The bestselling guide to creating crystal-clear reports, fully updated!

# Crystal Reports 2008 FOR

DUMIES

A Reference for the Rest of Us!

FREE eTips at dummies.com®

Allen G. Taylor

Author of SQL All-in-One Desk Reference
For Dummies

Design and build reports for the information that you want



The bestselling guide to creating crystal-clear reports, fully updated!

## Crystal Reports 2008

DUMMIES

Design and build reports for the information that you want

## A Reference for the Rest of Us!°

FREE eTips at dummies.com

Allen G. Taylor

Author of SQL All-in-One Desk Reference
For Dummies

#### Crystal Reports® 2008 For Dummies

by Allen G. Taylor

#### **Crystal Reports® 2008 For Dummies®**

Published by
Wiley Publishing, Inc.
111 River St.
Hoboken, NJ 07030-5774
www.wiley.com

Copyright © 2008 by Wiley Publishing, Inc., Indianapolis, Indiana

Published by Wiley Publishing, Inc., Indianapolis, Indiana

Published simultaneously in Canada

No part of this publication may be reproduced, stored in a retrieval system or transmitted in any form or by any means, electronic, mechanical, photocopying, recording, scanning or otherwise, except as permitted under Sections 107 or 108 of the 1976 United States Copyright Act, without either the prior written permission of the Publisher, or authorization through payment of the appropriate per-copy fee to the Copyright Clearance Center, 222 Rosewood Drive, Danvers, MA 01923, (978) 750-8400, fax (978) 646-8600. Requests to the Publisher for permission should be addressed to the Legal Department, Wiley Publishing, Inc., 10475 Crosspoint Blvd., Indianapolis, IN 46256, (317) 572-3447, fax (317)

572-4355, or online at <a href="http://www.wiley.com/go/permissions">http://www.wiley.com/go/permissions</a>.

Trademarks: Wiley, the Wiley Publishing logo, For Dummies, the Dummies Man logo, A Reference for the Rest of Us!, The Dummies Way, Dummies Daily, The Fun and Easy Way, Dummies.com, and related trade dress are trademarks or registered trademarks of John Wiley & Sons, Inc. and/or its affiliates in the United States and other countries, and may not be used without written permission. Crystal Reports is a registered trademark of Business Objects, SA. All other trademarks are the property of their respective owners. Wiley Publishing, Inc., is not associated with any product or vendor mentioned in this book.

LIMIT OF LIABILITY/DISCLAIMER OF WARRANTY: The publisher and the author make no representations or warranties with respect to the accuracy or completeness of the contents of this work and specifically disclaim all warranties, including without limitation warranties of fitness for a particular purpose. No warranty may be created or extended by sales or promotional materials. The advice and strategies contained herein may not be suitable for every situation. This work is sold with the understanding that the publisher is not engaged in rendering legal, accounting, or other professional services. If professional assistance is required, the services of a competent professional person should be sought. Neither the publisher nor the author shall be liable for damages arising herefrom. The

fact that an organization or Website is referred to in this work as a citation and/or a potential source of further information does not mean that the author or the publisher endorses the information the organization or Website may provide or recommendations it may make. Further, readers should be aware that Internet Websites listed in this work may have changed or disappeared between when this work was written and when it is read.

For general information on our other products and services, please contact our Customer Care Department within the U.S. at 800-762-2974, outside the U.S. at 317-572-3993, or fax 317-572-4002.

For technical support, please visit <a href="https://www.wiley.com/techsupport">www.wiley.com/techsupport</a>.

Wiley also publishes its books in a variety of electronic formats. Some content that appears in print may not be available in electronic books.

Library of Congress Control Number: 2008927910

ISBN: 978-0-470-29077-4

Manufactured in the United States of America

10 9 8 7 6 5 4 3 2 1

#### **About the Author**

Allen G. Taylor is a 30-year veteran of the computer industry and the author of over 20 books, including *SQL All-in-One Desk Reference For Dummies, SQL For Dummies, Access 2003 Power Programming with VBA, Database Development For Dummies,* and *SQL Weekend Crash Course*. He lectures nationally on databases, innovation, and entrepreneurship. He also teaches database development internationally through a leading online education provider and teaches microprocessor architecture locally at Portland State University. You can contact Allen at allen.taylor@ieee.org.

#### **Dedication**

This book is dedicated to my daughter, Jenny Taylor Warren, who has given me much excellent advice, as well as two outstanding grandsons.

## Author's Acknowledgments

Many people have contributed to the quality and content of this book. I would particularly like to recognize my Acquisitions Editor, Kyle Looper, for his overall management of the project and for keeping me honest, and my Project Editor, Rebecca Senninger, for the day-today coordination of the project.

I also appreciate the continued support of my family and the interest of my friends and colleagues. It would not have been possible to complete a project of this magnitude without the support of those close to me.

#### **Publisher's Acknowledgments**

We're proud of this book; please send us your comments through our online registration form located at <a href="https://www.dummies.com/register/">www.dummies.com/register/</a>.

Some of the people who helped bring this book to market include the following:

**Acquisitions and Editorial** 

Project Editor: Rebecca Senninger

**Acquisitions Editor:** Kyle Looper

**Senior Copy Editor:** Teresa Artman

**Technical Editor:** Howard Hammerman

Editorial Manager: Leah Cameron

**Editorial Assistant:** Amanda Foxworth

Senior Editorial Assistant: Cherie Case

**Cartoons:** Rich Tennant (<u>www.the5thwave.com</u>)

**Composition Services** 

**Project Coordinator:** Lynsey Stanford

**Layout and Graphics:** Reuben W. Davis, Alissa D. Ellet, Melissa K. Jester, Christine Williams

Proofreaders: Susan Moritz, Toni Settle

**Indexer:** Infodex Indexing Services Inc.

#### Publishing and Editorial for Technology Dummies

**Richard Swadley,** Vice President and Executive Group Publisher

**Andy Cummings,** Vice President and Publisher

Mary Bednarek, Executive Acquisitions Director

Mary C. Corder, Editorial Director

#### **Publishing for Consumer Dummies**

Diane Graves Steele, Vice President and Publisher

Joyce Pepple, Acquisitions Director

#### **Composition Services**

Gerry Fahey, Vice President of Production Services

**Debbie Stailey, Director of Composition Services** 

#### **Contents**

#### **Title**

## Introduction About This Book Conventions Used in This Book What You're Not to Read Foolish Assumptions How This Book Is Organized Icons Used in This Book Where to Go from Here

#### Part I: Reporting Basics

Defining an Effective Report Design

```
Chapter 1: Transforming Raw Data into Meaningful Information
Major Features of Crystal Reports 2008
The Lone Edition of Crystal Reports 2008
Viewing a Report
Chapter 2: Create a Simple Report Right Now!
First Things First: Finding the Sample Database
Starting Crystal Reports 2008
Creating a Report with the Blank Report Option
Printing a Report
Where to Go from Here
Chapter 3: Report Design Guidelines
```

**Defining Your Audience** 

<u>Defining the Report's Purpose</u>

**Choosing Content for Your Report** 

**Choosing the Report Appearance** 

Chapter 4: Starting Your Report

<u>Using the Report Creation Wizard</u>

Starting with a Blank Report

Connecting Your Report to Its Data Source

#### <u>Part II: Moving Up to Professional-Quality Reports</u>

<u>Chapter 5: Pulling Specific Data from a Database</u>

Get Data Quickly with Select Expert

<u>Using Formulas to Retrieve Data</u>

<u>Using Parameter Fields to Retrieve Data at Runtime</u>

<u>Troubleshooting Tips When Retrieving Data</u>

Chapter 6: Sorting, Grouping, and Totaling Report Data

Sorting Report Data

Adding Sort Controls to a Report

Grouping Related Items

<u>Calculating Percentages</u>

**Drilling Down for Detail** 

Keeping Track of Things with Running Totals

Troubleshooting Sorting, Grouping, and Totaling Problems

Chapter 7: Mastering Report Sections

Changing the Size of a Section

Formatting with the Section Formatting Menu

<u>Using Section Expert for Easy Section Formatting</u>

Placing Groups Where You Want Them

Hiding Details with Summary and Drill-Down Reports

**Generating Barcodes** 

**Creating Mailing Labels** 

Saving Money on Postage with a ZIP Sort

<u>Chapter 8: Enhancing Your Report's Appearance</u>

Absolute Formatting

Conditional Formatting Using the Format Editor

Creating Emphasis with Highlighting Expert

Adding Pictures to Your Report

<u>Aligning Preprinted Forms</u>

Adding Text from a File

Formatting Options

Special Fields Contain Report Metadata

Raising a Red Flag with Report Alerts

<u>Using Report Templates to Save Time and Effort</u>

#### Part III: Advanced Report Types and Features

Chapter 9: Displaying Your Top Ten (Or Top N) with Group Sort

Sorting Groups Based on Performance

Going with the Percentages

A Choice of Group Sorts

<u>Troubleshooting Group Sort Problems</u>

Chapter 10: Adding Formulas to Reports

Formula Overview and Syntax

<u>Lessening the Workload with Functions</u>
Creating a Custom Function in Formula Workshop
Changing and Deleting Formulas
<u>Data Types</u>
<u>Variables in Formulas</u>
Control Structures
Chapter 11: Creating Reports within a Report
Combining Unrelated Reports
<u>Linking a Subreport to a Primary Report</u>
On-Demand Subreports Boost Efficiency
Passing Data between Reports
<u>Troubleshooting Subreport Problems</u>
Chapter 12: Combining Report Elements with OLE
Overview of OLE
Static OLE Objects
Embedded OLE Objects
<u>Linked OLE Objects</u>
Embedding or Linking an Object Taken from a File
<u>Integrating Shockwave Flash Objects into Your Reports</u>
Chapter 13: Creating and Updating OLAP Reports
What's OLAP, and Why Might You Need It?
OLAP Reporting with Crystal Reports
<u>Updating an OLAP Report</u>
Formatting Data in an OLAP Report
<u>Changing Data Appearance in an OLAP Report</u>
Chapter 14: Using Cross-Tab Reports to Mine Your Data

Creating a Cross-Tab Object to Summarize All Report Data

Summarizing the Contents of a Group with a Cross-Tab

Making Calculations within a Cross-Tab Row or Column

Enhancing the Appearance and Readability of a Cross-Tab Object

**Chapter 15: Enhancing Reports with Charts** 

**Using Chart Expert** 

Creating a Chart

Choosing the Best Chart Type for Your Data

<u>Different Chart Layouts for Different Data Types</u>

Seeing How Chart Placement Affects the Data It Represents

**Troubleshooting Chart Problems** 

Chapter 16: Adding Geographic Detail with Maps

Choosing the Right Crystal Reports Map

<u>Creating a Map Step by Step</u>

Troubleshooting Map Problems

**Chapter 17: Interactivity Features** 

<u>Crystal Xcelsius Overview</u>

<u>Adding Xcelsius Capability to a Report</u>

Enhancing a Report with the Tasteful Use of Flash

#### <u>Part IV : Crystal Reports in the Enterprise</u>

Chapter 18: Crystal Reports Server

Connecting to Data Sources

Formatting Reports with Crystal Reports Developer

**Providing Platform Services** 

<u>Useful Management Tools</u>

**Application Services** 

Web Services

<u>Viewing and Interacting with Reports</u>

<u>Chapter 19: BusinessObjects Enterprise Repository</u>

Adding Folders to Your Repository

Storing Your Valuables in BusinessObjects Enterprise Repository

<u>Using Repository Objects in a Report</u>

Modifying a Repository Object

**Deciding Whether to Update Reports Automatically** 

<u>Deleting Objects from the Repository</u>

Chapter 20: Navigating with Report Parts

<u>Understanding Report Parts Navigation</u>

<u>Using Report Parts to Navigate a Report</u>

#### Part V: Publishing Your Reports

Chapter 21: Sending Your Reports Out into the World

**Printing Your Report** 

Faxing a Report

**Exporting a Report** 

**Troubleshooting Output Problems** 

Chapter 22: Displaying Reports Online

**Exporting to a Static HTML Page** 

Adding a Hyperlink to a Report

<u>Distributing Reports via crystalreports.com</u>

Integrating with salesforce.com

Publishing to crystalreports.com with Crystal Reports Desktop Publisher

<u>Interactive Report Viewing with Crystal Reports View</u>	<u>lg with Crystal Reports Viewer</u>
---	---------------------------------------

**Chapter 23: SQL Expression Fields** 

Creating an SQL Statement

Modifying an SQL Statement

#### Part VI: The Part of Tens

Chapter 24: Ten Things to Do Before You Create a Report

<u>Identify the Users</u>

Interview the Users

Get Agreement on the Report's Appearance

<u>Arbitrate Conflicting Demands</u>

Nail Down the Project Scope

Nail Down the Project Schedule

<u>Verify That the Necessary Data Is in the Database</u>

Determine How the Report Will Be Viewed

Determine the Best Report Type for the Users' Needs

Decide Whether to Include Charts or Maps

Chapter 25: Ten Ways to Give Your Reports More Pizzazz

Use the Correct Fonts

**Use Color Tastefully** 

**Enclose Text in Boxes** 

**Emphasize Boxes with Drop Shadows** 

<u>Produce a Consistent Appearance with Templates</u>

Add an Image

Add a Chart

Add a Map

Combine Two Objects with an Underlay

Separate the Summary from the Details with Drill Down

#### Introduction

Crystal Reports 2008 is the latest in a long and celebrated series of report writers for personal computers. Crystal Reports is by far the bestselling report writer package in the world, even though you might not know it by name. (It's been bundled with many of the most popular applications without being acknowledged by name. For example, a version of Crystal Reports is currently bundled into Microsoft's Visual Studio .NET.) However, Crystal Reports 2008 is available as a standalone product. And if you want to produce a high-quality report quickly, Crystal Reports is the top choice to do the job.

#### **About This Book**

Crystal Reports 2008 For Dummies is a book that gets you using Crystal Reports quickly and effectively. This book covers all the major capabilities of Crystal Reports but doesn't bog you down in intricate detail. The objective is to give you the information you need to produce the types of reports that most people need most of the time. I also get into some out-of-the-ordinary report types that you might be called upon to generate on occasion.

Use this book as a handy reference guide. Each chapter deals with an individual feature that you might need at one time or another. Pull out the book, read the chapter, and then do what you need to do. In many cases, step-by-step procedures walk you through commonly needed operations. You might find it worthwhile to put the book beside your computer and perform the operations while you read about them.

Anyone who might be called upon to produce a report based on database data can profit from the information contained in this book. It's also valuable for managers who might never produce a report but who oversee people who do. This book tells you what's possible, what you can do easily, and what takes a little more effort to accomplish. This knowledge can help you estimate how long it should take to produce reports of various types.

## Conventions Used in This Book

When an instruction in the book refers to a command path — for instance, "Choose File⇒Save" — that simply means to click your mouse button on File on the main menu, and then choose Save from the submenu that drops down from it.

Anything you see that is printed in a monospaced font is code, or something you'll run across in the course of

programming a database. This is a monospaced font. Crystal Reports executes code that you enter as formulas or SQL statements.

#### What You're Not to Read

You can certainly choose to read this book from cover to cover, working through the examples, although you don't have to. Regardless of whether you read it all the way through in order, think of this book as a handy quick reference by your side when you want to perform a particular operation you haven't used in a while (or ever).

An upcoming section of this introduction explains the icons you'll normally run across, and there is a good reason for paying attention to each of them. However, consider yourself exempted from the requirement to read anything that appears by a Technical Stuff icon.



Material placed next to one of these icons might be interesting to techies like me (and like some of you out there) but generally isn't necessary for a full understanding of how to use Crystal Reports.

#### **Foolish Assumptions**

I've never met you, but I have to make a few assumptions about you and what you know. For example, I assume

that you know how to use a personal computer and that you're somewhat familiar with Microsoft Word. If you know how to navigate Microsoft Word, you already know almost all there is to know about navigating Crystal Reports. The user interfaces of the two products are similar.

I assume that you've seen directory trees before, such as those extensively used in Microsoft Windows. You know that if you see a plus sign (+) to the left of a node that shows a folder (or other) icon, it means that you can click the plus sign to expand that node to see what the node contains. Crystal Reports treats directory trees in a similar way.

I assume you know how to perform a drag-and-drop operation with your mouse. In Crystal Reports, when you click an object and start dragging it, your progress is shown by a rectangular placement frame. When you release the mouse button to drop the item, the placement frame is replaced by a duplicate of the item that you dragged.

## How This Book Is Organized

This book contains six major parts. Each part contains several chapters.

#### **Part I: Reporting Basics**

Part I introduces you to Crystal Reports and the art of report creation. You find out what a report should accomplish and what it should look like. Then you fire up Crystal Reports and use it to create a simple report based on data held in a database.

#### Part II: Moving Up to Professional-Quality Reports

You can do many things beyond the basics to make reports more focused, more readable, and easier on the eye. This part gives you the information you need to do all those things.

## Part III: Advanced Report Types and Features

Part III gets into serious report creation. With the information in this part, you can zero in on exactly the data you want and display it in the most understandable way. You'll be able to nest one report within another, pull report elements from multiple non-database sources, present multidimensional data in OLAP cubes, illustrate points with charts and maps, and create stunning visuals with Xcelsius and Flash. With these tools, you can produce reports fit for the eyes of the organization's CEO.

#### Part IV: Crystal Reports in the Enterprise

BusinesObjects Enterprise is a companion product to Crystal Reports that controls and secures the distribution of reports. With it, you can make your reports accessible to people on your local area network (LAN), or on the World Wide Web. BusinessObjects Enterprise is also the home of the Repository, which is a great place to store formulas or custom functions so they can be used again.

### Part V: Publishing Your Reports

After you create a report, you'll want to make it available to the people who need it. Crystal Reports makes it easy for you to distribute your report for viewing, whether to colleagues in your organization or to Internet users around the world. In addition, you can publish your reports using traditional methods. You can print it; export it to a file, or fax it to people far away. After you complete report development, distribution is easy.

Although Crystal Reports does a great job when used all by itself, you can also incorporate it into applications written in a computer language. The Crystal Reports SQL Expression Fields facility gives you direct control over the data in a report's underlying database. Because a version of Crystal Reports is included as an integral part of the Microsoft .NET application development environment, you can incorporate the power of Crystal Reports into applications you write in Visual Basic, Visual C++, Visual C#, or any language compatible with the .NET framework. This gives the applications you write the sophistication of the world's leading report writer.

#### Part VI: The Part of Tens

It's always good to remember short lists of best practices. That's what The Part of Tens is all about. Listed here are pointers that help you produce outstanding reports with minimum effort, in the shortest possible time.

#### **Icons Used in This Book**



Tips save you a lot of time and keep you out of trouble.



Pay attention to the information marked by this icon because you might need it.



As I mention earlier, Technical Stuff icons denote detail that I find interesting (and you might, too). However, if you don't, no big deal. These nuggets aren't essential to gain an understanding of the topic being discussed. Skip them if you like.



Heeding the advice that this icon points to can save you from major grief. Ignore it at your peril.

#### Where to Go from Here

Now you're ready to start finding out about using Crystal Reports 2008 to create professional-quality reports based on data stored in your databases. After all, Crystal Reports 2008 is the latest version of the most-popular