

# SPPU-BE-COMP-CONTENT - KSKA Git

BT

Date :
Page :

## Assignment-2

Q1

Applications of Blockchain

- |                                 |  |
|---------------------------------|--|
| → Cryptocurrencies              | → Voting Systems                         |
| → Supply chain management       | → Banking & Finance                      |
| → Digital Identity Verification | → Real Estate & Land <sup>Registry</sup> |
| → Healthcare data management    | → Intellectual Property & Rights         |

Supply Chain Management

### ARCHITECTURE LAYERS

1. User layer: Producers, suppliers, retailers, customers.
2. Application layer: Smart contracts track goods, trigger payments
3. Blockchain network layer: Stores verified trans<sup>n</sup> of goods movement.
4. Data layer: Distributed Ledger records

How it works.

- Every product movement is stored as block
- Provides transparency, traceability & fraud prevention

Q2

Problem: centralised identity systems are prone to hacking, data leaks, identity theft

Blockchain solutions:

- 1) Decentralised identity (DID): user controls ~~to~~ their identity without relying on one server.

# SPPU-BE-COMP-CONTENT - KSKA Git

- 2) Immutable ledger: Tampering records can't be tampered with.
- 3) Encryption & keys: Access only through private keys held by user.
- 4) Selective Disclosure: users share only necessary info.

Result: less attack surface, higher security & privacy prot<sup>n</sup>.

Q3

With IoT

- ensure secure comm<sup>n</sup> b/w IoT devices
- provides tamper proof logs of device activity
- Enables automated smart contracts
- Reduce reliance on centralised IoT servers.

With Banking

- Faster cross border payments without intermediaries
- smart contracts automate loan disbursement, settlement
- Fraud reduction via immutable trans<sup>n</sup> records
- Improves KYC/AML compliance using blockchain identity systems

Q4

Uses:

1. E-governance: Transparent public records.
2. Voting system: Secure, tamperproof elections.
3. Land registry: prevent fraud in property ownership.
4. Taxation & Public Finance: Traceable & transparent fund allocation.
5. Healthcare: secure patient record management.



Proposed blockchain based app<sup>n</sup>

- Blockchain based Voting systems (Govt election)
- Land ownership registry (Fraud proof)
- Digital identity platforms (citizen id)
- Smart contracts for tendering & procurement
- Healthcare blockchain for public hospitals.