

# The Definitive Guide to SQLite



Michael Owens

## **The Definitive Guide to SQLite**

**Copyright © 2006 by Michael Owens**

All rights reserved. No part of this work may be reproduced or transmitted in any form or by any means, electronic or mechanical, including photocopying, recording, or by any information storage or retrieval system, without the prior written permission of the copyright owner and the publisher.

ISBN-13: 978-1-59059-673-9

ISBN-10: 1-59059-673-0

Printed and bound in the United States of America 9 8 7 6 5 4 3 2 1

Trademarked names may appear in this book. Rather than use a trademark symbol with every occurrence of a trademarked name, we use the names only in an editorial fashion and to the benefit of the trademark owner, with no intention of infringement of the trademark.

Lead Editors: Jason Gilmore, Keir Thomas

Technical Reviewer: Preston Hagar

Editorial Board: Steve Anglin, Ewan Buckingham, Gary Cornell, Jason Gilmore, Jonathan Gennick,  
Jonathan Hassell, James Huddleston, Chris Mills, Matthew Moodie, Dominic Shakeshaft, Jim Sumser,  
Keir Thomas, Matt Wade

Project Manager: Beth Christmas

Copy Edit Manager: Nicole LeClerc

Copy Editor: Liz Welch

Assistant Production Director: Kari Brooks-Copony

Production Editor: Katie Stence

Compositor: Susan Glinert

Proofreader: April Eddy

Indexer: Toma Mulligan

Artist: Kinetic Publishing Services, LLC

Cover Designer: Kurt Krames

Manufacturing Director: Tom Debolski

Distributed to the book trade worldwide by Springer-Verlag New York, Inc., 233 Spring Street, 6th Floor, New York, NY 10013. Phone 1-800-SPRINGER, fax 201-348-4505, e-mail orders-ny@springer-sbm.com, or visit <http://www.springeronline.com>.

For information on translations, please contact Apress directly at 2560 Ninth Street, Suite 219, Berkeley, CA 94710. Phone 510-549-5930, fax 510-549-5939, e-mail [info@apress.com](mailto:info@apress.com), or visit <http://www.apress.com>.

The information in this book is distributed on an “as is” basis, without warranty. Although every precaution has been taken in the preparation of this work, neither the author(s) nor Apress shall have any liability to any person or entity with respect to any loss or damage caused or alleged to be caused directly or indirectly by the information contained in this work.

The source code for this book is available to readers at <http://www.apress.com> in the Source Code section.

# Contents at a Glance

Foreword .....	xv
About the Author .....	xvii
About the Technical Reviewer .....	xix
Acknowledgments .....	xxi
■ <b>CHAPTER 1</b> Introducing SQLite .....	1
■ <b>CHAPTER 2</b> Getting Started .....	17
■ <b>CHAPTER 3</b> The Relational Model .....	47
■ <b>CHAPTER 4</b> SQL .....	73
■ <b>CHAPTER 5</b> Design and Concepts .....	171
■ <b>CHAPTER 6</b> The Core C API .....	205
■ <b>CHAPTER 7</b> The Extension C API .....	255
■ <b>CHAPTER 8</b> Language Extensions .....	301
■ <b>CHAPTER 9</b> SQLite Internals .....	341
■ <b>APPENDIX A</b> SQL Reference .....	365
■ <b>APPENDIX B</b> C API Reference .....	395
■ <b>APPENDIX C</b> Codd's 12 Rules .....	423
■ <b>INDEX</b> .....	425