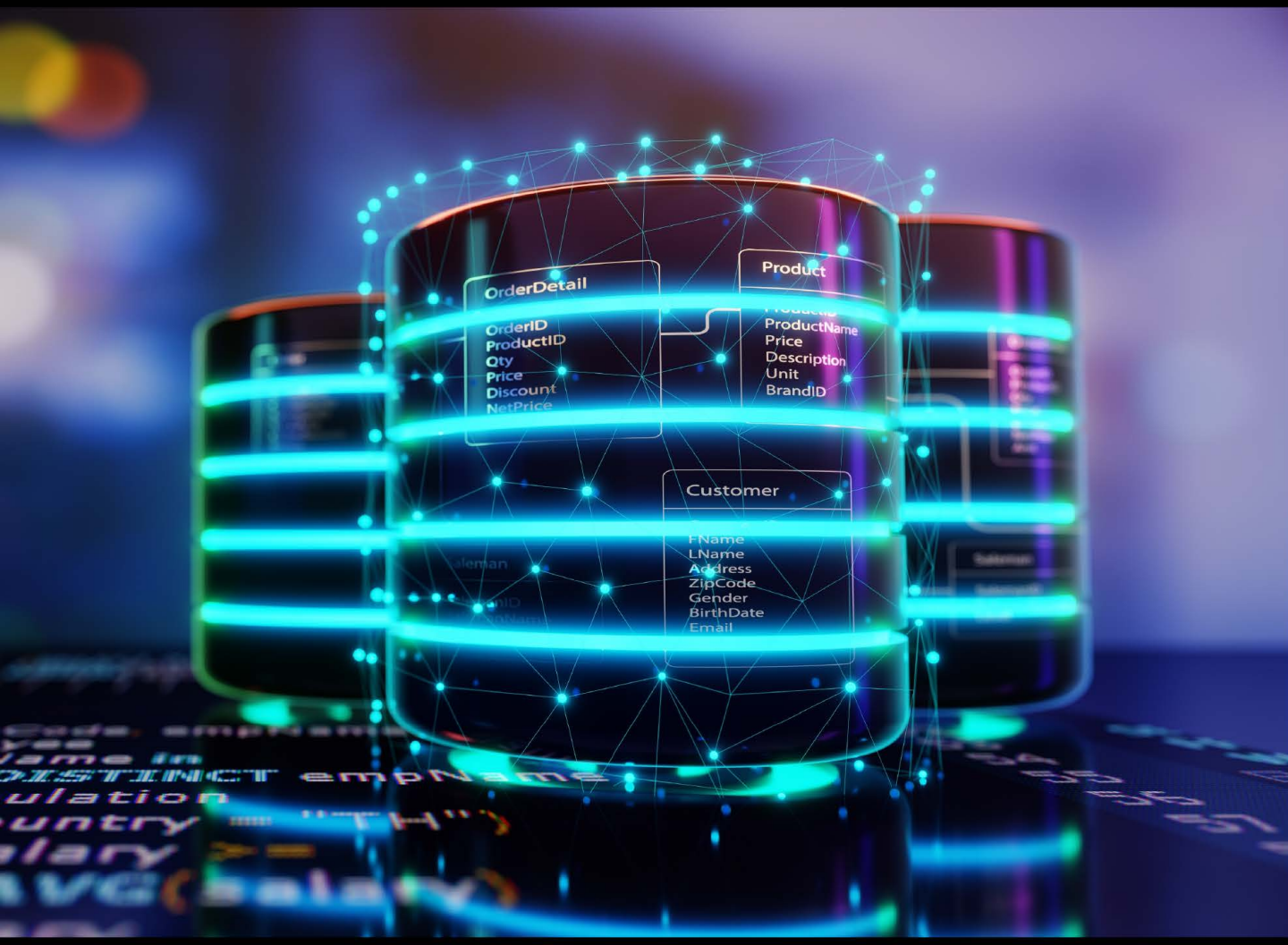
MySQL 9 Essentials



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Payload publishing

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ISBN-13: 978-1-965764-10-7

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Rev: 1.0

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Chapter 1

1. Start Here

Databases are the foundation of applications like websites, mobile apps, and large-scale enterprise systems. MySQL is one of the most widely deployed and highly regarded database management systems in use today. MySQL 9 Essentials provides a concise guide to MySQL, covering fundamental concepts, advanced techniques, and best practices.

The book begins by installing and configuring MySQL on Windows, macOS, and Linux before outlining the fundamentals of relational database management systems.

Beyond the fundamentals, this book covers advanced MySQL features such as indexing for performance optimization, automation with triggers and events, and database modeling with MySQL Workbench.

In addition to covering the command-line tools provided with MySQL, several chapters introduce the phpMyAdmin and MySQL Workbench tools, which offer user-friendly graphical interfaces for database management.

By following this book, you will learn how to:

- Install and configure MySQL on Windows, macOS, and Linux.
- Use MySQL client tools and graphical interfaces like MySQL Workbench and phpMyAdmin.
- Design efficient database schemas and relationships.
- Manage databases using the Structured Query Language (SQL).
- Optimize database performance using indexing and query optimization techniques.
- Automate repetitive database tasks using triggers and scheduled events.
- Secure MySQL databases by managing user privileges and access controls.

This book explains each topic in detail and includes practical examples that provide hands-on experience. The chapters also contain quick-reference summaries highlighting key points for easy review and access to online knowledge quizzes to assess and reinforce your understanding.

By the end of this book, you will have the confidence to build and manage MySQL databases.

1.1 About MySQL

Before the arrival of MySQL, implementing a database was typically a complex and expensive task involving the purchase, installation, and maintenance of a proprietary database management system from a vendor such as Oracle or IBM. In contrast, MySQL provides a free, open-source database management system that is easy to install, implement, and maintain. In addition, MySQL is fast, extremely reliable, and widely deployed by many companies and organizations worldwide.

It is not an exaggeration to say that MySQL has brought the power of a fully featured, scalable relational database management system into the reach of anyone with a computer and the desire to build a data-driven application or website. MySQL was originally developed by MySQL AB, a company founded in Sweden in 1995, and remained independent until it was acquired by Sun Microsystems in 2008. Oracle purchased Sun Microsystems in 2008

and found itself owning MySQL. Oracle provides a free community and a subscription-based enterprise edition of MySQL. Though the core elements of the two editions are identical, the enterprise edition includes additional scaling, performance, security, backup features, and 24x7 support. To address the broadest possible audience, this book is based on MySQL 9 Community Edition.

The name MySQL comes from a combination of "My" and "SQL." In this context, "My" is a proper noun rather than a possessive adjective and is named after My, the daughter of Monty Widenius, one of the original developers of MySQL. SQL stands for Structured Query Language, the language used for managing databases.

1.2 Downloading the database snapshots

Many chapters in this book assume that you have completed the steps from previous chapters. If you would rather not read the chapters in sequence, you can import database snapshots at the beginning of each chapter using the snapshot files available for download at the following link:

https://www.payloadbooks.com/product/mysql9-prag/

1.3 Importing the database snapshots

To import a snapshot, open a terminal or command prompt, navigate to the directory that contains the sample files, and run the following commands:

```
mysql -u root -p -e "CREATE DATABASE sampledb;"
mysql -u root -p sampledb < snapshot_file_name.sql
```

1.4 Feedback

We want you to be satisfied with your purchase of this book. Therefore, if you find any errors in the book or have any comments, questions, or concerns, please contact us at *info@payloadbooks.com*.

1.5 Errata

While we make every effort to ensure the accuracy of the content of this book, inevitably, a book covering a subject area of this size and complexity may include some errors and oversights. Any known issues with the book will be outlined, together with solutions, at the following URL:

https://www.payloadbooks.com/mysql9_errata

If you find an error not listed in the errata, email our technical support team at *info@payloadbooks.com*.

1.6 Knowledge tests

Look for this section at the end of most chapters and use the link or scan the QR code to take a knowledge quiz to test and reinforce your understanding of the covered topic. Use the following link to review the full list of tests available for this book:

https://www.answertopia.com/ce9o

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