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Introduction to Smart Contracts

Smart Contracts: Automated Agreements on the Blockchain

DEFINITION

> Smart contracts are self-executing contracts with the terms directly written into code. They automatically enforce and execute agreements when predetermined conditions are met.

KEY CONCEPTS

Decentralization

Smart contracts operate on a decentralized network, reducing reliance on intermediaries.

Immutability

Once deployed, smart contracts cannot be altered, ensuring trust and security.

Automation

They automatically execute actions when conditions are met, streamlining processes.

Transparency

All transactions are recorded on the blockchain, making them visible and verifiable.

Trustless Transactions

Parties can engage without needing to trust each other, as the code enforces the agreement.

EXAMPLES

→ Real estate transactions that automatically transfer ownership upon payment.

→ Insurance claims that trigger payouts when specific conditions are verified.

→ Crowdfunding campaigns that release funds only when funding goals are met.

MEMORY TIPS

★ Think of 'smart' as 'self-executing' to remember their automated nature.

★ Use the acronym 'DITE' (Decentralized, Immutable, Transparent, Executable) to recall key features.

★ Visualize a vending machine: you put in money (condition), and it automatically gives you a product (execution).

COMMON MISTAKES

✗ Assuming smart contracts are legally binding without understanding jurisdiction.

✗ Overlooking the importance of thorough testing before deployment.

✗ Neglecting to consider the gas fees associated with executing contracts on the blockchain.

QUICK RECAP

Smart contracts are automated agreements coded on the blockchain that execute when conditions are met. They enhance trust, transparency, and efficiency in transactions without intermediaries.