Project Plan

MariTime

Business Statement:

Our solution aims to revolutionize the Maritime Industry by digitizing and decentralizing the process of certification issuance, thus eliminating the need for physical certificates. By leveraging blockchain technology, we will create a secure, tamper-proof system that enables training institutes to issue e-certificates which can be shared and verified globally. This system will not only streamline the certificate issuance process but will also enhance the credibility of certificates. Furthermore, seafarers will be provided a comprehensive digital ID encapsulating their complete training records, making it easily accessible and verifiable by third parties. With this innovative solution, we intend to simplify, secure, and accelerate the certification processes within the maritime industry, ushering in a new era of digitization and trust.

Goals of the projec:

- **Develop a Secure and Tamper-Proof System:** The main goal is to create a blockchain-based system that is impervious to fraud or tampering. This is crucial in ensuring the credibility and validity of the e-certificates.
- **Digitize Certification Issuance:** To eliminate the need for physical certificates, making the process of issuance, sharing, and verification of seafarer's training certificates digital and efficient.
- **Create Comprehensive Digital IDs for Seafarers:** The system aims to encapsulate a seafarer's entire training history, including all e-certificates, into a single digital ID. This would simplify the process of accessing and sharing these records.
- **Facilitate Global Verification:** By using a universally recognized format for these digital IDs and e-certificates, third parties worldwide should be able to easily verify a seafarer's credentials, increasing their mobility and employability.
- **Improve Operational Efficiency:** By digitizing and streamlining the issuance and verification process, the system would lead to significant cost and time savings for training institutes, seafarers, and verification parties.
- **Enhance Transparency and Trust:** By recording all transactions on a blockchain, the system will provide a transparent audit trail, thereby increasing trust among all stakeholders in the maritime training and certification process.
- **Promote Adoption of Blockchain Technology in the Maritime Industry:** A successful implementation could pave the way for broader adoption of blockchain technology in the maritime industry, including areas such as cargo tracking, supply chain management, and crew management.

Project Deliverables:

- **Detailed Project Plan**: Includes all project stages, major milestones, resource allocation and timeline. It should provide a comprehensive roadmap that guides the project from start to finish.
- **Design Documentation**: Detailed technical and user experience (UX) design documentation, outlining how the blockchain-based system, web applications, and native app will function and interact with each other.
- **Blockchain Infrastructure**: A decentralized, tamper-proof blockchain system capable of securely issuing, storing, and verifying digital certificates. This should include appropriate encryption methods, consensus mechanisms, and data backup strategies to ensure reliability and security.
- **Training Institute Web App**:
    - **Front-end**: User-friendly interface for institutes to register students, issue certificates, and view student profiles.
    - **Back-end:** Server-side logic to support the app functionalities, including integration with the blockchain infrastructure.
- **Seafarer Native App:**
    - **Front-end**: An easy-to-use interface for seafarers to create profiles, scan and store documents, and share certificates/resumes.
    - **Back-end**: Server-side logic supporting app functionalities and seamless interaction with the blockchain network.
- **Third-Party Verification Web App:**
    - **Front-end:** Interface enabling third parties to verify certificates using QR codes.
    - **Back-end:** Server-side logic to support the app functionalities, including data retrieval from the blockchain.
    - **Security**: Implementation of secure data access protocols.
- **System Integration and Testing**:
    - **Unit Testing**: Testing of individual components to verify their correct functioning.
    - **Integration Testing**: Testing the interoperability of all system components.
    - **Security Testing**: Ensuring that the system is safe from potential threats and vulnerabilities
- **Project Closure Report**: Detailed document of project outcomes, highlighting achieved milestones, potential areas of improvement, and lessons learned for future reference.

Project Scope:

The scope of this project encompasses the design, development, testing, and implementation of a blockchain-based system for digital certificate issuance and verification in the maritime industry. The system will include a web application for training institutes and government authorities, a native mobile application for seafarers, and a web application for third-party entities like employers and auditors.

Features Included:

- **Blockchain-based Infrastructure**: A secure and tamper-proof blockchain system that will be the foundation for the issuance, storage, and verification of digital certificates.
- **Training Institute Web App:**
    - **Student Registration:** Institutes can register students by scanning a QR code from the seafarer's native app.
    - **Certificate Issuance:** After course completion, institutes can issue digital certificates directly to the seafarer's profile in the blockchain system.
- **Seafarer Native App:**
    - **Profile Creation**: Seafarers can create a profile using phone number or email, and the system will assign a unique, permanent ID.
    - **Biometric Authentication**: Includes Face ID or fingerprint scanning to ensure user identity and data security.
    - **Document Scanning:** Allows seafarers to scan and save their documents using their phone's camera.
    - **Certificate Sharing:** Seafarers can easily send and share their certificates or resumes with potential employers directly from the app.
- **Third-Party Verification Web App:**
    - **Certificate Verification:** Enables third parties to verify the certificates by scanning the QR code generated on the seafarer's native app or the QR code on the digital certificates.