**System Requirements for A Student Enrolment Management System Using Blockchain Technology**

**1. User Registration**

* **User Roles**: Admins, Staff, Students.
* **Student Registration**:
  + Collect basic details like name, address, date of birth, and contact information.
  + Generate student ID and assign a ticket number.
* **Admin & Staff Registration**: Set up roles with varying permissions (view, edit, add).
* **Student Identity Verification**: Blockchain will be used to securely store and verify student identities and credentials. Student’s data will be registered on the blockchain, ensuring as soon as their identity is verified, it cannot be tampered with.

**2. Document Upload & Storage**

* **Document Upload**: Upload of various documents such as SSCE and JAMB results, certificates, passport photographs, medical reports, E-Signatures, proof of identification (NIN), including image formats . A niche feature will be the **drag-and-drop** functionality for ease of use. *A hash of each uploaded document (such as SSCE or medical report) will be stored on the blockchain to ensure document integrity. This way, any attempt to tamper with the documents would be detected.*
* **Document Storage**: The documents are saved in a structured folder system using a database (by studentID/course). Timestamps will also be recorded to monitor the workflow of the submission/upload process.

**3. Document Approval**

* **Document Routing**: The documents uploaded by the students are routed to the designated staff.
* **Document Validation**: The staff can then review and approve/reject uploaded documents. In the instance of a rejected document, an email/notification will be sent to the student notifying them with the exact document that was rejected and optionally a reason for its disapproval.
* **Documment Transfer**: The system will also support the ability of a staff to send/forward a document to another staff e.g., The school officer transferring a document to the registrar. This process eliminates the tedious process of students moving from office to office and makes the process much more seamless by also adding a visual illustration or waypoint showing the student the current location of his/her document.

**4. Application Status Tracking**

* **Application Progress**: Students can track the status of their application/enrolment. This will be implemented using blockchain technology and will be updated based on the approval status of their documents. Every stage of the Application; submission, document review, transfer of document, approval, rejection will be updated on the blockchain.

**5. Student Information Management**

* **Profile Management**: Students and staff can update their personal information if need be.
* **Records & Reports**: Admins/Staff can generate reports for student lists and enrolment status.

**6. Notification Communication and System**

* **Messages**: Allow communication between staff, and students via internal messaging using a waitlist system for handling multiple requests.
* **Announcements**: Admins can post announcements (e.g., enrolment deadlines).
* **Notifications & Email**: Automated emails for enrolment status updates. A notification may optionally be sent to the student for updates or important information.

**7. Security, Data Privacy & Logging**

* **Authentication**: Secure Login implementation with role-based access (students, staff, admins).
* **Role-based Access Control**: Only authorized personnel can view/edit specific information.
* **Data Encryption**: Secure sensitive information such as personal, academic data and medical records.
* **Audit Logs**: Record actions students/staff make for tracking and compliance. Every action taken by the students or staff will be logged on the blockchain ensuring integrity and accountability.

**8. Integration**

* **Third-party APIs**: Integration with smart contracts, document verification systems, and ticketing systems. A smart contract may be implemented to handle data verification/matching which makes verification of certificates or results with examination bodies easier.

**9. Submission Deadlines**

* **Handling Deadlines:** Smart contracts will be used to specify deadlines for document submission. They will automatically enforce deadlines, ensuring that submissions are only accepted within a specified window. If for example, a student(1) submits on time and another student(2) tries to submit after the deadline, student1 is marked as accepted and student2 attempt will be unsuccessfully logged and notify the admin or staff.
* **Extend Deadlines:** Ability to add grace period under certain conditions. i.e. if certain criteria are met (based on the admin’s approval), the deadline can be extended.

**10. Device Compatibility**

* **Cross-Platform Compatibility**: The system should be able to run seamlessly across multiple devices, ensuring extensive support for cross-platform usage.