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Advanced Blockchain Technologies : A Comprehensive Textbook on Ethereum Smart Contracts to Decentralised Applications

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Description

It is a comprehensive guide designed to educate readers on Ethereum, a groundbreaking blockchain platform introduced through Vitalik Buterin's influential whitepaper. This sequel to the successful "Blockchain Technology: Algorithms and Applications" delves into Ethereum's innovative incorporation of programmability, which extends blockchain's capabilities beyond mere financial transactions to include Decentralised Applications (DApps).

The book meticulously covers foundational concepts, starting with Ethereum's evolution from Proof of Work to Proof of Stake, and includes exercises for readers to reinforce their understanding. It explores Ethereum's architecture, including the Ethereum Virtual Machine, Gas, ether (ETH), and transaction lifecycle, while emphasising smart contracts and their unique applications. Essential tools for users and developers are detailed, alongside extensive coverage of Solidity, the programming language for smart contracts.

Later chapters guide readers through token standards, network interactions, and the process of building DApps. Advanced topics such as smart contract upgrades, DAO, oracles, and Ethereum's major updates are also discussed. This book is crafted to be a reliable reference, keeping pace with technological advancements, and is poised to be embraced by readers with enthusiasm.

About the Author

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Dr. Asharaf S. is a distinguished computer scientist with extensive expertise in AI-related algorithms. He received his Ph.D. and Master of Engineering degrees in Computer Science from the Indian Institute of Science, Bangalore. Post-Ph.D., he worked as a Research Scientist at America Online (AOL) R&D Labs and later served as a faculty member at the Indian Institute of Management Kozhikode (IIMK). Currently, he is the Dean (Academics) and Professor at Digital University Kerala, while also serving as a visiting faculty for MDP programs at IIMK.

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