HLF Project

By

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USE CASE

Coffee Supply Chain Using HyperLedger Fabric

PROBLEM STATEMENT

- **Lack of Transparency**: Coffee farmers, roasters, and retailers often struggle with knowing the origin, quality, and handling of coffee beans.
- **Inefficient Processes:** Traditional coffee supply chains are prone to delays, fraud, and inefficiencies due to fragmented data.
- **Quality Assurance Issues:** Consumers have difficulty tracing the quality and journey of their coffee beans from farm to cup.
- **Traceability Gaps:** Difficulties in ensuring ethical sourcing, sustainability, and fair-trade compliance.

SOLUTION

Coffee Supply Chain Using HyperLedger Fabric

Coffee Supply Chain Using HyperLedger Fabric

- Distributors can track transport and delivery information.
- Processors can add record details of roasting and processing activities.
- Retailers display the history of coffee beans to consumers for traceability and authentication.
- Farmers can add coffee beans to the ledger with information such as harvest date, batch quality, and origin.

Why Fabric?

- Full traceability of beans from farm to cup.
- Ensures quality control, ethical sourcing, and fair trade practices.
- Secure and transparent data sharing across the supply chain.

WorkFlow

- Farmers grow coffee beans and enter key information (location, variety, harvest date) onto the Hyperledger Fabric network.
- Processors receive coffee beans, process them (roasting, grinding), and update the ledger with detailed process data.
- Distributors transport processed coffee beans, update logistics and delivery status on the ledger.
- Retailers receive coffee batches and display origin, certifications, and quality details to customers through a transparent interface.

Participants

- Farmers
- Processors
- Distributors
- Retailers

Transactions

- Farm Registration: Farmer records coffee batch details (variety, harvest date, location).
- Processing: Processor logs roast type, batch number, and quality checks.
- Logistics & Delivery: Distributor tracks transport, shipment, and delivery status.
- Retailer: Retailer displays batch history (origin, certification, quality) to consumers via QR code.

Further Enhancement

- Full-scale deployment and integration with retailers, including a mobile app for consumers.

- Global expansion with new partners, smart contract enhancements, and eco-friendly initiatives.

Thank you