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Sommario/riassunto

Focusing on the physical layer, Networking Fundamentals provides essential information on networking technologies that are used in both wired and wireless networks designed for local area networks (LANs) and wide-area networks (WANs). The book starts with an overview of telecommunications followed by four parts, each including several chapters. Part I explains the principles of design and analysis of information networks at the lowest layers. It concentrates on the characteristics of the transmission media, applied transmission and coding, and medium access control. Parts II and III are devoted to detailed descriptions of important WANs and LANs respectively with Part II describing the wired Ethernet and Internet as well as cellular networks while Part III covers popular wired LANs and wireless LANs (WLANs), as well as wireless personal area network (WPAN) technologies. Part IV concludes by examining security, localization and sensor networking. The partitioned structure of the book allows flexibility in teaching the material, encouraging the reader to grasp the more simple concepts and to build on these foundations when moving onto more complex systems. Networking Fundamentals contains numerous illustrations, case studies and tables to supplement the text, as well as exercises with solutions at the end of each chapter. There is also a companion website with password protected solutions manual and other useful resources. . Provides a unique holistic approach covering wireless communication technologies, wired technologies and networking. One of the first textbooks to integrate all aspects of information networks while placing an emphasis on the physical layer and systems engineering aspects. Examines information theory to explain how it has influenced evolution of modern wired and wireless networks. Presents self-sustained descriptions of the medium and

modem design technologies.