

Project Overview

Capstone Project Name/Idea: ScholarTrust: Decentralized Scholarship Management System.

Project Description: ScholarTrust is a blockchain-based platform that ensures fairness, transparency, and accountability in the management and disbursement of scholarships. The platform allows students to apply for scholarships, track the status of their applications, and receive funds directly, all while maintaining an immutable, auditable record of every transaction. It eliminates corruption, delays, and favoritism in scholarship disbursement, ensuring that funds reach the intended beneficiaries in the right amounts.

Reason for Choosing this Project: In my state, the scholarship board has been plagued by corruption and inefficiency. Many students including me apply for scholarships with high hopes, only to find out later that funds have either been mismanaged, distributed unevenly, or not disbursed at all. Some students receive far less than they were promised, while others are left out entirely without explanation. I was a victim of it too, the **Borno State government scholarship (BSSB)** board have been partial, religiously and tribally biased.

This project is personal to me because I've been frustrated and have seen the frustration of hardworking students who are denied opportunities due to the failures of the system. With blockchain technology, I will build a transparent platform that ensures funds are distributed fairly and that every step in the process is visible to all stakeholders. This project aims to restore trust in scholarship programs and provide equal opportunities for students who truly deserve them.

Target Audience:

- **Country:** Nigeria, **State:** Borno State.
- Students in Secondary and Tertiary Institutions applying for Scholarships.
- Parents and Guardians who want to track scholarship applications and funds for their children.
- Borno State government scholarship (BSSB).
- Private Organizations and NGOs offering scholarships.

Value Proposition:

- **For Students:**
 - Apply for scholarships with the assurance that your application will be treated fairly.
 - Receive funds directly and in full, without intermediaries.
 - Track the entire process, from application submission to fund disbursement.
- **For Scholarship Providers:**
 - Maintain transparency in fund allocation.
 - Build trust and credibility with applicants and stakeholders.
 - Easily track and audit every transaction through immutable blockchain records.

Marketing and Distribution:

- **Local Partnerships:**
 - Collaborating with state scholarship boards to adopt the platform as a pilot solution.
 - Partnering with NGOs and private companies offering scholarships to onboard them.
- **Social Media:**
 - Creating awareness on social platforms like Facebook, Instagram, and Twitter, focusing on students and parents.
 - Sharing stories and testimonials from early adopters.
- **Community Outreach:**
 - Hosting workshops and seminars in schools, universities, and community centers to demonstrate the platform.
 - Educating students and institutions about how blockchain solves the problems of corruption and inefficiency.

Competitive Landscape:

While some platforms offer online scholarship application portals, they often lack transparency and can still be manipulated. ScholarTrust stands out by providing:

- A blockchain-powered system that eliminates tampering and favoritism.
- Real-time tracking of funds and applications.
- Immutable, auditable records that ensure accountability at every step.

Technical Details

Tech Stack:

- **Blockchain Platform:** Solana for fast, low-cost transactions.
- **Programming Languages:** Rust (for smart contracts).
- **Backend Infrastructure:** Anchor for Solana smart contract development.
- **Database:** IPFS for decentralized storage of supporting documents like transcripts and ID cards.
- **Wallet Integration:** Phantom or Solflare for secure, on-chain interactions.

Smart Contract Development:

- **Features:**
 - **Application Submission:** Students submit applications with required details and documents.
 - **Eligibility Verification:** Verified validators assess applications based on predefined criteria.
 - **Funds Disbursement:** Smart contracts release funds directly to students once approved.
 - **Transparency Dashboard:** Publicly accessible logs for fund tracking and auditing.
- **Testing and Security Audits:**
 - Write comprehensive tests using Anchor to simulate real-world scenarios.
 - Perform external security audits to ensure the platform is free from vulnerabilities.