

Decentralized Document Verification System

-What is the purpose of the project?

The purpose of this project is to develop a decentralized solution for document certification and authenticity verification using blockchain technology. Using MultiversX network and Rust-based smart contracts, the project ensures that digital documents and their metadata can be securely stored, verified, and tracked without relying on a central authority. The system aims to provide transparency, immutability, and trust for digital identity and document validation.

-What needs it tries to satisfy?

In a digital world where falsified documents and identity fraud are common, there is a strong need for a tamper-proof verification mechanism. This project addresses that need by creating a blockchain-based platform that:

- Stores document fingerprints on-chain for authenticity verification.
- Allows users to confirm document integrity and issuer identity in a transparent and decentralized way.
- Reduces dependency on third-party certification institutions.

-What are the components of your project?

- Smart Contract (Rust on MultiversX): Handles storing and retrieving document hashes, along with metadata such as issuer identity and timestamp.
- Frontend Interface (Web App): Allows users to upload a document, view its verification status, and interact with the blockchain.
- Wallet Integration: Users sign transactions and verify ownership through the xPortal wallet on the MultiversX testnet.
- Blockchain Layer: Ensures data integrity, decentralization, and transparency of all records.

-Timeline for development

1. Week 1 – Setup and Research
2. Week 2 – Smart Contract Development
3. Week 3 – Blockchain Deployment and Integration
4. Week 4 – Frontend Development
5. Week 5 – Testing and Presentation

All the tasks mentioned earlier will be assigned to Costache Tudor (solo project)