



## METADATA

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### Abstract

This book is intended for one-semester introductory courses related to Databases (DBs), both for undergraduate higher-education programs on Informatics and Sciences and for postgraduate conversion-oriented programs (for higher education graduates in majors different to Informatics who aim to acquire basic knowledge on Informatics). The target of the book is for the reader to acquire the theoretical foundation and practical skills which will allow him/her to design and implement DBs for a wide range of modern applications, both traditional and sophisticated ones. Throughout this book, the reader will gain a critical approach regarding the impact that design choices have on the performance and integrity of a DB. To this end, the printable material is selectively

accompanied by videos and self-evaluation material (solved activities related to programming, but also to conceptual comprehension). The polymorphic nature of the material will contribute to the consolidation of the theory and to its connection with the acquisition of the necessary skills, in terms of the correct design and use of DBs. Finally, this book, not only presents the fundamental principles of Database Systems, but remains at the forefront of current trends, by also covering new topics, such as: (a) DB application programming issues, using C/C++, Java, PHP and Python languages and (b) motivation for the introduction and use of semi-structured data models, their representation through XML, query languages for XML data and methods for XML data storage.

