



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:

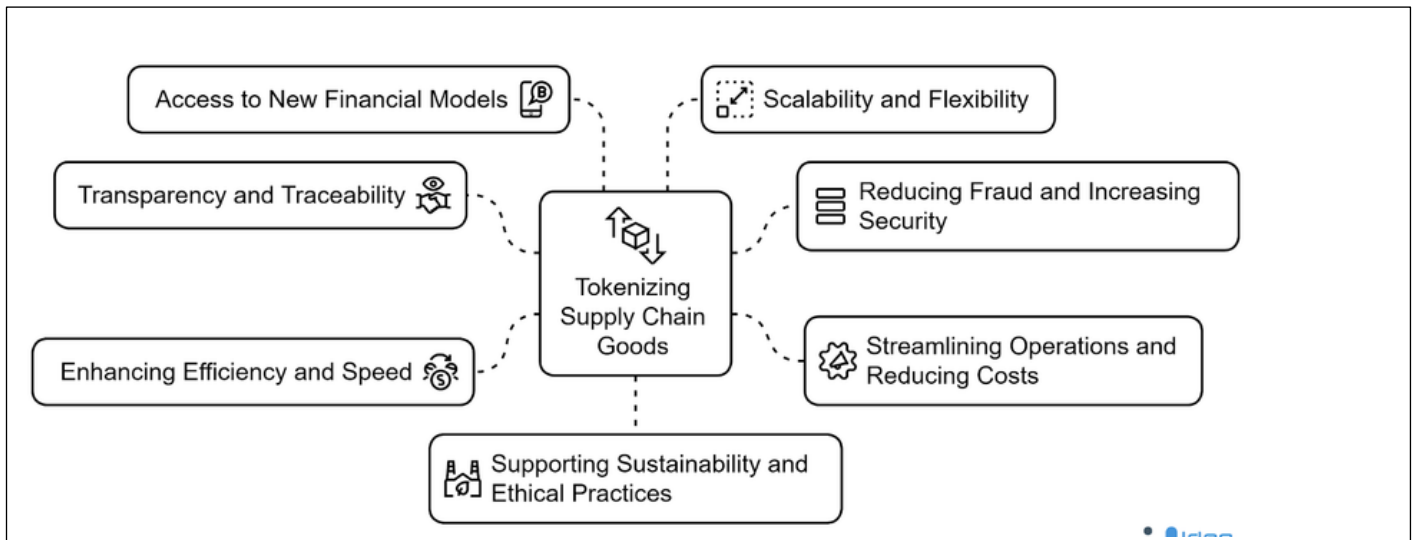
- Brave for searching
- Tokenization Website: <https://www.antiersolutions.com/blogs/tokenization-of-supply-chain-and-inventory-management-the-future-of-transparent-commerce/>

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 :

Regn. No. :

Signature of the Faculty:

Page No.

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