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Disciplina	005.8
Soggetti	Java (Computer program language) Cryptography Computer security Data encryption (Computer science)
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di contenuto	Intro -- Table of Contents -- About the Authors -- About the Technical Reviewer -- Chapter 1: Introduction -- Cryptography and Cryptanalysis -- Book Structure -- Conclusion -- References -- Chapter 2: JDK 17: New Features -- Conclusion -- References -- Chapter 3: Roadmap and Vision for Jakarta EE 10 -- Conclusion -- References -- Chapter 4: Java Cryptography Architecture -- Architecture and Design Principles -- JCA Classes and Algorithms -- Algorithms and Engine Classes -- Interfaces and Main Classes -- Data Encryption -- Hash Functions -- Signatures -- Generating Signatures -- Verifying the Signature -- Conclusion -- References -- Chapter 5: Classical Cryptography -- Caesar Cipher -- Implementation -- Cryptanalysis -- Vigenère Cipher -- Implementation -- Cryptanalysis -- Hill Cipher -- Implementation -- Cryptanalysis -- Conclusion -- References -- Chapter 6: Formal Techniques for Cryptography -- Definitions -- Probabilities and Statistics -- Conditional Probability -- Random Variables -- Entropy -- A Little Algebra -- Elliptic Curves -- Conclusion -- References -- Chapter 7: Pseudorandom Number Generators -- Examples of PRNGs -- Linear Congruential PRNGs -- Blum-Blum-Shub PRNG -- Linear Circuit PRNGs

-- Other PRNGs -- PRNGs Security -- Java.util.Random Class -- Conclusion -- References -- Chapter 8: Hash Functions -- Conclusion -- References -- Chapter 9: Symmetric Encryption Algorithms -- Data Encryption Standard -- The Generation of Keys -- Encryption and Decryption Process -- Operation Modes for DES -- Advanced Encryption Standard -- Encryption and Decryption Process -- Operation Modes for AES -- Conclusion -- References -- Chapter 10: Asymmetric Encryption Schemes -- RSA -- ElGamal -- Merkle-Hellman -- The Knapsack Approach -- Algorithms -- Conclusion -- References -- Chapter 11: Signature Schemes -- Conclusion -- References. Chapter 12: Identification Schemes -- FFS Identification protocol -- Conclusion -- References -- Chapter 13: Lattice-Based Cryptography and NTRU -- Practical Implementation of the NTRU Library -- Conclusion -- References -- Chapter 14: Advanced Encryption Schemes -- Homomorphic Encryption -- Searchable Encryption -- Conclusion -- References -- Chapter 15: Cryptography Tools -- CryptTool -- OpenSSL -- Conclusion -- References -- Index.

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### Sommario/riassunto

Here is your in-depth guide to cryptography and cryptanalysis in Java. This book includes challenging cryptographic solutions that are implemented in Java 17 and Jakarta EE 10. It provides a robust introduction to Java 17's new features and updates, a roadmap for Jakarta EE 10 security mechanisms, a unique presentation of the "hot points" (advantages and disadvantages) from the Java Cryptography Architecture (JCA), and more.

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