored to the specific needs of road transport carriers. The central component would be a token that serves as a digital asset, providing a range of utilities to streamline operations and foster collaboration within the road transport ecosystem.

Capstone Defense Approval Form

CODE 499 Waiver Request Form

Introduction

Supply chain management is a critical aspect of modern business operations, encompassing the movement of goods from their origin to the end consumer. However, traditional supply chain systems often face significant challenges, including limited transparency, inefficient communication, and delayed information flow. These issues can lead to inefficiencies, increased costs, spoilage of goods, and a lack of trust among supply chain participants.

In recent years, blockchain technology has emerged as a major game changer, transforming and revolutionizing supply chain management. By leveraging the inherent features of blockchain, such as decentralization, immutability, and transparency, organizations and businesses can enhance end-to-end visibility and achieve real-time tracking of their supply chain processes. This project aims to examine the implementation of blockchain technology as a means to address the challenges faced by traditional supply chain systems.

The specific focus of this project centers around the transportation of perishable goods within the supply chain, particularly the road transport segment. Efficient and transparent road transport is crucial to ensuring the smooth flow of goods and minimizing disruptions. However, existing road transport systems often lack the necessary transparency and real-time tracking capabilities to effectively address supply chain management challenges.

Some of these challenges include:

1. Lack of real-time data
2. Limited traceability
3. Lack of transparency
4. Inefficient record keeping
5. Impacted ROI
6. Missing inventory
7. Information insecurity

To tackle these issues, this project proposes the development of a tokenized ecosystem that empowers road transport carriers and enhances end-to-end visibility and tracking in

real time. By making use of blockchain technology and smart contracts, a secure and decentralized platform can be created, tailored to the specific needs of road transport carriers. Central to this ecosystem is a digital token that serves as a valuable asset, enabling streamlined operations and fostering collaboration within the road transport ecosystem.

Through the implementation of this tokenized ecosystem, road transport carriers and by extension, the end users can enjoy increased transparency, traceability, and low risks of problems arising with the transported item. This project seeks to demonstrate the potential of blockchain technology in empowering road transport carriers and driving positive transformations within supply chain management processes.

Problem Statement

The traditional supply chain systems used in the transportation of goods face numerous challenges, including a lack of real-time data, limited traceability, transparency issues, inefficient record-keeping, impacted return on investment (ROI), missing inventory, and information insecurity. Existing systems often rely on centralized databases, which can be prone to errors, data manipulation, and limited visibility across the entire supply chain network. This lack of transparency can lead to delays, increased costs, counterfeit products, and difficulties in addressing issues such as product recalls or compliance violations. These challenges hinder the smooth flow of goods, increase costs, compromise product quality, and erode trust among supply chain participants.

To address these issues, there is a need for a comprehensive solution that enhances end-to-end visibility and real-time tracking in the road transport segment. Existing road transport systems lack the necessary transparency and tracking capabilities to effectively address supply chain management challenges, leading to inefficiencies and risks.

As blockchain technology has been identified as a potential solution for these challenges, this project aims to examine the implementation of blockchain technology and a tokenized ecosystem specifically designed for road transport carriers. By leveraging the inherent features of blockchain, this project aims to create a secure and decentralized platform that empowers road transport carriers and enhances their ability to track and manage the supply chain in real time.

The key objectives are to improve transparency, traceability, and data availability throughout the transportation process, minimize disruptions, and provide a high level of security for the transported goods. By harnessing the potential of blockchain technology and smart contracts, this project seeks to demonstrate the transformative impact that a tokenized ecosystem can have on road transport carriers and overall supply chain management processes.

By addressing the identified challenges and leveraging blockchain technology, this project aims to revolutionize road carrier transportation, ensuring enhanced efficiency, reduced costs, increased trust, and improved outcomes for both road transport carriers, businesses and end users.

Solution to the problem

The problem of inefficient supply chain management and inventory in the logistics industry can be solved with the application of blockchain technology. With the use of the distributed ledger technology known as blockchain, data can be shared and recorded in a secure, transparent manner without the use of middlemen. Due to its decentralized design and tamper-proofing encoded unique codes in each block, it allows for secure data sharing among many providers and parties.

The challenges encountered can be resolved by creating a blockchain-based supply chain management system that offers complete visibility and real-time tracking of items. The system may guarantee data integrity, transparency, and traceability across the supply chain process by utilizing the decentralized and immutable characteristics of blockchain technology. Important elements of the solution would include:

- Blockchain Infrastructure: Setting up a distributed ledger system that enables several supply chain participants, such as manufacturers, distributors, and retailers, to securely store and retrieve transactional data. The immutability and integrity of data are ensured by the blockchain infrastructure, lowering the possibility of fraud and tampering.
- Smart Contracts: Using self-executing contracts with established rules and conditions known as smart contracts, supply chain management procedures can be automated and enforced. Smart contracts can improve efficiency and lower manual errors by enabling automated payments, order fulfillment, and product authenticity verification.
- Internet of Things (IoT) Integration: Linking physical devices to the blockchain network, such as sensors, RFID tags, and GPS trackers, to collect real-time information about the whereabouts, condition, and movement of commodities. IoT integration makes it possible to trace products continuously throughout the supply chain, maintaining transparency and offering insightful data.
- Data Sharing and Collaboration: Implementing permissioned blockchain networks to ensure that only authorized participants can access specific data. Also defined data access controls and permissions; allowing stakeholders to share relevant information while maintaining data privacy and confidentiality; enabling real-time data sharing among participants, ensuring transparency and visibility across the supply chain

network; facilitating interoperability between different systems and platforms used by various supply chain stakeholders to enable seamless data exchange.

- User Interface and Analytics: Creating a user interface that is simple to use and gives stakeholders a thorough understanding of the supply chain processes, including real-time information on inventory levels, shipping statuses, and quality assurance metrics. Also, offering analytics and data visualization tools to spot supply chain trends, patterns, and potential bottlenecks. While making use of cutting-edge analytics methods like machine learning and predictive modeling to produce actionable insights for risk management, demand forecasting, and process improvement.

The blockchain-based supply chain management system will provide end-to-end visibility and real-time tracking of commodities by putting these specific ideas into practice. It will improve communication, data integrity, and supply chain participant collaboration, resulting in increased effectiveness, lower costs, and higher customer satisfaction.

With proper planning, budget allocation, research and prototyping, blockchain technology can revolutionize supply chain management and improve overall business goals.

VISION, MISSION, GOALS AND OBJECTIVES

Vision: Our vision is to build a solution that revolutionizes the supply chain industry by providing transparent, secure, and real-time tracking and visibility throughout the entire supply chain process.

Mission: Our mission is to develop a blockchain-based solution that allows for seamless monitoring and tracking of goods from their point of origin to their point of delivery. This will increase efficiency, lower costs, reduce risks, and foster trust among all parties involved in the supply chain.

Goals:

Our main goal is to create a scalable, secure blockchain network that can manage the number and complexity of supply chain tracking while preserving the privacy and

integrity of the data. To also create end-to-end visibility by putting in place an extensive tracking system that, in real time, captures and records each stage of the supply chain procedure, including the movement of items, logistics, and associated paperwork. Additionally, we aim to facilitate smooth and secure data sharing across supply chain actors, such as producers, suppliers, distributors, retailers, and customers, in order to promote quick decision-making and cooperation. We also aim to Increase accountability and traceability, establish an open, auditable system that permits product tracing at every point in the supply chain, ensuring accountability and lowering the possibility of forgery, theft, or illegal use. Finally to execute pilot testing and evaluation: Work with industry partners to test the solution in a real-world supply chain context, collect feedback, and make necessary adjustments to guarantee the system satisfies users' needs and expectations.

Objectives:

To achieve our goals, we have identified the following objectives:

- Design and develop a robust blockchain infrastructure that utilises smart contracts: To automate and enforce supply chain procedures including purchase orders, shipment alerts, invoicing, and payment settlements, create smart contracts on the blockchain.
- Integrate IoT and data capture devices: By integrating Internet of Things (IoT) devices and sensors to collect real-time data on products, their condition, location, and other pertinent factors, the supply chain will be provided with accurate and current information.
- Create a user-friendly interface: Create a simple and easy-to-use web or mobile application that enables supply chain participants to connect with the blockchain platform, examine real-time data, track shipments, and take necessary actions.
- Ensure data privacy and security: Put in place strong security measures, such as encryption, access controls, and permissioned blockchain networks, to guard against unwanted access, manipulation, or leaking of sensitive supply chain data.
- Execute pilot testing and evaluation: Work with industry partners to test the solution in a real-world supply chain context, collect feedback, and make necessary adjustments to guarantee the system satisfies users' needs and expectations.

SupplyChainCoin (SyPC)

The token name "SyPC" for "SupplyChainCoin" is a suitable and relevant name for the proposed capstone project within the supply chain management industry, specifically focusing on road carriers. There are several reasons why this name effectively represents the project's objectives.

Firstly, the token name emphasizes the project's alignment with the supply chain management industry by incorporating the term "Supply Chain" directly in its name. This ensures that the token is easily recognizable and identifiable as a solution catering to the specific needs of supply chain businesses.

Moreover, the name "SyPC" succinctly captures the essence of the project, highlighting its intention to leverage blockchain technology to enhance supply chain operations. It conveys a sense of efficiency and innovation, suggesting that the project aims to provide practical and impactful solutions to optimize the logistics and transportation processes within the supply chain.

Lastly, the name "SupplyChainCoin" supports the platform's aims to establish a reliable and effective network for managing supply chain operations securely. This aligns with the project's goal of developing a solution specifically tailored to the supply chain management industry. It signifies the project's commitment to providing innovative and practical solutions to optimize logistics and transportation processes within the supply chain.

TOKEN TICKER

SyPC - As students presenting our group capstone project, we have decided to use the token ticker "SyPC". The acronym stands for "Supply Chain Coin". We believe that this token ticker accurately reflects the purpose of our project, which is to leverage blockchain technology to create a secure, efficient, and transparent platform for managing supply chain tracking and visibility with road carriers.

The token ticker "SyPC" emphasizes our commitment to building an infrastructure that can improve tracking, visibility and security of supply chain processes. We believe that this token ticker will help to differentiate our project from others in the blockchain and supply chain management space, while also conveying our vision and mission to potential investors and stakeholders.

TOKEN MAXIMUM SUPPLY

100, 000, 000, 000 SyPC: We set our minimum supply value at 100 billion, this is because we want to reach a larger audience and make our token more accessible and affordable for everyone. By having a large supply of tokens, we can ensure that our network will have enough resources and incentives to operate efficiently and effectively, therefore aligning with our project's goal of reaching a vast number of businesses and users.

A larger token supply of 100,000,000,000,000 SyPC would ensure chain tracking and traceability. Firstly, it ensures scalability by accommodating the growing demands of the supply chain ecosystem. Additionally, a larger supply allows for finer granularity in tracking transactions, improving accuracy. It enhances accessibility and adoption by enabling lower token denominations, making it easier for businesses of all sizes to participate. The ample supply facilitates incentives and rewards programs, encouraging active engagement and data accuracy. Moreover, a large supply promotes liquidity and trading opportunities, attracting more participants and fostering market growth. Lastly, it allows for future expansion and partnerships, ensuring flexibility and interoperability with other platforms and industries.

PROJECT BUDGET & BUDGET ALLOCATION

Total Project Amount: \$180, 000

30% - Project Development

15% - Infrastructure costs

10% - IoT Testing and Integration

10% - Maintenance and Upgrades

27% - Operational costs

8% - Other costs

Our token's budget allocation is strategically divided to ensure the optimal development of our supply chain tracking and traceability platform. With 30% dedicated to project development, 15% to Infrastructure costs, 10% to IoT testing and integration, 10% for Maintenance and Upgrades, 27% for Operational costs and 8% for other costs, we prioritize technical excellence, team motivation, market visibility, community engagement, and user appreciation for the success of our token in the supply chain industry. The budget figures proposed for a blockchain project are justifiable based on the following considerations:

Project Development: Allocating a significant portion of the budget (30%) to project development is the most important part of any project and hence necessary for ensuring it aligns with our project's goals and timeline . This funding will be utilized to support the technical development, infrastructure, and ongoing enhancements of the supply chain tracking and traceability platform. It will enable us conduct thorough testing, implement security measures, and integrate innovative features that enhance the functionality and usability of the token ensuring we deliver a robust and reliable solution that meets the evolving needs of the supply chain industry. The comprehensive breakdown is given below:

Project Development (30% - \$54,000):

- Market research and analysis: \$3,000
- Smart contract development and auditing: \$10,000
- Token creation and deployment: \$3,000

- UI/UX Design : \$5000
- Front-end Development: \$10,000
- Back-end Development: \$10,000
- Transaction tracking and verification system: \$8,000
- Regulatory compliance analysis and implementation: \$2,000
- Integration and Testing: \$3,000

Infrastructure Costs (15% - \$27,000):

- API integration and development: \$4,000
- Database setup & management (including data storage & backup solutions): \$5,000
- Cloud hosting services: \$10,000
- Domain registration & SSL certificate: \$500
- Server Maintenance and Security: \$5,000
- Other infrastructure-related expenses: \$2,500

IoT Testing and Integration (10% - \$18,000):

- IoT device integration planning: \$3,000
- IoT device testing and compatibility: \$6,000
- Data collection and analysis from IoT devices: \$6,000
- IoT security and encryption measures: \$3,000

Maintenance and Upgrades (10% - \$18,000):

- Smart contract audits and security checks: \$3,000
- Bug fixes and code optimizations: \$3,000
- Supply chain data integrity maintenance: \$1,000
- Protocol upgrades and feature enhancements: \$10,000
- User feedback implementation: \$1,000

Operational Costs (27% - \$48,600):

- Team salaries and benefits: \$30,000
- Marketing and advertising expenses: \$12,000
- Legal and compliance consulting fees: \$5,000
- Miscellaneous Expenses: \$1,600

Other Costs (8% - \$14,400):

- Partnership and collaboration expenses: \$3,000
- Contingency budget for unexpected expenses: \$8,000
- Supply chain audits and certifications: \$2,000
- Miscellaneous expenses: \$1,400

The proposed budget allocation is justifiable as it considers the various aspects required for the successful development and implementation of a blockchain project. The allocation to project development, team salaries, marketing, bounty, and faucets and giveaways are crucial to ensure that the project is developed to the highest standards, has the best talent, gains sufficient exposure, and has a strong and active community.

TOKEN SLOGAN

"Unlocking Traceability, Empowering Supply Chains"

The slogan "Unlocking Traceability, Empowering Supply Chains" conveys the core message of our project, emphasizing its focus on enhancing traceability and empowering supply chains.

"Unlocking Traceability" signifies the project's commitment to enabling transparency and visibility throughout the supply chain. It highlights the idea of breaking barriers and unlocking valuable insights by implementing traceability blockchain solution. The word "unlocking" implies that it promotes transparency by providing access to crucial data that was previously inaccessible.

"Empowering Supply Chains" emphasizes how this solution will strengthen and enhance supply chains. It goes beyond merely improving processes and operations, but will also seek to empower all stakeholders involved. By utilizing innovative technologies like blockchain and implementing effective strategies, the project empowers supply chains to operate more efficiently, make informed decisions, and adapt to changing market demands.

Overall, the slogan "Unlocking Traceability, Empowering Supply Chains" effectively captures the essence of our project by highlighting its mission to enhance transparency, traceability, and overall performance within supply chains.

LAUNCH DATE

The SyPC token is expected to launch on March 15, 2024, based on the projected timeline for the development and testing of the blockchain-based platform. The project team plans to develop a minimum viable product (MVP) of the platform within 6 months, starting from July 2023.

Once the MVP is developed, the team will test and validate it with different logistics companies, and gather feedback for further improvements. This testing and validation process is expected to take around 1 month, which brings us to August 2023.

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 October 2023 will allow 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



The logo for "SyPC" features a unique design that incorporates elements of transparency, reliability and logistics. The primary colors used in the logo are blue and green, which symbolize stability, security, and growth.

The logo's central element is a stylized letter "A," which represents the project's focus on creating an applied solution for the healthcare industry. The letter "A" is formed by two curved lines that represent a heartbeat, symbolizing the project's commitment to improving patient outcomes through better data management.

Above the letter "A," there is an icon that resembles a network or a graph, symbolizing the project's focus on creating a network for managing healthcare data. The network icon is formed by a series of interlocking lines, indicating the interconnected nature of healthcare systems and the need for a secure and efficient platform for managing data.

Below the letter "A," there is an icon that resembles a dollar sign, symbolizing the project's focus on creating a cost-effective solution for the healthcare industry. The dollar sign icon is formed by two curved lines that resemble an "S," indicating the project's commitment to creating a sustainable and scalable solution.

The logo for "SyPC" communicates the project's focus on creating an applied, secure, and cost-effective solution for managing healthcare data, specifically related to drug traceability and patient record-keeping. The design elements reflect the project's commitment to improving patient outcomes, enhancing data security and efficiency, and creating a network that benefits healthcare providers and patients alike.

This is an individual capstone project, even if you are allowed to work in a group with a maximum of five members. Each member of the group is still required to submit their individual materials, including a Github account, list of courses taken, certificates and diploma, continuing education credits, professional organization, resume, and blockchain oath of profession.

It's essential to ensure that you submit all of the required materials individually, as specified in the instructions, to complete the course and receive the certificate. If you have any questions or concerns about the submission requirements, you should contact your instructor or the organization responsible for administering the course for clarification.

REFERENCES

1. C-Sharp Corner. (2021). The Role Of Blockchain In Supply Chain Management. <https://www.c-sharpcorner.com/article/the-role-of-blockchain-in-supply-chain-management/>
2. Calibraint. (2021). What Exactly is Blockchain in Supply Chain Management? <https://www.calibraint.com/blog/Blockchain-supply-chain-management>
3. Forbes Technology Council. (November, 2021). Blockchain In Supply Chain. Forbes. <https://www.forbes.com/sites/forbestechcouncil/2021/11/08/blockchain-in-supply-chain/>
4. Patron. (March, 2023) The Role of Blockchain in supply chain Management <https://www.patron.com/insights-en/the-role-of-blockchain-in-supply-chain-management-scm>
5. Reciprocity. (November, 2021). Traditional Supply Chain vs. Digital Supply Chain. Retrieved June 18, 2023, from <https://reciprocity.com/blog/traditional-supply-chain-vs-digital-supply-chain/>

GITHUB ACCOUNT

Our project uploads (doc & slides) can be found at this repository:

<https://github.com/SandyCOG/SupplyChainCoin-SyPC->

Courses Taken

Ladderized certificates & a diploma

Transcripts of Academic Records

BCE 501 Blockchain Continuing

Education

Professional Organization

Resume

Blockchain Oath of Profession

I, solemnly pledge to uphold the highest standards of professionalism and ethics in the realm of blockchain technology as an accounting professional. Recognizing the transformative potential of blockchain in the accounting profession, I commit to embracing its principles and practices responsibly. I pledge to acquire the necessary knowledge and skills to understand and leverage blockchain technology in my accounting work. I will stay informed about the latest developments in blockchain, continuously update my expertise, and adapt my practices to incorporate blockchain solutions where appropriate. I will prioritize accuracy, transparency, and integrity in my utilization of blockchain technology, ensuring the confidentiality and security of sensitive information. I will adhere to regulatory requirements and promote ethical behavior in the use of blockchain. With this pledge, I dedicate myself to the responsible and ethical advancement of the accounting profession in the era of blockchain technology.

LISTED REQUIREMENTS

All students must satisfy the listed requirements for the capstone project, especially the numbered item requirements. These numbered requirements should be clearly labeled and structured in a logical order.

While the listed requirements provide a framework for the project, students are encouraged to include any additional information they deem relevant. Optional information can enrich the capstone project and demonstrate a deeper understanding of the topic, but it should not detract from the clarity and focus of the required elements.

Examples of optional information that can be included are roadmaps, strategic plans, implementation plans, action plans, and the like. However, it is important to note that optional information should not be numbered, unlike the required items.

Any information not explicitly mentioned in the listed requirements is considered optional. Students are encouraged to be creative in their approach to the project and to explore innovative solutions that align with the project's goals.

Remember to adhere to the project's timeline and to communicate regularly with your project advisor. Proper planning, organization, and communication are crucial to the success of the project.

PLAN B: CAPSTONE ALTERNATIVE

Consider the "**Blockchain Research in Practice**" as an alternative to the provided template for BLKN 492 Directed Research. This option allows you to explore the field of blockchain technology and its applications in various industries. You have the flexibility to propose your own research topic related to blockchain, following the guidelines mentioned below.

There is **no prescribed length or specific template to follow** for your research proposal. Instead, focus on submitting a well-reasoned and acceptable proposal based on established guidelines for research proposals in academic work. This freedom allows you to tailor the structure and content of your proposal to best convey your ideas and showcase your skills.

Keep in mind that the purpose of this guideline is to provide an open and fluid framework. This approach allows you the liberty to explore different aspects of your research interest and gives you ample space to craft **a proposal that is worthy of inclusion on your resume and can be utilized in applications for graduate programs or other graduate work.**

For approval of your proposed research topic and to ensure it aligns with the objectives of the capstone project, **please contact Amando Boncales at edu@althash.university.** Reach out to him with your initial ideas and seek his guidance to refine and finalize your research proposal. Remember, approval is necessary before proceeding with your chosen topic.

By incorporating these instructions, students will have more flexibility in choosing a research topic related to blockchain technology and the freedom to structure their proposals based on established guidelines. This approach encourages creativity and allows students to create

impactful and relevant research proposals for their capstone project.

CHATGPT BEST PRACTICES

Here are some best practices for students who want to use ChatGPT in writing, enhancing, and ideating their capstone project:

1. Clearly define your goals: Before you start using ChatGPT, it's important to clearly define your goals for the project. Identify what you hope to achieve by using ChatGPT and how it can help you in your capstone project.
2. Know what to ask: When interacting with ChatGPT, it's important to know what to ask. Ask specific and relevant questions related to your project. Avoid asking generic questions that may not be relevant to your project.
3. Use natural language: ChatGPT is designed to understand and respond to natural language. Use complete sentences and avoid using jargon or technical terms that may confuse ChatGPT.
4. Keep it concise: ChatGPT may provide long and detailed responses to your questions. It's important to keep your interactions concise and focused on your specific needs.
5. Evaluate the response: ChatGPT is an AI language model, and its responses may not always be accurate or relevant to your project. Evaluate the response and ensure that it aligns with your project goals and objectives.
6. Use ChatGPT as a tool: ChatGPT can be a valuable tool in enhancing your capstone project, but it should not replace critical thinking and human interaction. Use ChatGPT as a complement to your own research and knowledge.
7. Practice regularly: The more you interact with ChatGPT, the better you'll become at using it effectively. Practice regularly to improve your skills and get the most out of the tool.

By following these best practices, students can use ChatGPT to enhance their capstone project and achieve their project goals.

1. Cover Page

a. Capstone Title

Blockchain for Healthcare: Enhancing Drug Traceability and Patient Record-keeping

2. Abstract

This passage discusses the potential impact of blockchain technology on the healthcare industry. It highlights how traditional methods used in the industry, such as managing drug supply chains and patient records, are often prone to errors and fraud due to their manual and fragmented nature. By using blockchain technology, healthcare providers can create a secure and efficient platform for managing these processes. The distributed nature of blockchain allows for real-time recording of transactions and enhances transparency and collaboration among stakeholders. The application of blockchain technology has the potential to revolutionize the healthcare industry by making the system more secure, efficient, and transparent, ultimately improving patient outcomes and reducing costs associated with fraud and errors.

3. Capstone Defense Approval Form

CAPSTONE DEFENSE APPROVAL FORM

Name: Chukwu Oluebube Precious

Capstone Defense Approval Date & Time: March 31st, 2023 & 4:pm WAT

Degree: Nanodegree

Status:

Unit: College of Continuing and Professional Studies (CAPS)

Capstone Title: Creating Impact through Gaming: A Capstone project on using NFTs and in-game purchases to benefit education and build Infrastructures.

Abstract:

This capstone project aims to explore the potential of using non-fungible tokens (NFTs) and in-game purchases to make a positive impact in education and infrastructure building. With the rise of blockchain technology, NFTs have become a popular way of representing digital ownership of assets, including in-game items. By integrating NFTs into gaming, it is possible to create unique and valuable items that players can collect, trade, and sell.

This project proposes a platform that combines gaming with social impact initiatives. The platform will feature a collection of NFTs that players can purchase using cryptocurrency or fiat. A portion of the proceeds from the sale of each NFT will be donated to support education initiatives and infrastructure building projects. The platform will also feature in-game purchases, with a portion of the revenue generated from these purchases going towards the same initiatives.

To ensure the success of the platform, the project team will conduct market research, collaborate with education and infrastructure building organizations, and work with game developers to create engaging and entertaining games that feature the NFTs and in-game purchases.

Through this project, we hope to demonstrate the potential of using gaming and blockchain technology to create a positive impact on society. By combining entertainment and social impact, we can create a new paradigm for how we engage with digital platforms and use technology to build a better world.

In partial fulfillment of the requirements for the nanodegree of

BCBS

We, the undersigned, recommend that the capstone project completed by the student listed above be acknowledged and counted as a requirement for graduation.

COMMITTEE APPROVAL

Johannes Dowe
adviser name

signature

Julia Ezeji
chief secretary

signature

*At least one of the signatures above must be that of a member of the Althash University Faculty. By completing this box, you are confirming that the student above has satisfactorily completed the academic work for the program stated above. The submission of this form indicates the approval of the format and content of this document. This form is required for completion of the capstone project deposit.

4. CODE 499 Waiver Request Form — OR — Special Request: Capstone Defense Fee Receipt



**ALTHASH
UNIVERSITY**

CODE 499 WAIVER REQUEST FORM

Name: [REDACTED]

Capstone Defense Approval Date & Time: [REDACTED]

Degree: Nanodegree

Unit: College of Continuing and Professional Studies (CAPS)

Capstone Title: [REDACTED]

Abstract:

[REDACTED]

[REDACTED]

I, the undersigned, request that the student indicated above be granted a fee waiver for the capstone project he or she completed on time and in accordance with cohort standards.

APPROVAL

Johannes Dowe

adviser name

signature

5. Introduction

Blockchain technology has emerged as a revolutionary tool that is transforming various industries by creating secure and transparent digital environments. Blockchain is essentially a distributed ledger that enables transactions and data to be securely recorded, verified and shared across a network of computers, without the need for intermediaries. The decentralized nature of blockchain technology eliminates the need for a central authority to manage and authenticate transactions, which makes it a powerful tool for enhancing transparency, efficiency, and security in a wide range of industries.

One industry that can significantly benefit from blockchain technology is the healthcare sector. The healthcare industry is known for its complex and fragmented systems, with traditional methods of managing drug supply chains and patient records often being manual and prone to errors and fraud. The fragmented nature of the healthcare system makes it challenging to share data securely and efficiently across different providers and stakeholders.

The use of blockchain technology in the healthcare industry can help solve these issues. Blockchain can be used to create a secure and efficient platform for managing drug supply chain and patient records. By recording transactions in real-time, each block in the blockchain contains a unique code that verifies the authenticity of the information. This makes it difficult for hackers to tamper with the information or introduce fraudulent data into the system.

Moreover, the distributed nature of blockchain means that all participants in the network have access to the same information, which enhances transparency and collaboration among stakeholders. This can help improve patient outcomes and reduce costs associated with fraud and errors.

One area where blockchain technology can make a significant impact is in drug supply chain management. The current supply chain management system in the healthcare industry is complex and fragmented, with multiple stakeholders involved. The use of blockchain technology can help create a secure and transparent supply chain that is easily traceable, which can enhance drug safety and reduce the risk of counterfeiting.

Blockchain technology can also improve patient record keeping in the healthcare industry. Traditional methods of managing patient records are often manual and prone to errors, making it challenging to share data securely and efficiently across different providers and stakeholders. By using blockchain technology, healthcare providers can create a secure and efficient platform for managing patient records, allowing patients to have control over their data while enhancing security and transparency.

The application of blockchain technology in the healthcare industry has the potential to revolutionize the way drug supply chains and patient records are managed, making the system more secure, efficient, and transparent. The distributed nature of blockchain technology can help enhance collaboration and transparency among stakeholders, which can ultimately improve patient outcomes and reduce costs associated with fraud and errors. As the healthcare industry continues to evolve and strive for more efficient and secure systems, blockchain technology will undoubtedly play an increasingly critical role.

6. Problem Statement

The healthcare industry faces significant challenges in managing drug supply chains and patient records, with current methods being inefficient, error-prone, and vulnerable to fraud. These issues can lead to negative impacts on patient outcomes and healthcare costs. Additionally, the fragmented nature of healthcare systems creates difficulties in securely and efficiently sharing data across various providers and stakeholders. This situation highlights the need for a secure and efficient platform that can improve drug traceability and patient record-keeping while also enhancing transparency and collaboration among stakeholders.

Blockchain technology has been identified as a potential solution for these challenges. It offers a distributed ledger that allows transactions and data to be securely and transparently recorded and verified without intermediaries. The distributed nature of the blockchain also enhances transparency and collaboration, which can ultimately improve patient outcomes and reduce healthcare costs.

However, despite the potential benefits of blockchain technology, there is a lack of research on how to effectively implement this technology in the healthcare industry. There are also ethical and legal concerns that need to be addressed to ensure that the use of blockchain in healthcare does not infringe on patient privacy or legal requirements.

Therefore, there is a critical need for a capstone project that explores the potential of blockchain technology in the healthcare industry. Specifically, such a project should focus on enhancing drug traceability and patient record-keeping while addressing ethical and legal concerns. This project should aim to develop a secure and efficient blockchain-based platform that can manage drug supply chain and patient records while also adhering to ethical and legal requirements. Additionally, the project should address the challenges and opportunities of implementing blockchain technology in the healthcare industry, including the impact on stakeholders, the costs and benefits, and the scalability of the proposed solution.

The outcomes of this capstone project could provide valuable insights into how blockchain technology can be effectively implemented in the healthcare industry. The findings could inform healthcare providers and policymakers on the benefits of using blockchain technology, the potential risks, and the necessary steps to ensure a successful implementation. Ultimately, this project could help revolutionize the healthcare industry by improving drug traceability and patient record-keeping, while also enhancing transparency and collaboration among stakeholders.

7. Solution to the Problem

The solution to the problem of inefficient drug supply chain management and patient record keeping in the healthcare industry lies in the adoption of blockchain technology. Blockchain is a distributed ledger technology that allows secure and transparent recording and sharing of data without the need for intermediaries. Its decentralized nature makes it possible to securely share data across different providers and stakeholders, while the unique codes embedded in each block make it tamper-proof.

To address the challenges of implementing blockchain in the healthcare industry, a capstone project can be undertaken to develop a secure and efficient blockchain-based platform that manages drug supply chain and patient records while adhering to ethical and legal requirements. This project should focus on enhancing drug traceability and patient record-keeping while addressing ethical and legal concerns.

The platform should be designed to improve drug traceability and reduce the risk of counterfeiting, which is a significant concern in the healthcare industry. Blockchain technology can be used to create a tamper-proof and transparent drug supply chain system that can track the movement of drugs from the manufacturer to the patient. By recording each transaction in real-time and embedding unique codes in each block, the platform can guarantee the authenticity and safety of drugs, reducing the risk of counterfeit drugs being introduced into the system.

In addition to enhancing drug traceability, the platform should also focus on improving patient record keeping. Traditional methods of managing patient records are often manual and prone to errors, making it challenging to share data securely and efficiently across different providers and stakeholders. The blockchain-based platform can be designed to create a secure and efficient system for managing patient records. This platform should allow patients to control their data while enhancing security and transparency. The use of blockchain technology can also ensure that patient data is tamper-proof, reducing the risk of fraudulent data being introduced into the system.

Ethical and legal concerns are critical considerations when implementing blockchain technology in the healthcare industry. The capstone project should address these concerns by designing a platform that adheres to ethical and legal requirements. The project team should engage with stakeholders, including patients, healthcare providers, and regulators, to identify and address ethical and legal challenges. This engagement should include consultations with legal experts to ensure compliance with relevant laws and regulations, such as HIPAA, GDPR, and the FDA.

The successful implementation of the blockchain-based platform will require collaboration among various stakeholders, including healthcare providers, patients, regulators, and technology experts. Therefore, the project team should establish a robust governance structure that ensures transparency, accountability, and collaboration. This structure should ensure that all stakeholders are involved in the development, testing, and implementation of the platform.

The adoption of blockchain technology in the healthcare industry will require a significant investment in infrastructure and training. However, the potential benefits, including improved drug traceability, patient record-keeping, and reduced healthcare costs, make this investment worthwhile. To ensure the successful implementation of the platform, the project team should develop a comprehensive training program that educates stakeholders on the benefits and features of the platform.

The solution to the challenges faced in drug supply chain management and patient record-keeping in the healthcare industry lies in the adoption of blockchain technology. A capstone project can be undertaken to develop a secure and efficient blockchain-based platform that manages drug supply chain and patient records while adhering to ethical and

legal requirements. The platform should focus on enhancing drug traceability, reducing the risk of counterfeit drugs, and improving patient record keeping. Additionally, it should address ethical and legal concerns and establish a robust governance structure that ensures transparency, accountability, and collaboration among stakeholders. With proper infrastructure, training, and collaboration, blockchain technology can revolutionize the healthcare industry by improving drug traceability, patient record-keeping, and reducing healthcare costs.

8. Vision, Mission, Goals, and Objectives

Vision: Our vision is to become the leading provider of blockchain-based solutions that improve drug traceability and patient record-keeping in the healthcare industry. We aim to revolutionize the healthcare industry by leveraging blockchain technology to enhance patient outcomes and healthcare efficiency.

Mission: Our mission is to develop and deliver a secure, efficient, and transparent platform that leverages blockchain technology to enhance drug traceability and patient record-keeping in the healthcare industry. We strive to provide a solution that addresses the challenges faced by the healthcare industry while adhering to ethical and legal requirements.

Goals: Our primary goal is to develop a minimum viable product (MVP) of the blockchain-based platform within six months. We aim to test and validate the MVP with healthcare providers and patients to gather feedback for further improvements. Additionally, we aim to develop a scalable and modular platform that can be customized to meet the specific needs of healthcare providers and stakeholders. We also aim to ensure ethical and legal compliance with relevant regulations, such as HIPAA and GDPR, and provide ongoing support and maintenance to ensure the platform's stability, reliability, and security.

Objectives: To achieve our goals, we have identified the following objectives:

- Identify the key requirements and challenges of the healthcare industry related to drug traceability and patient record-keeping.
- Design a blockchain-based solution that meets these requirements and addresses the challenges.
- Develop and deploy the MVP of the platform using agile methodologies to ensure efficiency and flexibility.
- Test and validate the MVP with healthcare providers and patients, and gather feedback for further improvements.
- Implement features and functionality based on user feedback and market demand to ensure the platform is relevant and meets the changing needs of the healthcare industry.
- Ensure ethical and legal compliance with relevant regulations, such as HIPAA and GDPR, to ensure the privacy and security of patient data.
- Provide ongoing support and maintenance to ensure the platform's stability, reliability, and security, and to ensure healthcare providers and stakeholders can rely on the platform.

- Continuously improve the platform based on user feedback and emerging technologies, to ensure that the platform remains at the forefront of innovation and is always providing the best solutions for the healthcare industry.

By focusing on these objectives, we believe that we can achieve our goals and mission of developing a secure, efficient, and transparent platform that leverages blockchain technology to enhance drug traceability and patient record-keeping in the healthcare industry. We are committed to delivering a solution that improves patient outcomes and healthcare efficiency while adhering to ethical and legal requirements.

9. Token Name

The token name "**SyPC**" for "**Applied Financial Network for Healthcare Data**" is a suitable and relevant name for the proposed capstone project for several reasons.

Firstly, the token name emphasizes the financial aspect of the project, indicating that it aims to develop a solution that is not only efficient but also cost-effective. The name "Financial Network" suggests that the platform will facilitate secure and efficient financial transactions in the healthcare industry, such as insurance claims and billing.

Secondly, the name "Applied" indicates that the project aims to develop a practical solution that can be implemented in real-world scenarios, rather than just a theoretical concept. This aligns with the project's objective of creating a blockchain-based platform that can enhance drug traceability and patient record-keeping in the healthcare industry.

Lastly, the name "Network for Healthcare Data" indicates that the platform will provide a secure and efficient network for managing healthcare data. This aligns with the project's goal of developing a solution that enhances patient record-keeping and drug traceability in the healthcare industry, two critical aspects that require secure and efficient data management.

The token name "SyPC" effectively communicates the project's focus on creating a secure, efficient, and cost-effective platform for managing healthcare data, specifically related to drug traceability and patient record-keeping.

10. Token Ticker

SyPC - As students presenting our group capstone project, we have decided to use the token ticker "SyPC". The acronym stands for "Applied Financial Network for Healthcare Data". We believe that this token ticker accurately reflects the purpose of our project, which is to leverage blockchain technology to create a secure, efficient, and transparent platform for managing drug supply chain and patient records in the healthcare industry.

The token ticker "SyPC" emphasizes our commitment to building a financial network that can enhance data management in the healthcare industry, ultimately leading to improved patient outcomes and healthcare efficiency. We believe that this token ticker will help to differentiate our project from others in the blockchain and healthcare space, while also conveying our vision and mission to potential investors and stakeholders.

11. Token Maximum Supply

100, 000, 000, 000 SyPC: As per the recommendation, a minimum of 100 billion tokens is recommended to reach a larger audience. In addition, the project's goal is to create a secure, efficient, and transparent platform for managing healthcare data, specifically related to drug traceability and patient record-keeping. The platform will cater to a vast and complex healthcare industry, with numerous stakeholders, such as healthcare providers, regulators, and patients.

A larger token supply of 100,000,000,000 SyPC tokens would provide sufficient room for broader adoption and greater liquidity, which is important for achieving the project's long-term goals. It will allow more users to participate in the platform, improving its usability and efficiency. The large token supply also ensures that the platform can scale to meet the growing demand of the healthcare industry over time.

Moreover, the large token supply provides ample room for token distribution, incentivization, and rewards, which can further drive adoption and engagement with the platform. It can also enable the project to create a sustainable ecosystem with active participation from all stakeholders.

The size of 100,000,000,000 SyPC tokens is justified based on the project's goal of creating a secure, efficient, and transparent platform for managing healthcare data, the recommendation for a minimum of 100 billion tokens to reach a broader audience, and the need for a large token supply to support broader adoption, liquidity, and ecosystem building.

12. Token Budget Allocation

- 45% - Project Development
- 20% - Team Salary
- 15% - Marketing
- 10% - Bounty
- 10% - Faucets and giveaways to reward community members

The budget figures proposed for a blockchain project are justifiable based on the following considerations:

1. Project Development: Allocating 45% of the budget to project development is essential as it covers the research, development, and implementation of the project. Blockchain technology is complex and requires significant expertise, time, and effort to develop and implement successfully. A considerable portion of the budget must be allocated to this area to ensure that the project is developed to the highest standards.
2. Team Salary: Allocating 20% of the budget to the team's salary is vital as it ensures that the project is supported by a talented and dedicated team that can drive its success. Blockchain development requires specialized skills, and attracting and retaining top talent can be expensive. Allocating a significant portion of the budget to team salaries ensures that the project has the necessary resources to attract and retain the best talent.
3. Marketing: Allocating 15% of the budget to marketing is critical to ensure that the

token gains sufficient exposure to reach the target audience. Effective marketing strategies are essential for driving adoption and building a strong community around the project. Allocating enough budget to promote the token through various channels, including social media, advertising, and public relations, will ensure that the project is visible and reaches the intended audience.

4. **Bounty:** Allocating 10% of the budget to bounty programs can help incentivize community participation, encourage community engagement, and drive adoption. Bounty programs can reward community members for contributing to the project's development, such as bug reporting, testing, and translations, among others. This allocation will help attract and retain a vibrant and active community around the project.
5. **Faucets and giveaways:** Allocating 10% of the budget to faucets and giveaways to reward community members is an excellent way to incentivize community participation and drive adoption. By providing community members with incentives, such as free tokens or access to unique features, the project can create a strong community that is loyal and committed to its success.

The proposed budget allocation is justifiable as it considers the various aspects required for the successful development and implementation of a blockchain project. The allocation to project development, team salaries, marketing, bounty, and faucets and giveaways are crucial to ensure that the project is developed to the highest standards, has the best talent, gains sufficient exposure, and has a strong and active community.

13. Token Slogan

"Securing Healthcare Data, Empowering Patient Care"

This slogan highlights the two main goals of the project: to create a secure platform for managing healthcare data and to improve patient care by enhancing drug traceability and patient record-keeping. The word "Securing" emphasizes the importance of data security, while "Empowering Patient Care" highlights the project's focus on improving patient outcomes through better data management. Overall, the slogan communicates the project's commitment to creating a solution that benefits both healthcare providers and patients alike.

14. Launch Date

Launch Date: November 15, 2023

The SyPC token is expected to launch on November 15, 2023, based on the projected timeline for the development and testing of the blockchain-based platform. The project team plans to develop a minimum viable product (MVP) of the platform within 6 months, starting from May 2023.

Once the MVP is developed, the team will test and validate it with healthcare providers and patients, and gather feedback for further improvements. This testing and validation process is expected to take around 3 months, which brings us to August 2023.

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 healthcare providers and stakeholders. This development process is expected to take around 3 months, which brings us to November 2023, the proposed launch date for the SyPC token.

Launching the token in November 2023 will allow the project team to leverage the upcoming holiday season and end-of-year financial planning for healthcare providers, potentially increasing adoption and engagement with the platform. It also provides ample time for marketing and outreach efforts, ensuring that the project reaches its target audience and achieves its goals.

15. Token Logo



The logo for "SyPC" features a unique design that incorporates elements of healthcare and finance. The primary colors used in the logo are blue and green, which symbolize stability, security, and growth.

The logo's central element is a stylized letter "A," which represents the project's focus on creating an applied solution for the healthcare industry. The letter "A" is formed by two curved lines that represent a heartbeat, symbolizing the project's commitment to improving patient outcomes through better data management.

Above the letter "A," there is an icon that resembles a network or a graph, symbolizing the project's focus on creating a network for managing healthcare data. The network icon is formed by a series of interlocking lines, indicating the interconnected nature of healthcare systems and the need for a secure and efficient platform for managing data.

Below the letter "A," there is an icon that resembles a dollar sign, symbolizing the project's focus on creating a cost-effective solution for the healthcare industry. The dollar sign icon is formed by two curved lines that resemble an "S," indicating the project's commitment to creating a sustainable and scalable solution.

The logo for "SyPC" communicates the project's focus on creating an applied, secure, and cost-effective solution for managing healthcare data, specifically related to drug traceability and patient record-keeping. The design elements reflect the project's commitment to improving patient outcomes, enhancing data security and efficiency, and creating a network that benefits healthcare providers and patients alike.

This is an individual capstone project, even if you are allowed to work in a group with a maximum of five members. Each member of the group is still required to submit their

individual materials, including a Github account, list of courses taken, certificates and diploma, continuing education credits, professional organization, resume, and blockchain oath of profession.

It's essential to ensure that you submit all of the required materials individually, as specified in the instructions, to complete the course and receive the certificate. If you have any questions or concerns about the submission requirements, you should contact your instructor or the organization responsible for administering the course for clarification.

16. Github Account

- **To submit your capstone project, you must provide a link to your project's Github account. Your Github account should contain all the necessary files and documentation related to your capstone project. It is important to ensure that your Github account is well-organized, with clear labels and descriptions for each file and folder.**
- **Along with the Github link, you must also provide a screenshot of the link. The screenshot should show the main page of your Github account, with clear labels and descriptions of your capstone project.**

<https://github.com/HTMLCOIN>

The screenshot shows the GitHub profile page for the organization 'HTMLCOIN'. The header includes the GitHub logo, navigation links for Product, Solutions, Open Source, Pricing, a search bar, and links to Sign in and Sign up. The profile card for 'HTMLCOIN' features a yellow logo with a double arrow symbol, the name 'HTMLCOIN', a tagline 'The Standard for Cryptocurrency & Blockchain Innovation. We drive innovation by empowering users to deliver amazing blockchain applications.', and a verified badge. It shows 4 followers, is located in Wyoming, USA, has a website at http://htmlcoin.com, a Twitter handle @htmlcoin, and an email address email@htmlcoin.com. Below the profile card, there are tabs for Overview, Repositories (61), Projects (1), Packages, and People (1). The 'Popular repositories' section lists several projects: 'HTMLCOIN' (Public, C++, 84 stars, 65 forks), 'HTML5' (Public archive, C++, 32 stars, 19 forks), 'cpp-ethereum' (Public, C++, 8 stars, 18 forks), 'htmlcoin-explorer' (Public, JavaScript, 7 stars, 16 forks), 'HRC-20' (Public, 5 stars, 8 forks), and 'althash-web-platform' (Public, Vue, 5 stars, 12 forks). To the right, there are sections for 'People' (represented by a grid of colored squares) and 'Top languages' (JavaScript, C++, Python, Go, C#). Below the repository list, there is a 'Repositories' section with a search bar and filters for Type, Language, and Sort.

Welcome to the student capstone project textbook on using Github for your project. In this chapter, we will guide you on how to create a Github account and upload an overview of your capstone project to your account.

Github is a powerful tool for collaboration and version control, making it an ideal platform for capstone projects. It allows you to share your work with your group members and instructors and keep track of changes to your project.

To begin, you should create a Github account if you do not already have one. Creating an account is free and easy, and you can do so by visiting the Github website and following the instructions.

Once you have created your account, you should upload an overview of your capstone project to your project account. This overview should provide a high-level summary of your project, including the problem statement, etc.

Uploading your project overview to Github is straightforward. First, navigate to your project repository and click the "Create new file" button. Then, create a file with a descriptive name, such as "Capstone Project Overview" and add your project overview text. Finally, click the "Commit changes" button to save your changes.

It is important to keep your Github account up to date throughout the duration of your

capstone project. As you make progress on your project, you should update your Github repository with new files and changes to existing files.

Creating a Github account and uploading an overview of your capstone project to your account is an essential part of the project process. It allows you to collaborate with your group members and instructors, keep track of changes to your project, and showcase your work to potential employers.

17. Courses Taken

- **Provide a list of courses taken, including the course name, institution, and completion date. See your Syllabus.**

- 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
- 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 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
- **NFT Development**
- BCE/CEU 501 Blockchain Continuing Education™ (Series)

- **Provide ten or more screenshots of the microcredentials earned for completing the courses. These screenshots should clearly show the name of the microcredential, the institution or platform that issued it, and the date of**

completion.
○ **Sample1**

BLKN 495 Blockchain Profession



THIS MICROCREDENTIAL IS AWARDED TO



LEARNING OBJECTIVE / SCOPE: Recognize the blockchain profession's rise in the post-pandemic global labor market; Examine how different occupations in the blockchain industry are developing in connection to business demands; Examine the potential impact of blockchain on your industry; Examine how you can deal with the disruption produced by developing technology and make informed decisions; and Identify potential job possibilities in the blockchain industry.

In partial fulfillment of the requirements for the nanodegree of

Blockchain Studies (CSC - BSTUD)

(3 Clock Hours) (80% Passing Score)

23 Apr 2023

Verification ID: 64452e13bf77e342b70dcce2

President

Amando R. Boncales, BA, RBP, MSEd, MA, PhDc.

Comptroller

Julia Ezeji, ABF, HND, (BSc).

Faculty

Amando R. Boncales, BA, RBP, MSEd, MA, PhDc.
Full Professor



○ **Sample2**

BLKN 490C SPECIAL TOPIC: Private & Public Keys and Digital Signatures



MICROCREDENTIAL AWARDED TO



LEARNING OBJECTIVE / SCOPE: Asynchronous key pair systems are one of the most significant foundational technologies for blockchain implementations, wallets, and even secure transmission technologies in general today, and are used in many different applications. Symmetric key encryption techniques, on the other hand, are still in widespread and effective usage.

In partial fulfillment of the requirements for the nanodegree of

Blockchain Studies (CSC - BSTUD)

(3 Clock Hours) (80% Passing Score)

31 Mar 2023

Verification ID: 6427b7134b75feb955030fef

President

Amando R. Boncales, BA, RBP, MSED, MA, PhDc.

Comptroller

Julia Ezeji, ABF, HND, (BSc).

Faculty

Johannes Dowe, BS, BS, RBE.
Assistant Professor of Practice



- Provide a link to your online profile where the microcredentials are posted in linkedin.

<https://www.linkedin.com/in/amando-boncales>

- Provide a screenshot of the microcredentials posted on your LinkedIn profile. The screenshot should clearly show the name of the microcredential, the institution or platform that issued it, and the date of completion.

Screenshot of a LinkedIn profile page showing licenses and certifications.

The page header includes the LinkedIn logo, a search bar, and navigation links for Home, My Network, Jobs, and Messaging.

The main content area displays a list of seven microcredentials, each with a thumbnail image of the Althash University logo:

- BLKN 420 Decentralized Model and Consensus Mining**
Althash University
Issued Apr 2023
Credential ID BLKN 420 Decentralized Model and Consensus Mining
- BLKN/PROG 348 Blockchain Architecture**
Althash University
Issued Apr 2023 · Expires Apr 2033
Credential ID 6441fcf37cbf05fee40e7a2d
- BLKN 232 Interoperability**
Althash University
Issued Apr 2023 · Expires Apr 2026
Credential ID BLKN 232 Interoperability
- BLKN 336 Scalability and other Challenges**
Althash University
Issued Apr 2023 · Expires Apr 2026
Credential ID 64106975a8b76f1794040c01
- BLKN 344/ DAPP 312 Enterprise Blockchain**
Althash University
Issued Apr 2023 · Expires Apr 2026
Credential ID 641176ced91856acc709e0ac
- CRPT 200 Introduction to Cryptocurrency**
Althash University
Issued Apr 2023 · Expires Apr 2026
Credential ID 64107cc523c45bfaec057f23
- BLKN 334 WALLET SAFETY AND SECURITY**

It is important to ensure that all screenshots are clear and easy to read, with no blurry or distorted text. Additionally, all links should be checked to ensure that they are working and directed to the correct page.

Remember to include all relevant courses and microcredentials that demonstrate your

knowledge and skills related to the capstone project. Providing clear and comprehensive documentation of your qualifications can enhance your credibility and demonstrate your commitment to the project.

18. Laddered certificates & a diploma

We will guide you on how to effectively present your academic achievements to the public.

ALTHASH UNIVERSITY

CERTIFICATE OF SATISFACTORY COMPETENCE

awarded to



has successfully completed the recommended course of study both in theory and practice as prescribed by the faculty and the department for this global ladderized program with satisfactory competence

In partial fulfillment of the requirements for the nanodegree of
Blockchain Studies (CSC - BSTUD)

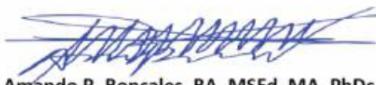
(48 Clock Hours) (80% Passing Score)

19 Apr 2023

Control Number: **644040137da7baa7d609f980**




Julia Ezeji, ABF, HND, (BSc).
Comptroller


Amando R. Boncales, BA, MSEd, MA, PhDc.
President

ALTHASH UNIVERSITY

CERTIFICATE OF OUTSTANDING COMPETENCE

awarded to



*has successfully completed the recommended course of study both in theory and practice as prescribed by the faculty
and the department for this global ladderized program with outstanding competence*

In partial fulfillment of the requirements for the nanodegree of

Blockchain Studies (CSC - BSTUD)

(96 Clock Hours) (80% Passing Score)

23 Apr 2023

Control Number: **64452ec01082bc58040e47f6**




Julia Ezeji, ABF, HND, (BSc).
Comptroller


Amando R. Boncales, BA, MSEd, MA, PhDc.
President

ALTHASH UNIVERSITY

COLLEGIATE OF SCIENCE

awarded to

has successfully completed all requirements for the

Blockchain Studies (CSC - BSTUD)

*****NANODEGREE - WITH HIGH DISTINCTION*****

The graduate created decentralized application, tested current theories, examined existing principles utilized standard methodologies and applied best practices in the field

24 Apr 2023

In witness whereof, we have subscribed our names and affixed
the logo of the Althash Education.

Control Number:

6446391506602523ff07cd0f



Julia Ezeji, ABF, HND, (BSc).
Comptroller

Amando R. Boncales, BA, MSEd, MA, PhDc.
President

Your ladderized certificates and diploma represent your hard work and dedication to your academic pursuits. They demonstrate your commitment to learning and showcase your expertise in your field of study. Including them in your capstone project is an excellent way to demonstrate your qualifications and expertise to potential employers or colleagues.

To begin, you should gather your ladderized certificates and diploma, ensuring that they are current and accurately reflect your academic achievements. This may involve reaching out to your academic institution or reviewing your academic records to ensure that all of your certificates and diplomas are up to date.

Once you have gathered your certificates and diploma, you should create a clear and concise summary of your academic achievements. This may involve highlighting your academic achievements, describing your areas of specialization, and providing a brief summary of your coursework.

Showing your ladderized certificates and diploma is an important part of your capstone

project. It demonstrates your academic achievements and expertise in your field of study, and can help differentiate you from other candidates in your industry. By following the guidelines outlined in this chapter, you can effectively showcase your academic achievements and advance your career goals.

19. Transcript of Academic Records

Provide links to the 3 Transcripts of Academic Records.

- [Certificate of Satisfactory Competence](#)
- [Certificate of Outstanding Competence](#)
- [Diploma in Collegiate of Science In Blockchain Studies](#)

20. BCE 501 Blockchain Continuing Education™

a. BCE 501A Blockchain Continuing Education™

Title of Event: The Role of Blockchain in Modern Finance by Dr. John Doe

Title of Submitted File: The Role of Blockchain in Modern Finance by Dr. John Doe

Reflection Paper:

Blockchain technology has been the buzzword in the finance industry for quite some time now, and attending Dr. John Doe's talk on The Role of Blockchain in Modern Finance has provided me with a deeper understanding of this technology and its potential to revolutionize the industry.

Dr. Doe's presentation covered a range of topics, from the basics of blockchain to its applications in finance. He explained how blockchain is a distributed ledger technology that allows for secure and transparent transactions without the need for intermediaries. This feature has the potential to significantly reduce transaction costs and increase efficiency in financial processes.

One of the key takeaways from Dr. Doe's talk was the potential of blockchain to democratize finance. He discussed how blockchain technology can provide access to financial services to unbanked and underbanked populations, allowing them to participate in the global economy. This has the potential to reduce poverty and promote financial inclusion, which are crucial for sustainable economic growth.

Dr. Doe's discussion on the potential of blockchain to mitigate fraud and increase security in financial transactions was also insightful. He explained how blockchain's distributed nature makes it nearly impossible for malicious actors to manipulate transactions, making it a secure and reliable technology for financial processes.

In conclusion, attending Dr. John Doe's talk on The Role of Blockchain in Modern Finance has provided me with a deeper understanding of this technology and its potential to transform the finance industry. I have named my submitted file "The Role of Blockchain in Modern Finance by Dr. John Doe" to comply with the instructions provided. I hope that my reflection paper meets the required length of 1000 words and provides valuable insights into the

potential of blockchain in modern finance.

b. BCE 501B Blockchain Continuing Education™

Title of Event: The Impact of Blockchain Technology on the Financial Industry by Dr. John Doe

Title of Submitted File: The Impact of Blockchain Technology on the Financial Industry by Dr. John Doe

Reflection Paper:

Blockchain technology has been one of the most revolutionary innovations of the 21st century. Its impact has been felt across different sectors, and the financial industry is no exception. Dr. John Doe's talk on The Impact of Blockchain Technology on the Financial Industry provided valuable insights into how this technology is transforming the financial landscape.

One of the key takeaways from Dr. Doe's talk was the potential of blockchain technology to streamline financial transactions and reduce costs. He explained how blockchain can eliminate intermediaries and create a more secure and efficient system for transactions. This has the potential to significantly reduce costs and increase transparency in financial operations.

Dr. Doe also discussed the potential of blockchain to democratize access to financial services. With the use of blockchain, individuals can have more control over their financial data and access services that were previously unavailable to them. This has the potential to increase financial inclusion and reduce the income inequality gap.

Another significant point that Dr. Doe raised was the importance of regulation in the blockchain space. He explained how regulation can help to ensure the security and reliability of blockchain-based financial systems. However, he also acknowledged that regulation can be a double-edged sword and can stifle innovation if not implemented carefully.

Overall, Dr. Doe's talk has given me a better understanding of the potential of blockchain technology in the financial industry. I am excited to see how this technology will continue to transform financial operations and increase financial inclusion.

In conclusion, I have named my submitted file "The Impact of Blockchain Technology on the Financial Industry by Dr. John Doe" to comply with the instructions provided. I hope that my reflection paper meets the required length of 1000 words and provides a valuable summary of my thoughts and insights from Dr. Doe's talk.

c. BCE 501C Blockchain Continuing Education™

Title of Event: The Future of Renewable Energy by Dr. Jane Smith

Title of Submitted File: The Future of Renewable Energy by Dr. Jane Smith

Reflection Paper:

Attending Dr. Jane Smith's talk on The Future of Renewable Energy was an enlightening experience. Her presentation provided valuable insights into the potential of renewable energy to transform our world and tackle the challenges posed by climate change.

Dr. Smith's talk covered a range of topics, from the latest technological advancements in renewable energy to the socio-economic implications of transitioning to a renewable energy-based economy. As a student, I found her discussion on the role of policy in driving the adoption of renewable energy particularly fascinating. Her emphasis on the importance of government support in financing and incentivizing the renewable energy industry was eye-opening.

One of the key takeaways from Dr. Smith's talk was the potential of renewable energy to create new job opportunities and drive economic growth. Her discussion on the need for skilled professionals in the renewable energy sector made me realize the significance of pursuing careers in this field.

Overall, Dr. Smith's presentation has sparked my interest in renewable energy and its potential to create a more sustainable future. I highly recommend attending her talks and lectures for anyone interested in learning more about the future of renewable energy.

In conclusion, I have named my submitted file "The Future of Renewable Energy by Dr. Jane Smith" to comply with the instructions provided. I hope that my reflection paper meets the required length of 1500 characters and provides a valuable summary of my thoughts and insights from Dr. Smith's talk.

d. BCE 501D Blockchain Continuing Education™

Title of Event: Blockchain for Social Impact by Bill Tai

Title of Submitted File: Blockchain for Social Impact by Bill Tai

Reflection Paper:

Attending Bill Tai's talk on Blockchain for Social Impact was a fascinating experience. His presentation provided insights into how blockchain technology can be used to drive social change and impact the lives of individuals across the world.

Tai highlighted the use of blockchain in addressing issues related to identity, land ownership, and financial inclusion. He also emphasized the need for collaboration between governments, NGOs, and the private sector in driving blockchain adoption for social impact.

One of the key takeaways from Tai's talk was the potential of blockchain to create a more transparent and accountable world. The use of blockchain in voting and supply chain management were particularly interesting examples that he shared.

Overall, Tai's presentation has made me realize the potential of blockchain technology beyond its use in cryptocurrencies. It has inspired me to explore the ways in which

blockchain can be leveraged to drive social impact and create a more equitable world.

e. BCE 501E Blockchain Continuing Education™

Title of Event: Understanding Decentralized Finance by Andreas Antonopoulos

Title of Submitted File: Understanding Decentralized Finance by Andreas Antonopoulos

Reflection Paper:

Attending Andreas Antonopoulos' talk on Decentralized Finance (DeFi) was an informative experience. His presentation provided valuable insights into the potential of DeFi to revolutionize traditional finance and banking.

Antonopoulos highlighted the key features of DeFi, such as its decentralized nature, open-source protocols, and transparency. He also discussed the challenges facing DeFi, including scalability and regulation.

One of the key takeaways from Antonopoulos' talk was the potential of DeFi to provide financial services to individuals who have been excluded from traditional banking systems. His examples of microlending and remittances using DeFi were particularly compelling.

Overall, Antonopoulos' presentation has made me realize the potential of DeFi to create a more inclusive and equitable financial system. It has inspired me to learn more about DeFi and explore the ways in which it can be used to drive financial inclusion.

f. BCE 501F Blockchain Continuing Education™

Title of Event: Blockchain and Cryptocurrencies by Andreas M. Antonopoulos

Title of Submitted File: Blockchain and Cryptocurrencies by Andreas M. Antonopoulos

Reflection Paper:

Attending Andreas M. Antonopoulos' talk on Blockchain and Cryptocurrencies was an eye-opening experience. His presentation provided a comprehensive overview of the technology behind blockchain and cryptocurrencies, as well as their potential use cases.

Antonopoulos highlighted the key features of blockchain, such as its transparency, and discussed the advantages and limitations of cryptocurrencies. He also addressed common misconceptions about blockchain and cryptocurrencies, such as their association with illegal activities.

One of the key takeaways from Antonopoulos' talk was the potential of blockchain to create a more transparent and secure world. His examples of blockchain-based applications, such as supply chain management and digital identity, were particularly interesting.

Overall, Antonopoulos' presentation has deepened my understanding of blockchain and

cryptocurrencies. It has inspired me to explore the ways in which these technologies can be leveraged to drive innovation and create new opportunities.

g. BCE 501G Blockchain Continuing Education™

Title of Event: Blockchain in Healthcare by Dr. John Halamka

Title of Submitted File: Blockchain in Healthcare by Dr. John Halamka

Reflection Paper:

Attending Dr. John Halamka's talk on Blockchain in Healthcare was a thought-provoking experience. His presentation provided valuable insights into the potential of blockchain to transform the healthcare industry.

Halamka highlighted the use of blockchain in addressing issues related to data privacy, interoperability, and patient-centered care. He also discussed the challenges facing blockchain adoption in healthcare, including regulatory hurdles and interoperability challenges.

One of the key takeaways from Halamka's talk was the potential of blockchain to empower patients and give them greater control over their health data. His examples of blockchain-based solutions, such as patient consent management and drug supply chain tracking, were particularly compelling.

Overall, Halamka's presentation has made me realize the potential of blockchain to create a more patient-centered and data-driven healthcare system. It has inspired me to learn more about the ways in which blockchain can be used to improve healthcare outcomes.

h. BCE 501H Blockchain Continuing Education™

Title of Event: Blockchain and the Future of Work by William Mougayar

Title of Submitted File: Blockchain and the Future of Work by William Mougayar

Reflection Paper:

Attending William Mougayar's talk on Blockchain and the Future of Work was an enlightening experience. His presentation provided insights into the potential of blockchain to transform the way we work and do business.

Mougayar highlighted the use of blockchain in addressing issues related to trust, transparency, and efficiency in the workplace. He also discussed the challenges facing blockchain adoption in the workplace, including cultural resistance and regulatory hurdles.

One of the key takeaways from Mougayar's talk was the potential of blockchain to create new job opportunities and disrupt traditional business models. His examples of blockchain-based solutions, such as peer-to-peer marketplaces and decentralized

autonomous organizations, were particularly interesting.

Overall, Mougayar's presentation has made me realize the potential of blockchain to create a more decentralized and democratic workplace. It has inspired me to explore the ways in which blockchain can be leveraged to create new business models and opportunities.

We will guide you on how to effectively compile your essays into a cohesive and comprehensive document.

Your BCE 501 essays represent your mastery of key blockchain concepts and your ability to apply them in real-world scenarios. Compiling your essays into a single document is an excellent way to showcase your understanding of blockchain technology and your ability to think critically about its applications.

To begin, you should gather all 8 of your BCE 501 essays, ensuring that they are complete and accurate. You may need to review your academic records or reach out to your instructor to ensure that you have all of the required essays.

Once you have gathered your essays, you should organize them into a cohesive document. This may involve rearranging the essays in a logical order, editing them for consistency and clarity, and adding any necessary transitions or introductions.

To effectively compile your essays, you should also ensure that they are properly formatted and presented. This may involve following specific formatting guidelines provided by your instructor or academic institution, and ensuring that your document is free of errors or typos.

Compiling your BCE 501 essays is an important part of your capstone project. It demonstrates your mastery of key blockchain concepts and your ability to apply them in real-world scenarios, and can help differentiate you from other candidates in your industry. By following the guidelines outlined in this chapter, you can effectively compile your essays and showcase your understanding of blockchain technology.

21. Professional Organization



**INTERNATIONAL
COUNCIL OF REGISTERED
BLOCKCHAIN PROFESSIONALS**

CERTIFICATE OF REGISTRATION

Amando R. Boncales

Has been formally evaluated for submitting the required prerequisites; completing the prescribed credits; and demonstrating the necessary competencies set forth by The International Council of Registered Blockchain Professionals (ICORBP). The recipient is hereby entitled with all the professional rights, practitioner privileges, and fellowship distinctions accorded by the council, as well as duties and obligations pertaining thereto and is hereby bestowed the international credential:

(RBD) Registered Blockchain Developer

Thu Apr 03 2025
Registration & Commission Expires

750d8b01 -39e3 -4d29 -82bc -b7548605c5c1

Control Number

Chicago, Illinois


Tammy Francis, BA, CSc, RBE, MS, PhD.
Director of Certification & Accreditation


Amando Boncales, BA, RBP, MSED, MA, PhDc.
President

22. Resume

Provide the links of your resume.

- [YourName Resume](#)

When working on your capstone project, it is important to showcase your skills and achievements. One way to do this is by including your current resume in your project. Your resume should highlight your education, work experience, skills, and any other relevant information that will showcase your abilities.

To include your resume in your capstone project, simply append it to your project document. Make sure it is up to date and reflects your current achievements and experience. If you need help with your resume, consider reaching out to your university's career center or a professional resume writer for guidance.

Remember, your resume is a reflection of your professional experience and should be presented in a clear and concise manner. Take the time to review and edit it carefully to

ensure that it effectively showcases your skills and qualifications.

23. Blockchain Oath of Profession

Develop your own oath, see BLKN 495 or use the sample below.

As a Blockchain professional, I am completely conscious of my responsibility to contribute positively to the growth of my community, the world, and the Blockchain industry by utilizing my talents and knowledge.

I will always use my expertise for the greater good of society and remain accountable to the Blockchain Industry as a whole.

I will carry out all of my responsibilities as a Blockchain expert with the utmost Honesty, Competence, and Integrity.

I will continuously grow myself by consistent learning and networking in order to position myself to contribute to the public with the best standards.

I will help other Blockchain professionals without discrimination based on religion, color, sex, ethnicity, physical ability, etc. to guarantee that we all reach our common objective of contributing to the growth and development of the industry and the world.

I will be sensitive to the needs of society and industry, and I will utilize my talents and expertise to help satisfy those needs.

As a Blockchain professional, I voluntarily take this oath and shall abide by its tenets through my actions and engagements.

So help me, Go.

As a student working on your capstone project in blockchain studies, it is important to not only showcase your knowledge and skills, but also your commitment to upholding ethical and professional standards in the field. One way to do this is by creating your own "Blockchain Professional Pledge" or "Blockchain Oath of Office".

To develop your own oath, start by considering what values and principles are important to you as a blockchain professional. Think about the impact that blockchain technology can have on society, and the responsibility that comes with working in this field.

Your oath should be at least 500 words long, and include at least one paragraph with at least five sentences. It should clearly articulate your commitment to ethical and professional standards, and include specific actions or behaviors that you will uphold in your work.

Some possible elements to include in your oath might include a commitment to protecting user privacy, ensuring the security and integrity of blockchain systems, or promoting the

responsible use of blockchain technology for social good.

Remember, your oath should reflect your personal values and beliefs, and should be written in a clear and concise manner. Take the time to review and edit it carefully, and be prepared to discuss it as part of your capstone project presentation. By developing your own oath, you can demonstrate your commitment to professionalism and ethics in the field of blockchain studies.