

Introduction to Blockchain Technology

Blockchain technology is a decentralized, distributed ledger system that securely records transactions across multiple computers. It eliminates the need for intermediaries by providing transparency, immutability, and trust through cryptographic mechanisms. Each block in a blockchain contains a list of transactions, a timestamp, and a cryptographic hash of the previous block, forming a secure chain of data. This structure makes tampering nearly impossible, as altering one block requires modifying all subsequent blocks. Key features of blockchain include: - Decentralization: No central authority controls the system. - Transparency: Transactions are visible and verifiable by participants. - Security: Cryptographic techniques safeguard data. - Immutability: Once added, data cannot be changed. Applications of blockchain extend beyond cryptocurrencies like Bitcoin. It is widely used in supply chain management, healthcare, voting systems, digital identity, and smart contracts. By enabling secure and transparent transactions, blockchain is transforming industries and shaping the future of digital interactions.