

INTRODUCTION TO BLOCKCHAIN & CRYPTO CURRENCY

**ONE CLASS SECTION
(THEORY)**

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Blockchain is a decentralized and distributed ledger technology that enables secure and transparent record-keeping. Here are key aspects:

1. Decentralization: Information is stored across a network of computers (nodes) rather than a single central entity. This enhances security and reduces the risk of a single point of failure.

2. Cryptography: Transactions on the blockchain are secured using cryptographic techniques. Each block is linked to the previous one through a cryptographic hash, forming a chain.

3. Consensus Mechanism: To validate and add new transactions to the blockchain, a consensus mechanism is employed. Common ones include Proof of Work (used by Bitcoin) and Proof of Stake.

4. Immutability: Once a block is added to the blockchain, it is extremely difficult to alter. This immutability enhances the security and integrity of the data.

5. Smart Contracts: These are self-executing contracts with the terms of the agreement directly written into code. Smart contracts automatically execute when predefined conditions are met.

Cryptocurrency:

Cryptocurrency is a type of digital or virtual currency that uses cryptography for security. It relies on blockchain technology to gain decentralization. Here are key points:

1. Bitcoin: The first and most well-known cryptocurrency, created in 2009 by an unknown person or group using the pseudonym Satoshi Nakamoto. Bitcoin introduced the concept of blockchain and decentralized currency.

2. Altcoins: There are thousands of alternative cryptocurrencies (altcoins) with

varying features. Examples include Ethereum (smart contracts), Ripple (cross-border payments), and Litecoin (fast transactions).

3. Mining: The process of validating transactions and adding them to the blockchain. Miners use powerful computers to solve complex mathematical problems, and in return, they are rewarded with newly created cryptocurrency (e.g., mining Bitcoin).

4. Wallets: Digital wallets are used to store and manage cryptocurrencies. Wallets can be hardware-based (physical devices) or software-based (applications or online services).

5. Exchanges: Cryptocurrency exchanges facilitate the buying, selling, and trading of cryptocurrencies. Examples include Binance, Coinbase, and Kraken.

6. Volatility: Cryptocurrency prices can be highly volatile, influenced by factors such as market demand, regulatory developments, and technological advancements.

7. Decentralized Finance (DeFi): A growing sector within the cryptocurrency space that aims to recreate traditional financial systems using blockchain and smart contracts. It includes lending, borrowing,

and trading without traditional intermediaries.

Understanding both blockchain technology and cryptocurrencies is crucial for anyone looking to engage in the crypto space. It's a rapidly evolving field with both opportunities and risks.