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DATABASE PRINCIPLES AND TECHNOLOGIES – BASED ON HUAWEI GAUSSDB

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Preface

Nowadays, database technology has developed from the early stage of simply saving and processing data files to a rich, comprehensive discipline with data modeling and database management system as the core, as the foundation and core of modern computer application system. Entering the Internet era, the traditional database system began to show decadence in response to the storage needs of big data, and enterprise customers urgently need a new generation of database products, that is, products with dynamic expansion and contraction capacity, high throughput, low cost, and other characteristics. As a result, cloud computing-based databases have emerged and risen, showing the future-oriented trend of cloud-based, distributed, and multi-mode processing.

Based on Huawei's GaussDB (for MySQL) cloud computing-based database, this book focuses on various cloud computing-based features and application scenarios of cloud computing-based databases. The division of the book's eight chapters is as follows:

Chapter 1 mainly introduces databases, including database technology overview, database technology history, relational database architecture, and mainstream application scenarios of relational databases.

Chapter 2 mainly teaches database basics, including the main responsibilities and contents of database management, and introduces some common and important basic concepts of databases.

Chapter 3 introduces SQL syntax, including GaussDB (for MySQL) data types, system functions and operators, which aims to help beginners master get started with SQL syntax.

Chapter 4 focuses on SQL syntax classification and further explains SQL statements accordingly, covering data query, data update, data definition, and data control.

Chapter 5 focuses on database security fundamentals, including basic security management techniques for databases, such as access control, user management, permission management, object permissions, and cloud auditing services, which will be elaborated from basic concepts, usages, and application scenarios.

Chapter 6 focuses on the database development environment, including the use of all the tools of GaussDB (for MySQL), for the convenience of users to learn and view.

Chapter 7 mainly teaches database design fundamentals, detailing the specific work of requirements analysis, conceptual design, logical design and physical design in accordance with the New Orleans design methodology, and finally introducing the specific means of database design implementation with relevant cases.

Chapter 8 mainly introduces the features of GaussDB database, involving Huawei relational database and Huawei NoSQL database.

This book is edited by Huawei Technologies Co., Ltd., thanks to Ma Ruixin for the specific writing and final compilation of the whole book. We welcome readers' criticism and correction if there are any shortcomings in the book, due to the limited time for compilation.

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