SNS COLLEGE OF ENGINEERING

Kurumbapalayam (Po), Coimbatore – 641 107

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Accredited by NBA – AICTE and Accredited by NAAC – UGC with 'A' Grade
Approved by AICTE, New Delhi & Affiliated to Anna University, Chennai

DEPARTMENT OF COMPUTER SCIENCE AND TECHNOLOGY

COURSE NAME: 19CS622-Blockchain Technology

III YEAR /VI SEMESTER

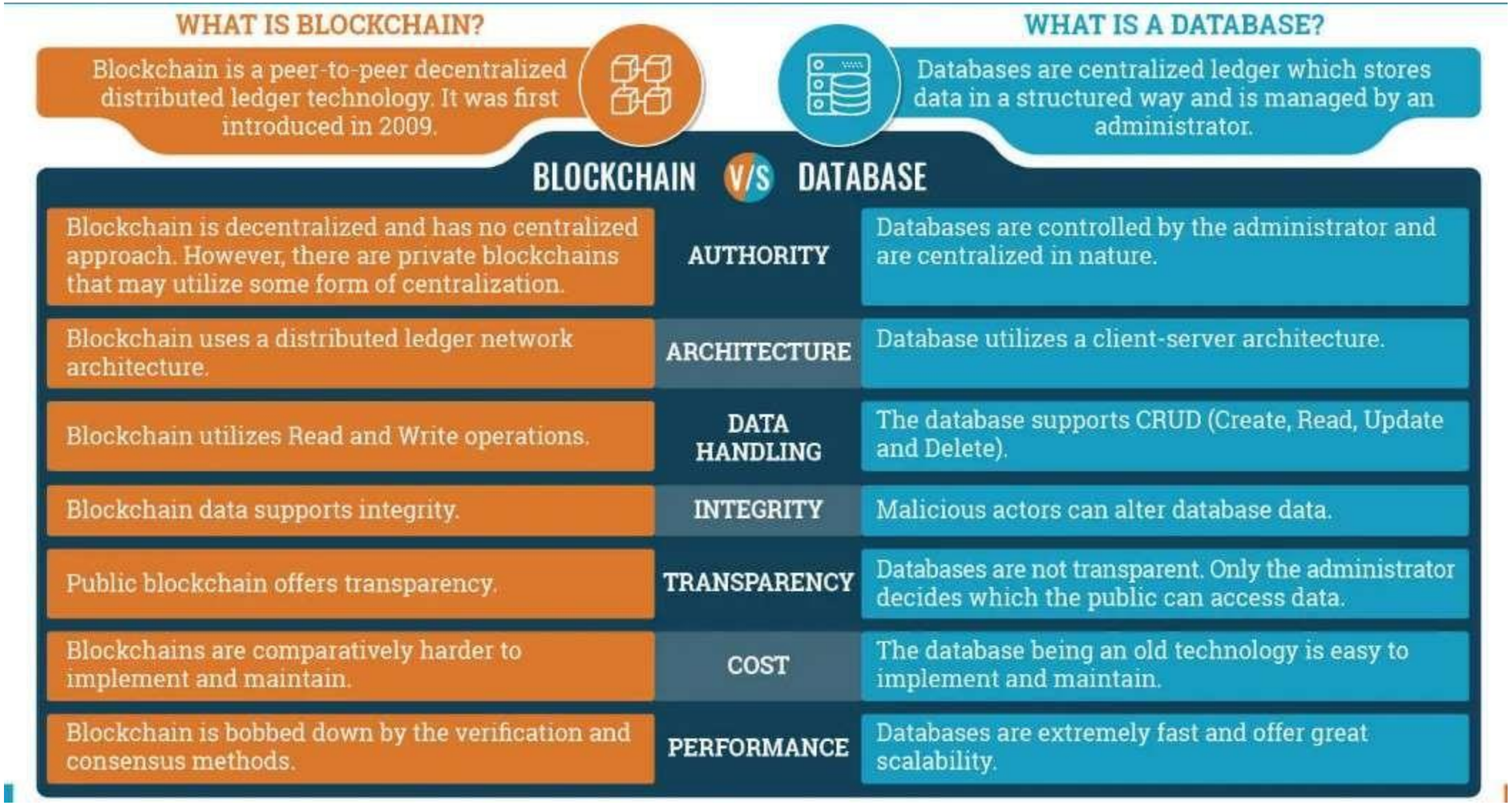
Unit 1- INTRODUCTION TO BLOCKCHAIN

Topic 2: Distinction between databases and blockchain

Brain Storming

1. What Is a Database?
2. Define Traditional Database.

Blockchain Vs Traditional Database



Blockchain Vs Traditional Database

BEST USE CASES FOR DATABASE

- Apps or systems that utilize the continuous flow of data
- Storing confidential information
- Online transaction processing that needs to be fast
- Apps or systems where data verification is not needed
- Relational data

BEST USE CASES FOR BLOCKCHAIN

- Transfer value
- Storage value
- Monetary transactions
- Trusted data verification
- Voting systems
- Decentralized apps (dApps)

	Database	Hybrid/Federated Blockchain	Public Blockchain
Type	Permissioned	Permissioned	Public
Control	Centralized	Hybrid with few features centralized	Decentralized
Architecture	Client-Server architecture	Closed Peer-to-Peer architecture	Public peer-to-peer architecture
Data Persistence	non-persistence	Immutable	Immutable
Chance Of Failure	Yes	No	No
Performance	Extremely fast	Slow to medium	Slow

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Key Features & challenges

Blockchain Vs Database: Immutability and Data Handling

- When it comes to data storage and handling, both blockchain and database work differently. In a traditional database, data can be stored and retrieved with ease.
- To ensure proper operation of the application, CRUD is utilized at the primary level.
- CRUD stands for Create, Read, Update, and Delete.
- This also means that data can be erased and replaced with new values if needed.

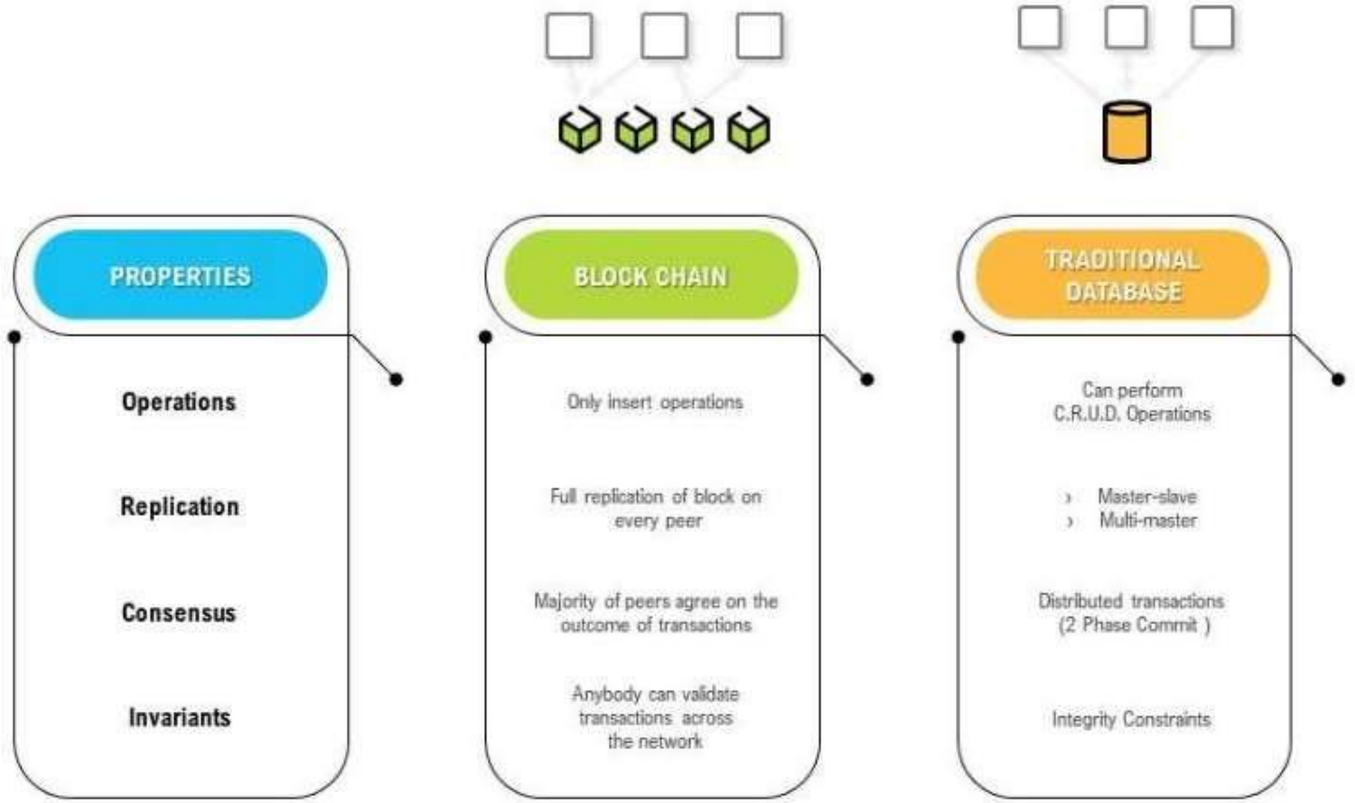
Blockchain, on the other hand, works differently when it comes to data storage. Blockchain supports immutability, which means that data once is written cannot be erased or replaced. Immutability means that no data tampering is possible within the network.

Traditional databases don't exhibit immutability and hence are more prone to being manipulated by a rogue administrator or third-party hacks.

In short, blockchain only supports two operations, Read and Write.

- **Read Operations:** Used to read or retrieve data from the blockchain network
- **Write Operations:** Used to add information and data to the blockchain network

Blockchain Vs Traditional Database



Assessment 1

1. A blockchain provides_____
2. _____ blockchain provides transparency

References

TEXT BOOKS

1. Mastering Bitcoin: Unlocking Digital Cryptocurrencies, by Andreas M Antonopoulos 2018
2. Imran Bashir, “Mastering Blockchain: Distributed Ledger Technology, Decentralization and Smart Contracts Explained”, Second Edition, Packt Publishing, 2018.
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3. Arvind Narayanan, “Bitcoin and Cryptocurrency Technologies: A Comprehensive Introduction”, Princeton University Press, July 19, 2016.
4. Henning Diedrich, Ethereum: Block chains, Digital Assets, Smart Contracts, Decentralized Autonomous Organizations-2016

Thank You