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	Nota di contenuto	Introduction -- Part I: Fundamental Algorithms -- Graphs -- The Computational Model -- Spanning Tree Construction -- Graph Traversals -- Minimal Spanning Trees -- Routing -- Self-Stabilization -- Part II: Graph Theoretical Algorithms -- Vertex Coloring -- Maximal Independent Sets -- Dominating Sets -- Matching -- Vertex Cover -- Part III: Ad Hoc Wireless Networks -- Introduction -- Topology Control -- Ad Hoc Routing -- Sensor Network Applications -- ASSIST: A Simulator to Develop Distributed Algorithms -- Pseudocode Conventions -- ASSIST Code -- Applications Using ASSIST.
	Sommario/riassunto	Graph theory is an invaluable tool for the designer of algorithms for distributed systems. This hands-on textbook/reference presents a comprehensive review of key distributed graph algorithms for computer network applications, with a particular emphasis on practical implementation. Each chapter opens with a concise introduction to a specific problem, supporting the theory with numerous examples, before providing a list of relevant algorithms. These algorithms are described in detail from conceptual basis to pseudocode, complete with graph templates for the stepwise implementation of the algorithm,

followed by its analysis. The chapters then conclude with summarizing notes and programming exercises. Topics and features: Introduces a range of fundamental graph algorithms, covering spanning trees, graph traversal algorithms, routing algorithms, and self-stabilization Reviews graph-theoretical distributed approximation algorithms with applications in ad hoc wireless networks Describes in detail the implementation of each algorithm, with extensive use of supporting examples, and discusses their concrete network applications Examines key graph-theoretical algorithm concepts, such as dominating sets, and parameters for mobility and energy levels of nodes in wireless ad hoc networks, and provides a contemporary survey of each topic Presents a simple simulator, developed to run distributed algorithms Provides practical exercises at the end of each chapter This classroom-tested and easy-to-follow textbook is essential reading for all graduate students and researchers interested in discrete mathematics, algorithms and computer networks. Prof. Dr. Kayhan Erciye is the Rector and a member of the Computer Engineering Department at Izmir University, Turkey   .