Project Name

Blockchain-based supply chain management program

WALMART HACKATHON

Team TechTrio

Team Member 1: I am Vibhuti Patil, a passionate B.Tech IT student, embracing tech and cultural diversity. I am always enthusiastic to participate in tech and cultural events. I find my true passion lies in the realm of coding and software development. Besides that, I love undertaking diverse projects and also loves to explore and implement different technologies.

Team member 2: I'm Siddhi Sonawane, with a stream Information Technology student currently pursuing B.tech. With a great interest in technology and problem solving I am always excited for hackathons and technical events. Looking forward for great learning and opportunities.

Team member 3: I'm Vaishnavi Gilbile, a dedicated Information Technology student currently pursuing B.tech in Cummins College of Engineering, Pune. With passion for technical things, I want to thrive in Blockchain development and Web development. Looking forward for having great learning experience through this hackathon

Summary

For supply chain management, we used blockchain to achieve transparency and complete visibility . Blockchain in context to our project is used to track the movement of products from supplier to consumer, ensuring authenticity and preventing tampering.

Each step of the supply chain, from sourcing raw materials to the final product reaching the consumer, is documented on the blockchain. This documentation includes details such as sender address, receiver address, pick up time, delivery time, price and status of shipment(pending,in-transit ,delivered) and payment status.

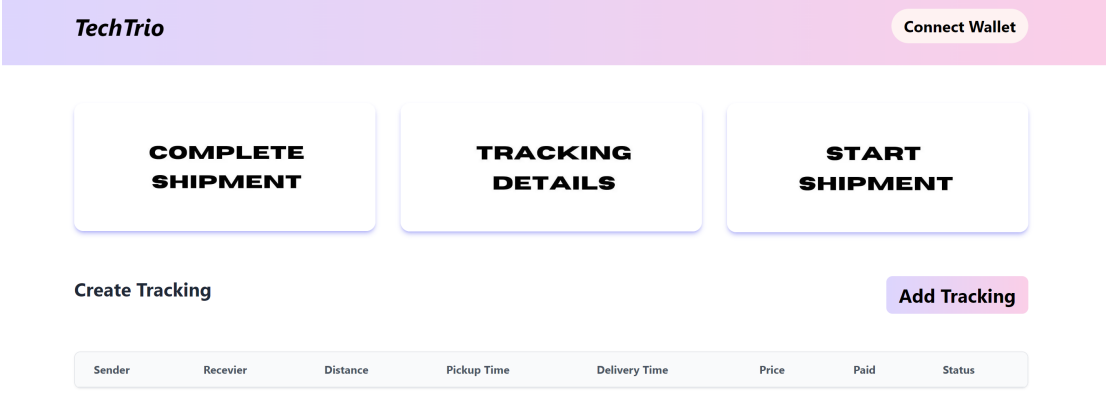
Smart contracts is integrated into the blockchain to trigger actions like payments, and notifications based on predefined conditions.

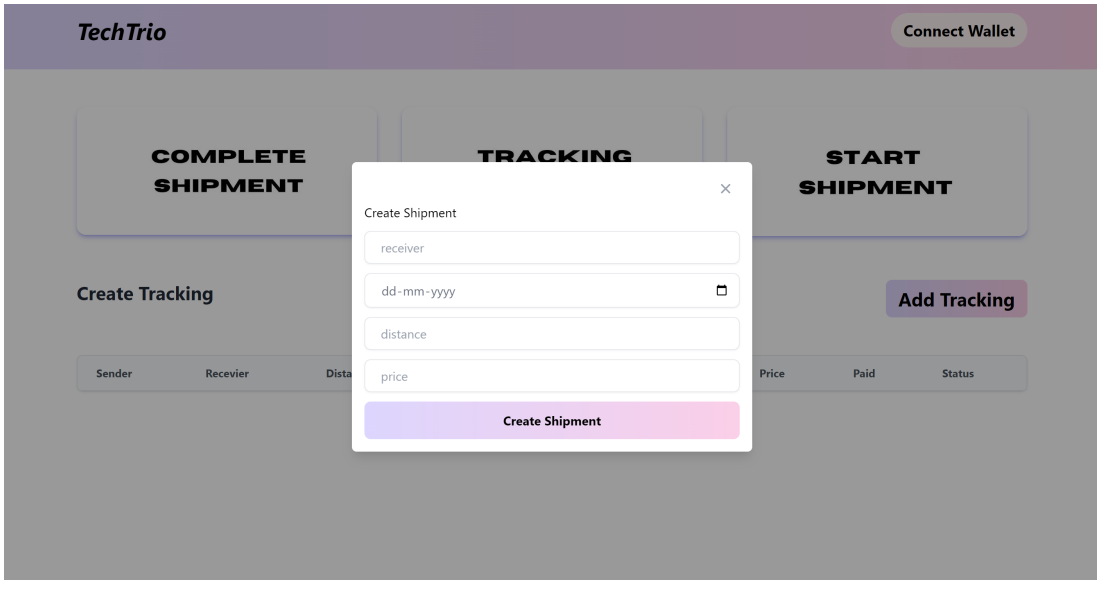
Blockchain is a emerging technology which is being embraced by large enterprises to improve operations, increase trust, and meet evolving consumer expectations. In our project we will leverage these features of Blockchain Technology for supplychain.

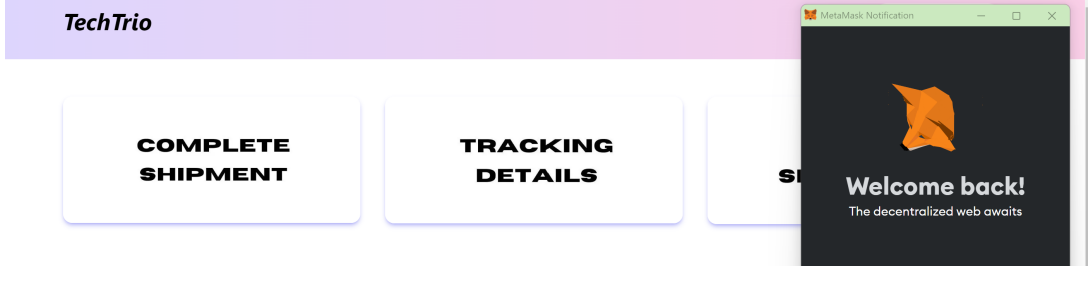
In our project, we used solidity to create smart contract in *tracking.sol* and we deployed this smart contract in *deploy.js* . In *tracking.sol* we created three function which contains are three main functionalities they are Create shipment , Start shipment, Complete shipment. We are initializing the blockchain using hardhat so it will become 12npx at node

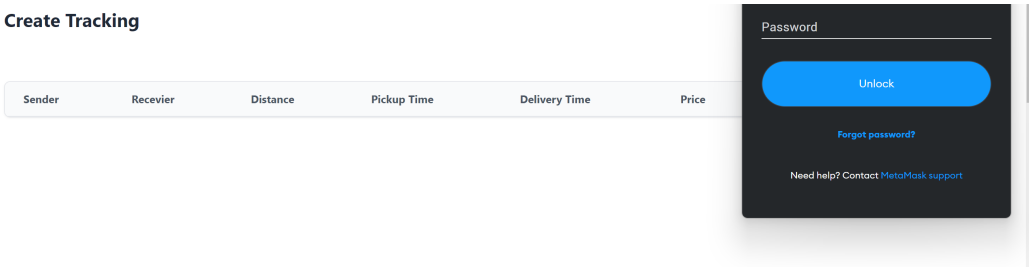
and this will run the local blockchain in our terminal. We are with 20 accounts and there private key and each account will have ten thousand ether. Then we have deployed the contract to get the tracking address.

So, other than smart contact we have created another file (*TrackingContext.js*) where all the function like tracking details, connect wallet where we are using Metamask which stores all the accounts and because Metamask connects to decentralized application. To summarize,we have two main files which contains all the functionalities needed, We have imported this two files to *index.js* were we have also imported all the react files(Navbar, footer, form, complete shipment etc.)









Tools

Development tools : Metamask(for connecting to wallet), solidity(programming language for smart contract), ethereum(public blockchain), web3model and hardhat, next.js, React(JavaScript framework).

SDK's : Vs code, GitHub.

Libraries : web3mode(JavaScript library).