



School: Campus:

Academic Year: Subject Name: Subject Code:

Semester: Program: Branch: Specialization:

Date:

Applied and Action Learning (Learning by Doing and Discovery)

Name of the Experiment : Build a Use Case – Tokenized Supply Chain

Objective/Aim:

To simulate a blockchain-based **tokenized supply chain** system that tracks the movement of goods between participants using digital tokens, ensuring transparency and traceability in a decentralized network.

Apparatus/Software Used:

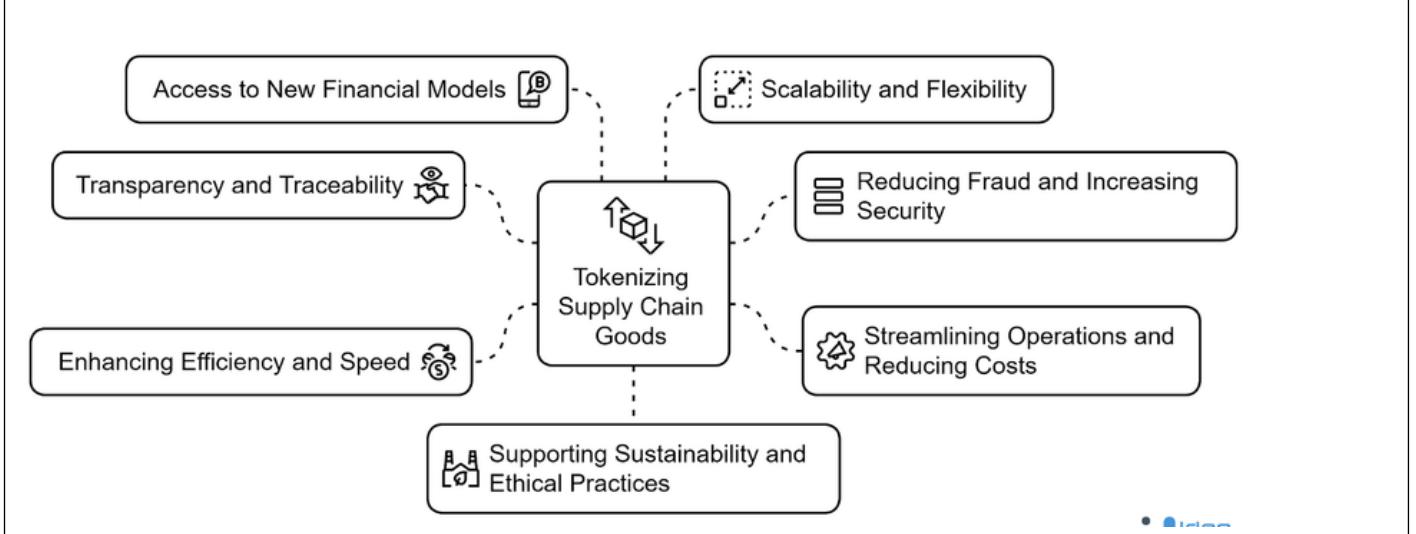
- Brave for searching
- Tokenization Website: <https://www.antiersolutions.com/blogs/tokenization-of-supply-chain-and-inventory-management-the-future-of-transparent-commerce/>

Theory concept:

1. In traditional supply chains, tracking products involves multiple intermediaries, paperwork, and risks of fraud or loss. Blockchain replaces these intermediaries with **smart contracts** that automate trust and record each step transparently.
2. A **token** represents a real-world asset (e.g., a shipment or product). Each transaction — manufacturing, shipping, delivery — is recorded on the blockchain. Every participant can verify product origin and authenticity instantly.

Key Concepts:

- **Tokenization:** Converting assets into blockchain tokens.
- **Smart Contract:** Automated rules for tracking product transfer.
- **Transparency:** Every transaction is visible on the ledger.
- **Decentralization:** No single party controls the network.



Procedure:

1. Participants Identification:

Define all key stakeholders involved in the supply chain — Manufacturer, Supplier, Transporter, Distributor, Retailer, and Customer.

2. Token Generation:

Create digital tokens to represent goods or product batches. Each token includes essential details such as Product ID, origin, and value.

3. Smart Contract Configuration:

Deploy smart contracts to manage token transfers, trigger payment settlements, and verify product conditions throughout the supply chain.

4. Product Registration:

The manufacturer registers each product on the blockchain by assigning unique tokens that digitally represent the shipped items.

5. Tokenized Transfer Across Supply Chain:

As the product moves through various stages, ownership of tokens is transferred between participants —

Manufacturer → Supplier → Transporter → Distributor → Retailer → Customer.

6. Verification and Validation:

Each transaction is validated by the blockchain network, ensuring authenticity, traceability, and the prevention of double-spending of tokens.

7. Automated Settlement:

Upon successful delivery to the customer, smart contracts automatically release payments to the respective stakeholders based on predefined conditions.

8. Immutable Record Maintenance:

All transactions and transfers are securely recorded on the blockchain ledger, ensuring transparency, traceability, and tamper-proof audit trails.

Observation:

1. Tokenization greatly enhances transparency and trust across the entire supply chain.
2. Automation through smart contracts significantly reduces delays and manual inefficiencies.
3. Successful adoption depends on scalability, regulation readiness, and stakeholder collaboration.

ASSESSMENT

Rubrics	Full Mark	Marks Obtained	Remarks
Concept	10		
Planning and Execution/ Practical Simulation/ Programming	10		
Result and Interpretation	10		
Record of Applied and Action Learning	10		
Viva	10		
Total	50		

Signature of the Student:

Name :

Signature of the Faculty:

Regn. No. :

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*As applicable according to the experiment.
Two sheets per experiment (10-20) to be used.