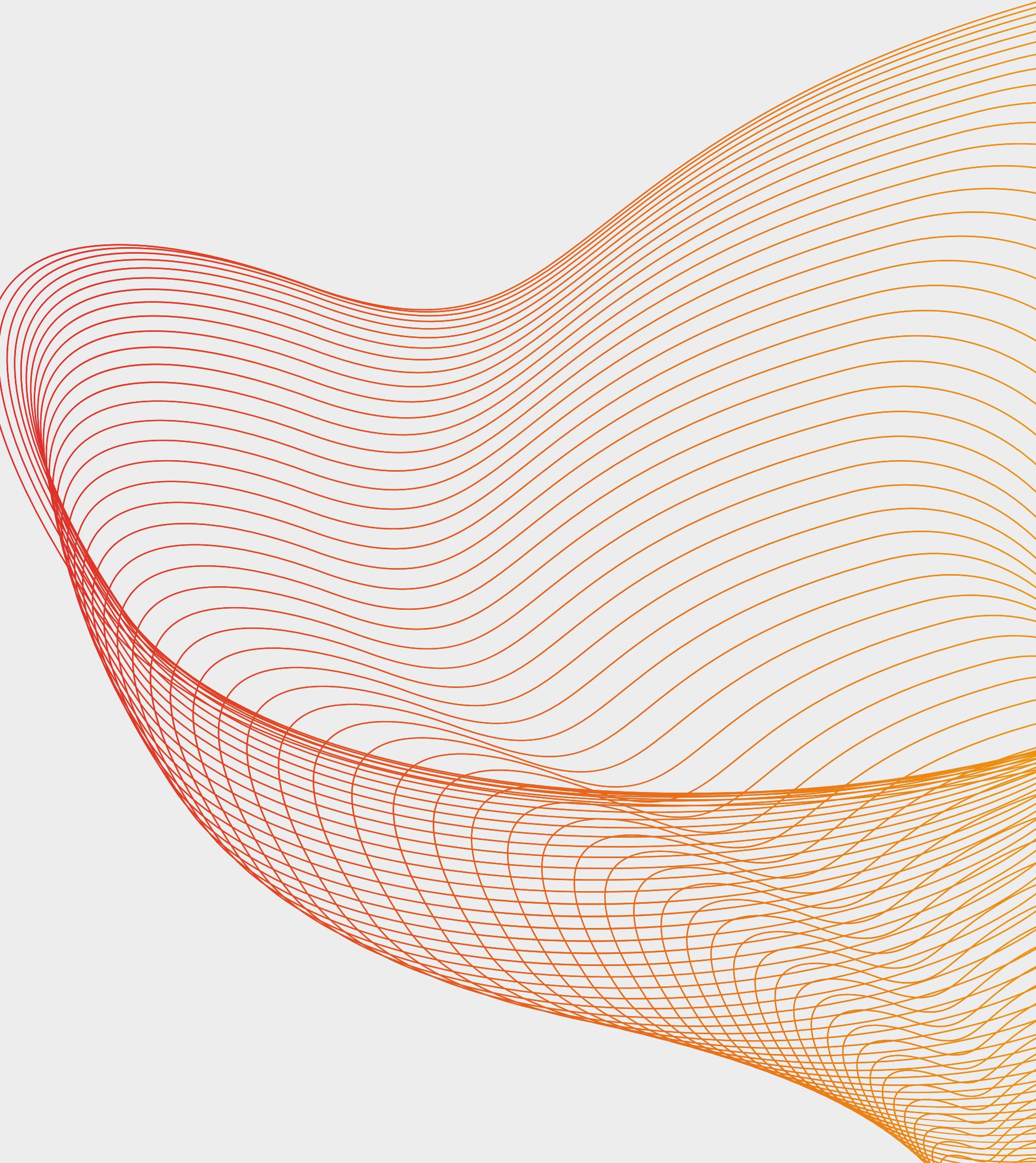


Inventory Management System



Team Members

Group No :- 2



Aayush Kulkarni

LIT2020012



Aayush Verma

LIT2020053

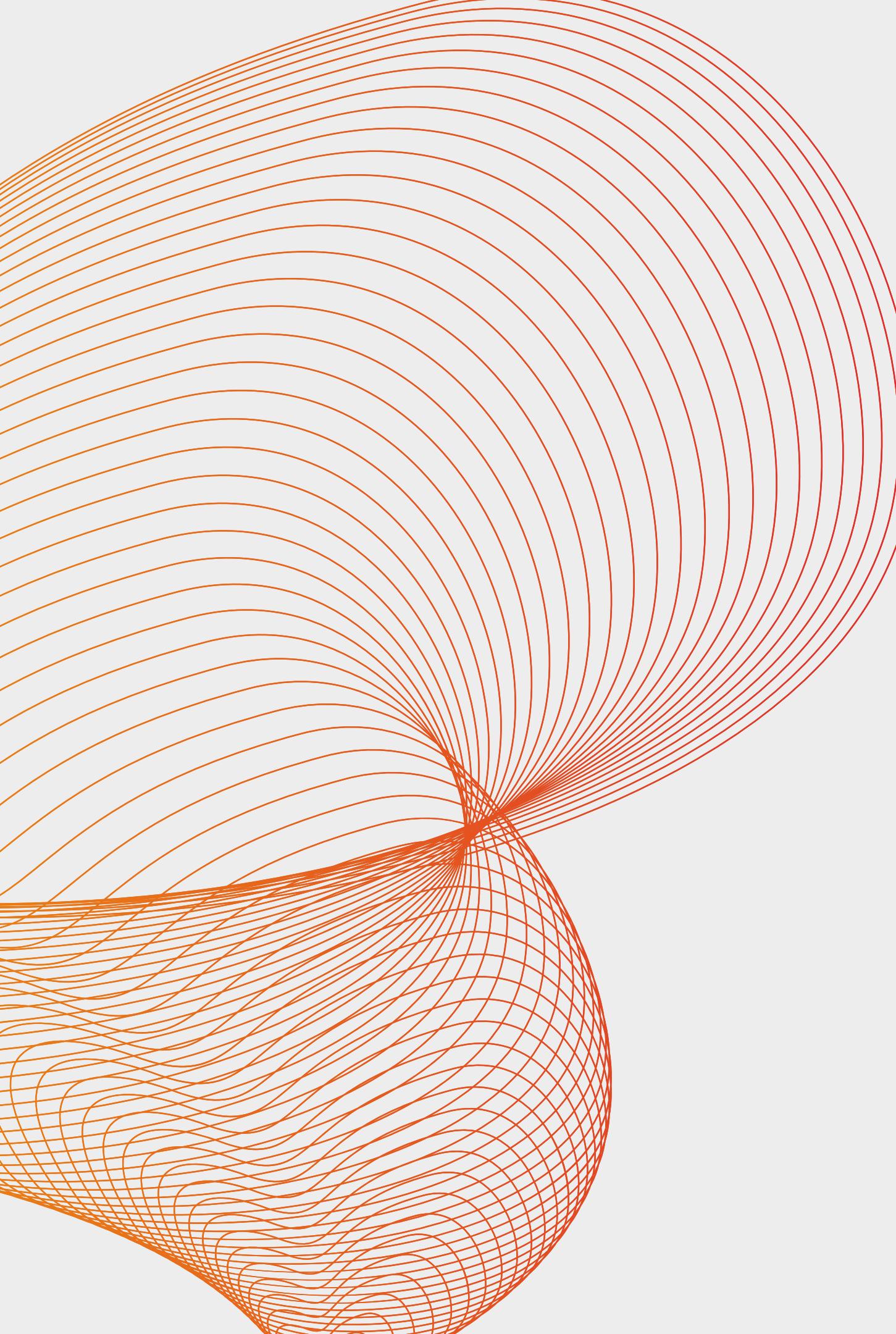
Table of Content

- Why
- About
- Use of Blockchain
- Technology Used
- Key Features
- Process Flow
- Demo Output
- Future Scope
- Conclusion

Why Inventory Management

- It is a critical aspect of running a successful business.
- Poor management reduces profitability and carrying cost.
- Inventory management is a key factor in supply chain management and logistics.
- Efficiently optimises businesses and their operations.



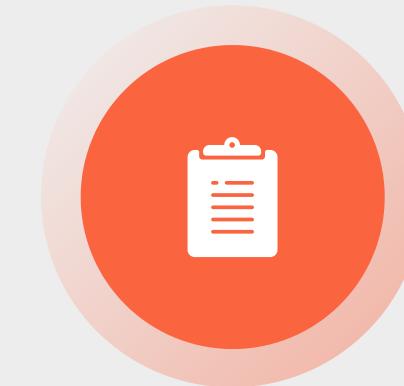


About the Project

- The DApp using blockchain provides automated inventory management, and increased transparency and accountability.
- By using smart contracts to manage inventory, our DApp reduces the risk of fraud and errors in the supply chain.
- By using a blockchain, businesses gain an advantage by optimising their operations.
- The DApp incorporates role based access control.

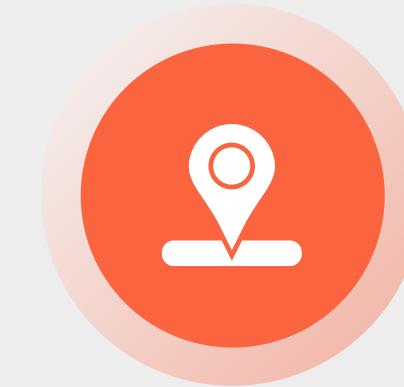
Why Blockchain

Advantages of making the traditional inventory management decentralized



Security & Transparency

Transparent way to track inventory, reducing the risk of fraud.



Fault Tolerance & Resilience

Decentralizing makes it operational even during network failures.

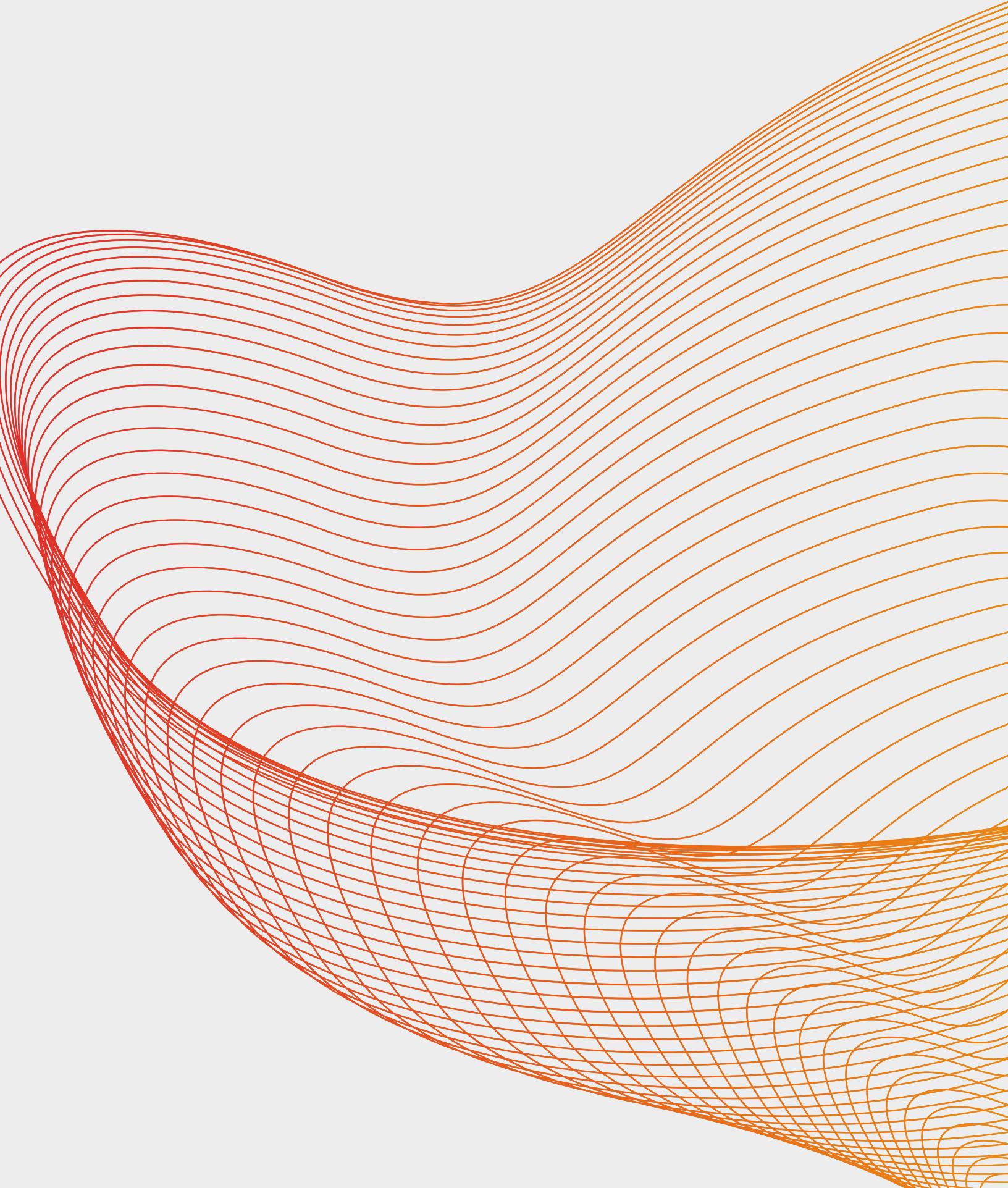


Cost Reduction

Decentralizing results in automation thus reducing cost and making it efficient.

Technology Used

- Ethereum Blockchain Technology
- Solidity
- ReactJs
- NodeJs
- Ganache
- Web3.js
- VsCode
- Metamask
- Truffle

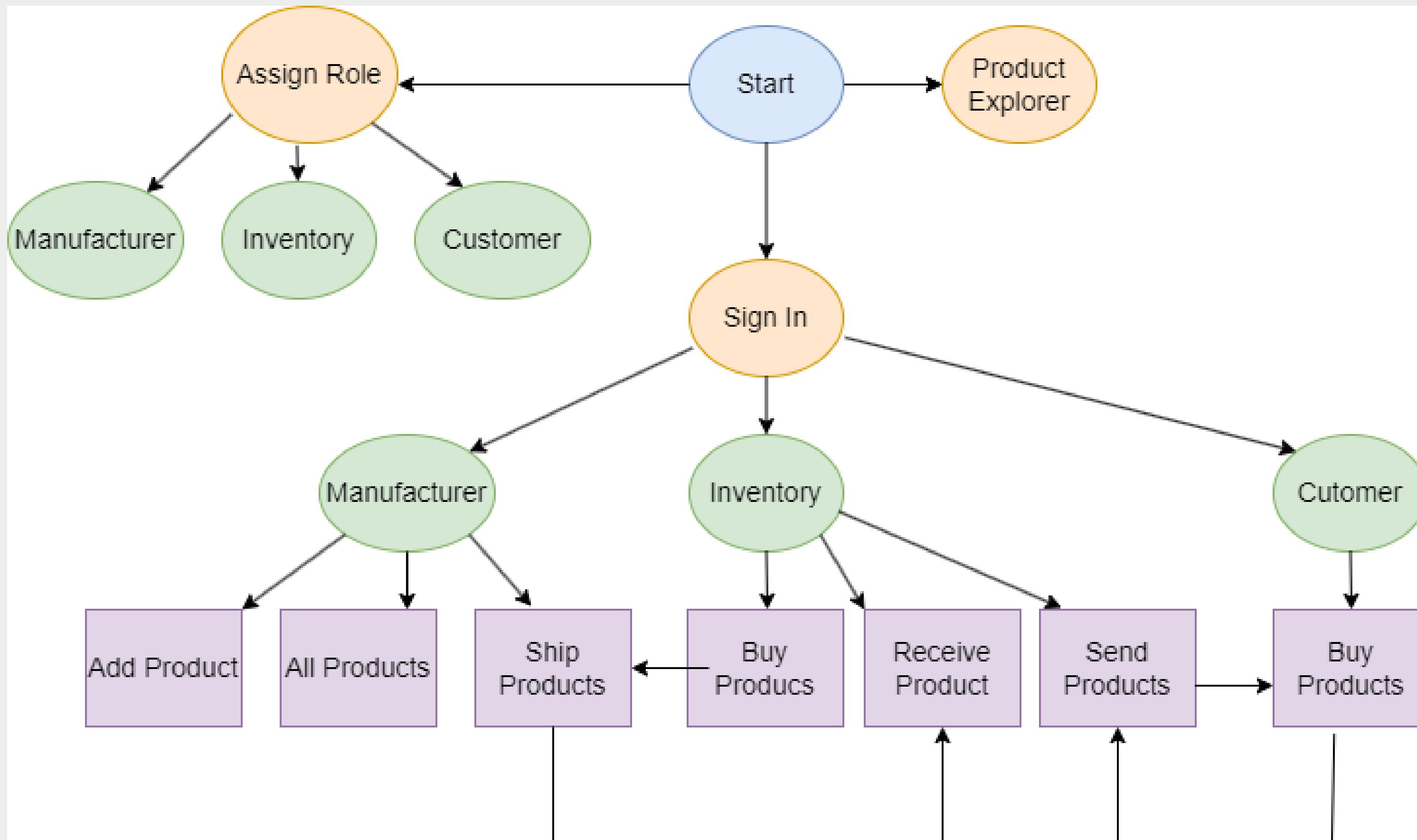


Key Features

Key features of the inventory management DApp.

- ◆ Automated inventory and supply chain management
- ◆ Inventory tracking using smart contracts
- ◆ Role-based access control system
- ◆ Compatibility with existing systems
- ◆ Transparency and accountability

Process Flow Diagram



SAMPLE DEMO OUTPUT

Home Page

Inventory Management Dapp

Home

Explorer



ASSIGN

MANUFACTURER

INVENTORY

CUSTOMER

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Assign Manufacturer

Add Roles

Enter Manufacturer Address: ADD MANUFACTURER

Enter Inventory Address: ADD INVENTORY

Enter Customer Address: ADD CUSTOMER

MetaMask Notification

localhost 8545

Account 3 0xdc0...7a23

http://localhost:3000

0xdc0...7a23 : ADD MANUFACTURER ROLE

DETAILS DATA HEX

Network is busy. Gas prices are high and estimates are less accurate.

Site suggested

Gas (estimated) 0.002 0.002 ETH
Very likely in < 15 seconds Max fee: 0.002 ETH

Total 0.002 0.002 ETH
Amount + gas fee Max amount: 0.002 ETH

Reject Confirm

Add Product

Manufacturer <  Inventory Management Dapp

Home

Explorer

Add Product

Ship Product

All Products

Add Product

Manufacturer Name *

Manufacturer Details *

Longitude * Latitude *

Product Name *

Product Quantity * Product Price *

Product Category *

SUBMIT

Copyright © 2023

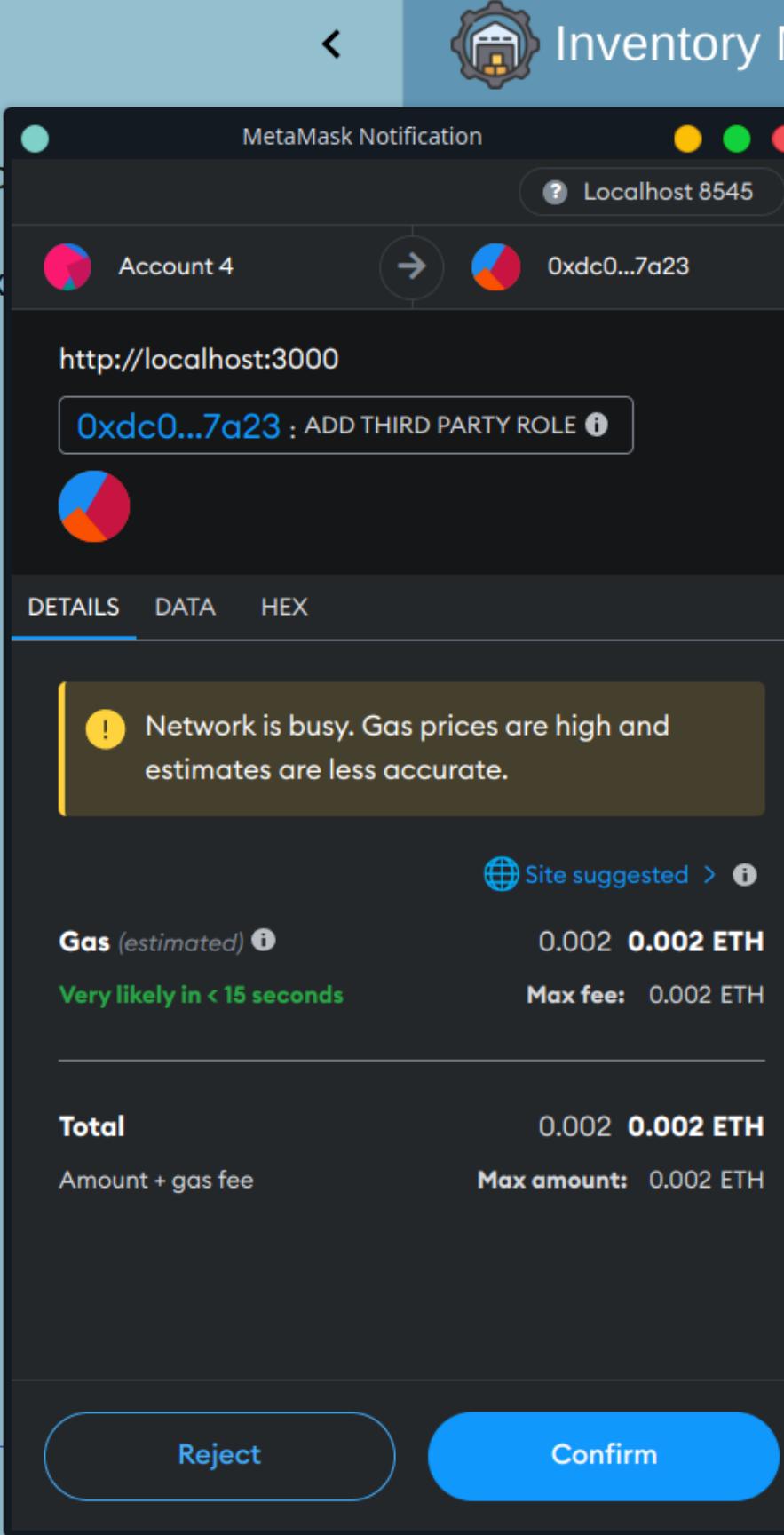
Assign Inventory

Add Roles

Enter Manufacturer Address
ADD MANUFACTURER

Enter Inventory Address 0x59B2F8297131b2B6833165B8Dc57613C2FCa94cB
ADD INVENTORY

Enter Customer Address
ADD CUSTOMER



Buy Product for Inventory

Inventory <  Inventory Management Dapp

Home

Explorer

Buy Product

Receive Product

Send Products

All Products

Total : 1

Universal ID	Product Quantity	Manufacturer	Manufacture Date	Product Name	Owner	Buy
1	20	Clothes Ltd	Mon Apr 17 2023 21:07:11 GMT+0530 (India Standard Time)	T-Shirt	0x472ecac2...	<button>BUY</button>

Rows per page: 10 ▾ 1-1 of 1 < >

Ship Product to Inventory

Manufacturer <  Inventory Management Dapp

Home
Explorer
Add Product
Ship Product
All Products

Products To be Shipped

Total : 1

Universal ID	Product Quantity	Manufacturer	Manufacture Date	Product Name	Owner	Ship
2	20	Clothes Ltd	Mon Apr 17 2023 21:20:06 GMT+0530 (India Standard Time)	T-Shirt	0x472ecac2...	<button>SHIP</button>

Rows per page: 10 ▾ 1-1 of 1 < >

Receive Product in Inventory

Inventory <  Inventory Management Dapp

Home
Explorer
Buy Product
Receive Product
Send Products

Products to be Received

Total : 1

Universal ID	Product Quantity	Manufacturer	Manufacture Date	Product Name	Owner	RECEIVE
2	20	Clothes Ltd	Mon Apr 17 2023 21:20:06 GMT+0530 (India Standard Time)	T-Shirt	0x472ecac2...	<button>RECEIVE</button>

Rows per page: 10 ▾ 1-1 of 1 < >

Assign Customer

Add Roles

Enter Manufacturer Address ADD MANUFACTURER

Enter Inventory Address ADD INVENTORY

Enter Customer Address 0xBe6Fb8653AC790a9eF48aA5a54f1C05BEAD00235 ADD CUSTOMER

MetaMask Notification

localhost 8545

Account 5 0xdc0...7a23

http://localhost:3000

0xdc0...7a23 : ADD CUSTOMER ROLE (i)

DETAILS DATA HEX

Network is busy. Gas prices are high and estimates are less accurate.

Site suggested > (i)

Gas (estimated) (i) 0.002 **0.002 ETH**
Very likely in < 15 seconds Max fee: 0.002 ETH

Total 0.002 **0.002 ETH**
Amount + gas fee Max amount: 0.002 ETH

Reject Confirm

Purchase Product by Customer

Customer <

Home

Explorer

Purchase Product

Inventory Management Dapp

Purchase Products

Total : 1

Universal ID	Product Quantity	Manufacturer	Manufacture Date	Product Name	Owner	Buy
1	20	Clothes Ltd	Mon Apr 17 2023 21:07:11 GMT+0530 (India Standard Time)	T-Shirt	0x59B2F82...	<button>BUY</button>

Rows per page: 10 ▾ 1-1 of 1 < >

Send Product to Customer

Inventory <  Inventory Management Dapp

Home
Explorer
Buy Product
Receive Product
Send Products

Universal ID Product Quantity Manufacturer Manufacture Date Product Name Owner Send

2	20	Clothes Ltd	Mon Apr 17 2023 21:20:06 GMT+0530 (India Standard Time)	T-Shirt	0x59B2F82...	<button>SEND</button>
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Rows per page: 10 ▾ 1-1 of 1 < >

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Product History



Inventory Management Dapp

Home

Explorer

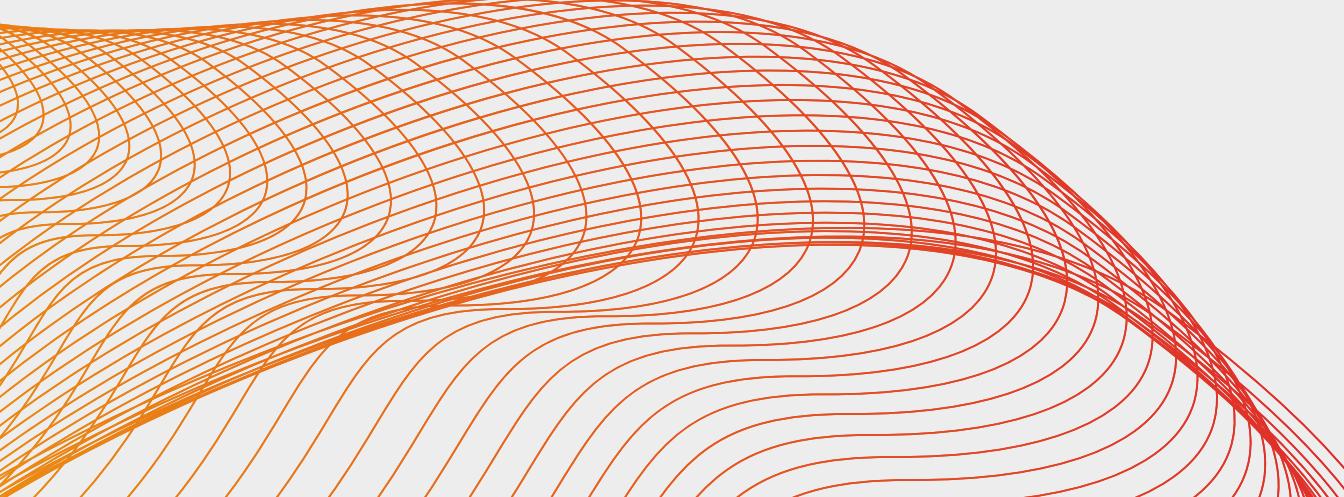
Product History

Universal ID	Manufacturer	Date	Product Name	Price	Owner	Last Action	Details	Receipt
1	Clothes Ltd	Mon Apr 17 2023 21:07:11 GMT+0530 (India Standard Time)	T-Shirt	2000	0x472ecac2E4137...	Manufactured	DETAILS	RECIPT
1	Clothes Ltd	Mon Apr 17 2023 21:07:11 GMT+0530 (India Standard Time)	T-Shirt	2000	0x472ecac2E4137...	Bought By Inventory	DETAILS	RECIPT
1	Clothes Ltd	Mon Apr 17 2023 21:07:11 GMT+0530 (India Standard Time)	T-Shirt	2000	0x472ecac2E4137...	Shipped From Manufacturer	DETAILS	RECIPT
1	Clothes Ltd	Mon Apr 17 2023 21:07:11 GMT+0530 (India Standard Time)	T-Shirt	2000	0x59B2F8297131b...	Received By Inventory	DETAILS	RECIPT

Future Scope

- Real time package tracking using google maps API.
- Integrating IPFS for decentralized file storage and sharing, providing increased security.
- Integrate financing features, allowing businesses to access financing based on inventory data.
- Develop a mobile application.
- Design the DApp to interact with other blockchain networks such as Binance, enabling cross chain interoperability.

Conclusion

- ◆ smart contracts ensure data security and tamper-proofing
 - ◆ Role-based access control enables secure data management.
 - ◆ Decentralization eliminates the need of intermediaries.
 - ◆ The DApp provides end-to-end solution for managing inventory and supply chains
 - ◆ Use of blockchain ensures data transparency
- 
- 

The background features a dynamic, abstract pattern of numerous thin, curved lines in shades of orange and yellow. These lines originate from a dense cluster in the upper left corner and fan out towards the right, creating a sense of motion and energy. The lines are slightly offset, forming a textured, woven effect.

Thank You