Decentralized Supply Chain Traceability System using Blockchain

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Introduction

- A decentralized supply chain traceability system; uses blockchain to securely track and verify product movement.
- Hosted on Azure, it allows users to interact with smart contracts through a web interface and MetaMask.

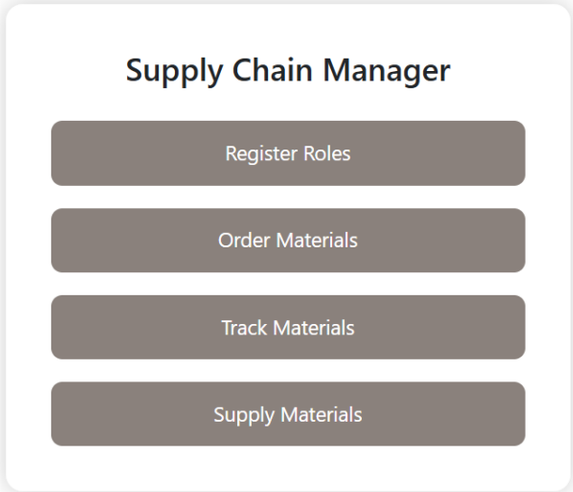
Motivation

- To enhance transparency, trust, and accountability in supply chains.
- Utilizing blockchain's immutability and decentralization for real-time product traceability.

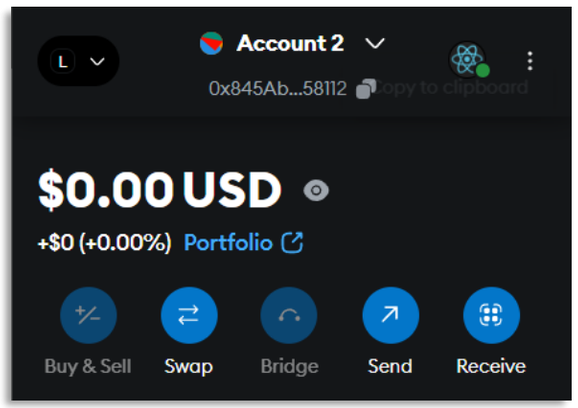
Objective

- To develop a decentralized system that enables secure, transparent, and tamper-proof tracking of products across the supply chain using blockchain technology.

Front-end Web DApp



Meta Mask Wallet



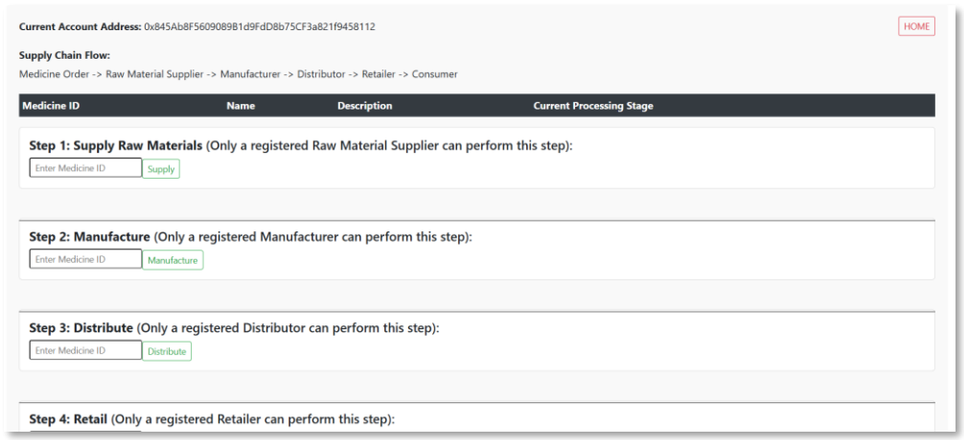
URLs to access the cloud Application

- http://40.71.163.63/
- http://koushikfinalyearproj.eastus.cloudapp.azure.com/

Tools & Applications

- Metmask
- Ganache
- Node Server
- Truffle
- Ethereum
- Azure VM

Results



- **Decentralized Access Control** – Users can interact with role-based blockchain operations securely via MetaMask and smart contracts.
- **Real-Time Traceability** – Every supply chain action is immutably recorded on the blockchain (Ganache), ensuring transparent and tamper-proof tracking of materials.
- **Cloud-Hosted Blockchain Interface** – A fully deployable VM on Azure allows remote users to access and test blockchain functionalities directly through their browser.