



METADATA

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Abstract

The book introduces the reader to the world of blockchain technology, without the need for pre-requisite knowledge. The basic characteristics of the technology are presented and its most well-known networks (Bitcoin, Ethereum) are analyzed. Next, the use of asymmetric cryptography in blockchain technology is discussed, as well as the way transactions are performed in such a network. Particular emphasis is placed on the use of digital signatures in blockchain transactions. In the following chapter, the role of consensus in a distributed network is explained and details about how it is achieved in the two referenced networks mentioned earlier are provided. Also, the role of smart contracts is presented and examples of their writing and deployment in a blockchain network, suitable for testing, are given. The role and the use of tokens in a blockchain network are then analyzed. Emphasis is placed on understanding the different types of tokens that can

be created, focusing on the differences and the description of the use cases best suited for each type. The reference network for the discussion about tokens is Ethereum and the basis is standards created in it for their implementation. The next step focuses on presenting how Decentralized Applications (DApps) work and apply, and mainly on the differences between Web 2.0 and Web 3.0. Then, there is a presentation of popular use cases of blockchain technology, accompanied by the necessary arguments so as to analyze the gains made by implementing a solution based on this technology in each discussed case. For a more complete presentation of the area, towards the end of the book follows the presentation of Distributed Ledger Technologies, of which the blockchain is a subset. Finally, there is a practice chapter, with the presentation of an online open tool, which allows the reader to practice much of the subjects discussed in the previous chapters.

