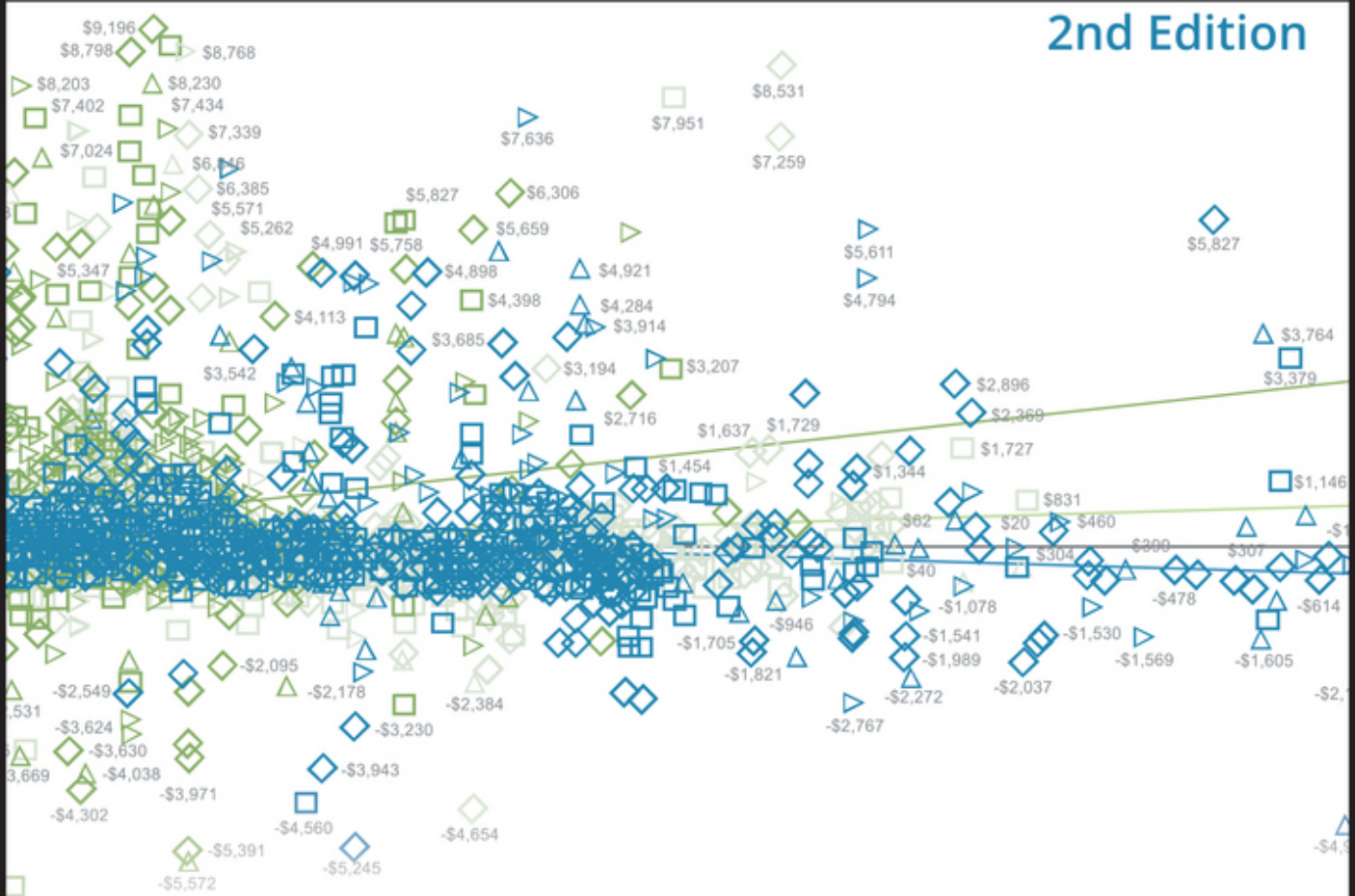


# Tableau Your Data!

Fast and Easy  
Visual Analysis with  
Tableau Software®

2nd Edition



Daniel G. Murray, with the InterWorks team

WILEY



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# About the Author

**Daniel G. Murray** has over 30 years of professional experience. Dan has seen firsthand the technical revolution in data that led to the creation of Tableau Software. Prior to starting the InterWorks Tableau/BI practice in 2008, he held a variety of increasingly responsible roles in finance, accounting, sales, and operations for a mid-sized global manufacturing company serving the heavy industry and construction markets. During the late 1990s, his employer acquired over 50 companies. Dan's role in 2006 as the CFO/CIO led to an assignment to integrate and create a global reporting environment. Uninspired by the high cost and complicated products available from traditional vendors, Dan discovered Tableau Software through data visualization expert Stephen Few. Less than one month after downloading a trial license of Tableau Software, Dan and his team were able to successfully create a reporting platform for less than 15 percent of the cost and one-tenth the time that traditional vendors had quoted. At this point, it was apparent that everyone needed Tableau—they just didn't know it yet.

Within months after speaking at Tableau's first customer conference, Dan went to friend and founder of InterWorks, Inc., Behfar Jahanshahi, to convince him to allow Dan to form a boutique consulting team focusing on providing the best practices of data visualization and reporting using Tableau Software and any emerging or popular database. Since the publication of the first edition of *Tableau Your Data!* Dan has visited 50 cities across North America and Europe presenting over 70 speeches on data and data visualization.

InterWorks, Inc. is now the premier Gold Professional Consulting Partner for Tableau Software with clients all over the world and over 35 Tableau consultants providing data visualization, database, and hardware expertise to many of the most significant organizations—spanning business, education, and government.

Dan is a 1982 graduate of Purdue University's Krannert School of Business. He and his family live in the metro Atlanta area.



# About the Technical Editor

**Dick Holm** is a successful, longtime entrepreneur with expertise in data analysis, statistics, and product positioning and presentation. Dick has been interested in the graphical presentation of information since the age of four when he learned to write his name in the Minnesota snow. He founded his own business based on presenting visual process information to machine operators. It eventually became a \$10 million company. He now spends several hours a day with Tableau Desktop on his screen and a smile on his face.



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# Acknowledgments

When I first approached this edition, I mistakenly thought that writing an updated edition would be easier than writing the original book. I've discovered that writing a guidebook for Tableau is never going to be easy. Tableau's product evolution has been consistently aggressive. During the last two years, Tableau added a slew of new features to Desktop and Server. Consequently, nearly every figure in this book has been updated, and there are over 200 pages of totally new content.

During the last two years, I received lots of feedback from readers of the first edition. That feedback was universally positive and helpful. One individual went out of his way to document improvement ideas by sending me multiple pages of detailed feedback. Dick Holm's feedback was so good I asked him if he would be willing to provide technical editing on this edition. Dick agreed, and his feedback informed every chapter of Part I. I don't want to fail to mention Molly Monsey of Tableau Software. Molly's contribution to the first edition of the book was extensive and invaluable.

This challenging project would have been impossible without the help and support of the InterWorks team. James Wright provided an excellent first draft of Chapter 9, "Designing for Mobile." Kate Treadwell drafted the new Chapter 10 on Story Points. Our resident server wizard, Brad Fair, updated the initial draft for Chapter 11, "Installing Tableau Server." Mat Hughes updated the initial draft of Chapter 12, "Managing Tableau Server." Eric Shairla, Javod Khalaj, and Greg Nelms provided the first draft of Chapter 13, "Automating Tableau Server," which included new code samples for illustrating some of the new capabilities of Tableau's expanding API toolsets.

InterWorks has many wonderful clients, but I would specifically like to thank Donna Costello of Cigna Healthcare for inviting me to speak at one of her Tableau User Group meetings and providing a case study from Cigna's internal user group. As Tableau's first successful partner, we've learned a lot about how to effectively deploy Tableau. InterWorks East Coast Team Leader James Wright recaps key success factors in his case study that shares lessons learned.

After writing the first edition of this book I had the honor of speaking at over 50 Tableau User Groups all over North America and Europe—meeting hundreds of Tableau users. Their enthusiasm reminds me of how I felt about Tableau Software when I first discovered it in 2007. One of the best things about

Tableau Software is the community of people who use the product. Your Tableau Public posts and generosity inspire me. The Tableau Zen Masters are a great example of this sharing. I want to thank all of them for the insights they have shared with the community.

This book wouldn't have been possible without the faith and support of InterWorks CEO Behfar Jahanshahi. Behfar believed in a big idea with a little following in 2007. His strategic and tactical leadership continues to shape our success. His wisdom, insight, and kindness continue to inspire me.

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# Introduction: Overview of the Book and Technology

This book aims to provide an introduction to Tableau in the context of the needs of enterprises—large and small. With every Tableau deployment, there are several user constituencies—report designers who are responsible for performing analysis and creating reports, information technology team members who are responsible for managing Tableau Server and maintaining good data governance, and the information consumers who use the output and may want to do their own report creation.

This book's goal is to provide each group with a basic introduction to Tableau's Desktop and Server environments while also providing best practice recommendations that encompass novice, intermediate, and advanced use of the software.

## HOW THIS BOOK IS ORGANIZED

There are four distinct sections. Part I (Chapters 1–10) covers the basics of Tableau Desktop and then progresses to more advanced topics including best practices for building dashboards to ensure they are understandable to end users, load quickly, and are responsive to query requests made by your audience. A lot of new and updated content had to be created in Chapters 1–5 because of interface enhancements and added capability in the tool. Chapter 6 includes expanded content related to data discovery and editing content on Tableau Server. Chapter 7 includes new tips and tricks that relate to V9+. Chapter 8's detailed dashboard example has been edited to include an additional action to create a floating and disappearing chart. Tablet computers have become ubiquitous and Tableau has added more capability in its web/mobile platform, so this edition includes a new Chapter 9 on mobile design and consumption with additional content. Chapter 10 on Story Points is also a completely new chapter.

Part II (Chapters 11–13) focuses on Tableau Server, mostly from the perspective of a technology manager responsible for installing, securing, and maintaining the Tableau Server environment. Tableau Server Version 9 is one of the most significant upgrades to Tableau Server ever. Not only has the user interface been redesigned and improved, but the backend processes have been enhanced, and Tableau's API toolset has been expanded. Consequently, every chapter in Part II contains significant content updates and additions.

Part III (Chapter 14) includes a new case study that provides tips for ensuring successful Tableau deployments. Cigna Healthcare created an internal user group aimed at improving employee skills and building enthusiasm around their Tableau deployment.

Part IV (Appendixes A–G) provides additional details on Tableau Software's current product ecosystem, supported data connections, keyboard shortcuts for Windows and the Mac, and recommended hardware configurations, and also includes a detailed Tableau function reference that provides explanations for function syntax and code samples. Some of these sections were included in the chapter content in the first edition. Due to their dynamic nature of the material, it made sense to break them out into separate appendixes so that we could include the most up-to-date information as close to publication as possible.

It's a challenge writing a book on this product line. Tableau Software's research and development spending reached an all-time high last year, and Tableau's management team remains committed to 12–15 month major release cycles. There isn't a lot of time to update a guide that is 600+ pages.

## WHO SHOULD READ THIS BOOK?

This book is intended to introduce new users to the features that Tableau Desktop has to offer from the perspective of someone who needs to create new analysis or reporting. It is also intended for staff responsible for installing, deploying, and maintaining Tableau Server.

The chapters related to Tableau Server are more technical because the subject matter assumes that you have a grasp of server terminology and security.

You can read the book sequentially from start to finish. Or, you can skip around and read about a topic of particular interest. Each chapter builds on the previous material, but if you've already mastered the basics of connecting and using the Desktop, you can skip any chapter related to Tableau Desktop and focus on topics of interest. Care has been taken to cross-reference related topics. So if you are the type of reader who wants to skip to a particular topic, breadcrumbs have been dropped so you can efficiently find related topics.

## TOOLS YOU WILL NEED

You can read the book without having Tableau Software installed on your computer, but you'll get a lot more from the material if you follow the examples yourself. Tableau provides free trials of the software. Alternatively, you can

download Tableau Public for free, indefinitely—all of the book examples related to Tableau Desktop should work on Tableau Public.

## WHAT'S ON THE COMPANION WEBSITE?

Tableau constantly updates the Desktop and Server products with multiple maintenance releases and at least one major product release every 12 to 15 months. The book's companion website includes articles related to the releases, sample files related to the book's examples, and also examples related to new capabilities added to the product as Tableau makes them available. The InterWorks team actively tests new Tableau products, so the companion website may also include demonstrations of new visualization types or techniques before they become available publicly.

Wiley also has a website dedicated to the book that you can find at [www.wiley.com/go/tableauyourdata2e](http://www.wiley.com/go/tableauyourdata2e).

## SUMMARY

Tableau lowers the technical bar for accessing data from many different data sources. This book should allow you to advance your technical ability and save time deploying Tableau in your enterprise by enabling you to make better decisions earlier in your deployment.

