Beginning J2ME: From Novice to Professional, Third Edition

SING LI AND JONATHAN KNUDSEN

Beginning J2ME: From Novice to Professional, Third Edition

Copyright © 2005 by Sing Li and Jonathan Knudsen

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 (pbk): 1-59059-479-7

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 Editor: Steve Anglin

Technical Reviewer: Chris Harris

Editorial Board: Steve Anglin, Dan Appleman, Ewan Buckingham, Gary Cornell, Tony Davis, Jason Gilmore, Jonathan Hassell, Chris Mills, Dominic Shakeshaft, Jim Sumser

Assistant Publisher: Grace Wong Project Manager: Laura Cheu Copy Manager: Nicole LeClerc Copy Editor: Ami Knox

Copy Editor. Aim Knox

Production Manager: Kari Brooks-Copony

Production Editor: Laura Cheu Compositor: Susan Glinert Stevens

Proofreader: Liz Welch Indexer: Carol Burbo

Artist: Kinetic Publishing Services, LLC

Cover Designer: Kurt Krames

Manufacturing Manager: Tom Debolski

Distributed to the book trade in the United States by Springer-Verlag New York, Inc., 233 Spring Street, 6th Floor, New York, NY 10013, and outside the United States by Springer-Verlag GmbH & Co. KG, Tiergartenstr. 17, 69112 Heidelberg, Germany.

In the United States: phone 1-800-SPRINGER, fax 201-348-4505, e-mail orders@springer-ny.com, or visit http://www.springer-ny.com. Outside the United States: fax +49 6221 345229, e-mail orders@springer.de, or visit http://www.springer.de.

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, 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 Downloads section.

Contents at a Glance

	xvi
	al Reviewerxix
-	xxi
Preface	xxiii
CHAPTER 1	Introduction
CHAPTER 2	Building MIDlets11
CHAPTER 3	All About MIDIets29
CHAPTER 4	Almost the Same Old Stuff39
CHAPTER 5	Creating a User Interface53
CHAPTER 6	Lists and Forms67
CHAPTER 7	Custom Items89
CHAPTER 8	Persistent Storage I: MIDP Record Store103
CHAPTER 9	Persistent Storage II: File Connection and PIM API117
CHAPTER 10	Connecting to the World143
CHAPTER 11	Wireless Messaging API165
CHAPTER 12	Bluetooth and OBEX195
CHAPTER 13	Programming a Custom User Interface
CHAPTER 14	The Game API255
CHAPTER 15	3D Graphics
CHAPTER 16	Sound, Music, and Video: MMAPI305
CHAPTER 17	Performance Tuning331
CHAPTER 18	Protecting Network Data343
APPENDIX	MIDP API Reference
INDEX	491