

FileMaker® Pro
Design & Scripting
FOR
DUMMIES®

by Timothy Trimble



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Timothy Trimble is a professional computer geek, writer, and software developer with over 25 years of industry experience. He started as a video game developer and worked his way into the PC and PDA software development markets on various commercial, corporate, and vertical market applications. He currently exhibits his geekish tendencies as a FileMaker developer at SolutionMakers, Inc. (www.solutionmakers.com) in Woodinville, WA.

Timothy has written a multitude of articles for various industry publications and wrote a book on flight simulation. He maintains a blog on the Art of Software Development at www.timothytrimble.info. Although he has significant publishing credits in the computer industry, he dreams of some day having his science fiction work published as well.

When Timothy is not cranking away at the keyboard, he likes to be with his family, entertain his friends by singing and playing guitar, and door-to-door to tell others about his faith. Feel free to contact Timothy with your comments on this book by e-mailing him at fmp4d@timothytrimble.info.

Dedication

To the WhoWeAre Band. Two CDs, the House of Blues, and a wonderful, nine-year ride that I'll never forget!

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Introduction

With over 10 million units of FileMaker software sold around the world, FileMaker has become the diamond in the rough when it comes to creating and managing data. After over 20 years of use, today's FileMaker Pro 8 has matured from its humble beginnings to become the hottest cross-platform database-development environment available.

Though I hate to admit it, when I first took a look at FileMaker in the early '90s, I wasn't impressed. The database tables were flat (no relationships), and aside from being able to quickly throw together some forms, I couldn't see how or why this application had any appeal. Needless to say, I was blinded by my experiences with dBASE and Superbase. Yes, I was being narrow minded. I took another look with version 5.0, and though I was impressed with the improvements to the database structure and the ability to write programming scripts, I still felt that it was underpowered as a software development tool.

Then FileMaker 7 came out, and I was blown away! My socks rolled up and down! I was impressed with the ability of FileMaker to be utilized as a full-blown application development tool — not only for Mac OS X but Windows as well. Now with the release of version 8 (the current version as I write this book), the FileMaker folks have provided a serious, relational database design and development system. After being in the computer industry since 1982 (yeah, I'm showing my age), I am finally excited about a programming environment again. By the time you get through this book, you'll be excited too!

About This Book

I wrote *FileMaker Pro Design & Scripting For Dummies* for all types of FileMaker users. Whether you're just starting out in developing applications or have experience in database design but are new to FileMaker, this book can help you get custom applications up and running.

You can select individual topics from the book to aid in gaining a deeper understanding of the power of FileMaker, or you can start at the beginning and cover each chapter in sequence. How you use this book is up to you, but regardless of your current FileMaker experience, I hope that you find out something new about this incredible product.

Because FileMaker is a cross-platform tool, this is a cross-platform book. Whether you work on a Mac or a PC, you find the pointers you need.

Foolish Assumptions

This is where I usually get into trouble — especially with my wife, when I assume that she knows what I'm thinking or when I assume that I know what she's thinking. Fortunately, with this book, I can make only some basic assumptions about you as the reader.

- ✓ First of all, to get to this spot, I'm assuming that you have a computer (either a Mac or a PC), you know how to use it, and that FileMaker Pro is already installed on it.
- ✓ To keep the focus on design and scripting, I also assume that you're fairly comfortable with the basics of using FileMaker. If you need more general information about working with FileMaker, check out *FileMaker Pro 8 Bible* by Dennis R. Cohen and Steven Schwartz (Wiley Publishing).
- ✓ I *don't* assume that you have any programming knowledge, or that you have done any database development before. It should be easy for you to grasp an understanding of these topics by reading this book.

How This Book Is Organized

This book is organized in a manner that allows you to quickly find what you're looking for. While a complete understanding of FileMaker Pro design and scripting could fill several books with thousands of pages, my intent with this book is to give you enough information to make you productive as a beginner.

Part I: Getting to Know FileMaker Pro

To kick off Part I, Chapter 1 introduces why FileMaker is such a great tool for application development, helps you choose the right version, offers tips for setting up FileMaker, and gives you a quick tour of the interface. In Chapter 2, I explain how you begin building your database, and Chapter 3 helps you tap into the power of scripts.

Part II: Building the Perfect Beast

Part II begins with one of my favorite chapters of the book, Chapter 4, which guides you through the process of designing a good FileMaker application. Here, you discover the fundamentals of database design, layout design, and what makes a good software program.

The remaining chapters in this part help you fine-tune your creation, and a sample application called Hey, Look at Me! is provided as a workbench. Chapter 5 explains how to make your database layouts look good while adding more functionality to your database application. Chapter 6 offers tips and tricks for adding searching and sorting capabilities to your application. And in Chapter 7, you discover how to assign functions to objects on the layout, use lists and menus, and more.

Part III: Taking Control with FileMaker Programming

This is where you get to be geeky! Chapter 8 digs deep into the logical processing power of the Calculation Editor so that you can enhance your programs. And you'll get a nice, dice-rolling application out of it too! Then in Chapter 9, I share the programming tools I've put together over the years so you can start creating a toolbox of templates and organization tricks all your own.

Part IV: FileMaker Exposed! Sharing and Protecting Your Database

This very important part of the book deals with sharing your data — making sure you share it only with the people who should have access to it. In Chapter 10 you find out how to move data in and out of your database, by importing data from common sources, such as Excel or comma-delimited files, or exporting it to other formats when you need to. This chapter also explains how to make your FileMaker database available for others on a network. And because others will use your database, you find out about security and how to create and manage user accounts and Privilege Sets in Chapter 11. Then no discussion of sharing data would be complete without a chapter on how to put your database on the World Wide Web (Chapter 12).

Part V: The Part of Tens

In Chapter 13, find out how to apply your newfound knowledge to the amazing capabilities of FileMaker. You find ten cool things you can do with FileMaker, beginning with hiding buttons and including discovering how to launch another application on your computer. Chapter 14 wraps up this part with an introduction to great add-ons that help you extend FileMaker's capabilities.

Appendix: Scripting Reference

Be prepared to come back to this part of the book on a regular basis. This section is a reference for the FileMaker Pro scripting language. Not only do I show you the syntax and options of various script steps, but I also give some examples on how to use those functions in your FileMaker programs.

Icons Used in This Book



The Tip icon draws your attention to tips on how to use FileMaker to its full potential.



Remember when you used to tie string around your finger to help you remember something? Well, now we all use PDAs and smartphones. Anyway, this icon indicates something that you should remember when using FileMaker.



The Warning icon alerts you to very important information that you should be aware of. Ignoring this information could lead to very undesirable results.



If you're feeling geeky or would like to have a little more technical knowledge about FileMaker, the computer industry, terminology, or just geeky stuff in general, feel free to read the items marked with this icon at your leisure.

Downloads for This Book

In many places throughout this book you're directed to files that you can download as examples and workbenches for steps in the book. These locations are:

-
- ✓ www.timothytrimble.info
 - ✓ www.dummies.com/go/filemakerprodesign

Where to Go from Here

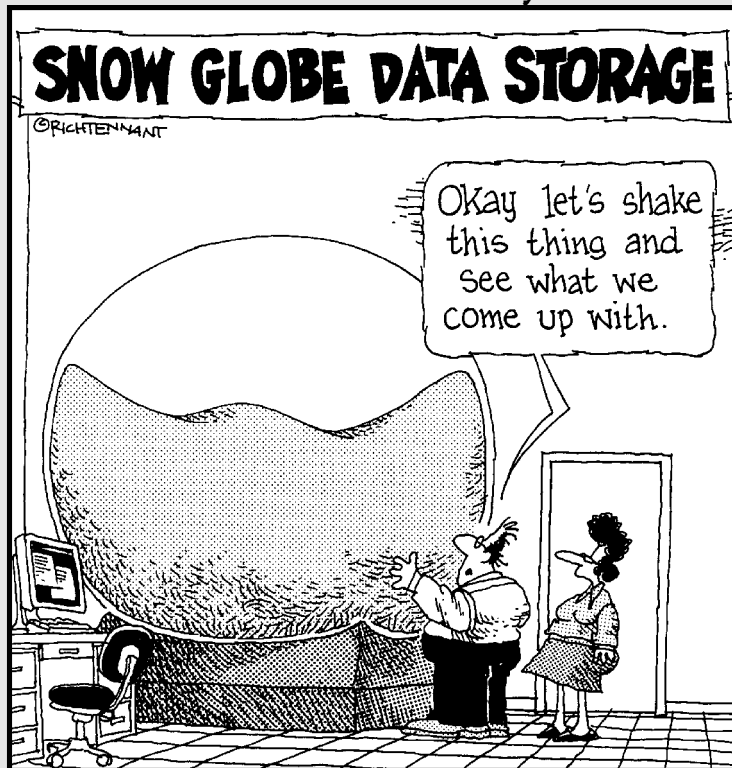
If you're an experienced FileMaker user, you might want to just skim the table of contents and determine what's of interest to you. You might be amazed to discover that there are some areas of FileMaker that you haven't found out how to utilize yet. However, if you're just getting started with FileMaker, dive into Part I, follow each chapter in sequence, and be prepared to have your socks knocked off!

Part I

Getting to Know FileMaker Pro

The 5th Wave

By Rich Tennant



In this part . . .

You take the first steps toward building your own application in this part. Chapter 1 introduces application design the FileMaker way by explaining what you can do and what version you need to do it, and taking you on a crash course of the interface from a developer's perspective. Chapter 2 shows you how to create the foundation of your application — the database that will hold the data. And Chapter 3 gets you started with building calculations in the Calculation Editor and adding them to your database. If you're new to development, this may seem like a huge undertaking, but FileMaker (and these chapters) make it easier than you'd think.

Chapter 1

Introducing FileMaker Pro

In This Chapter

- ▶ Why FileMaker?
 - ▶ Knowing what to use FileMaker for
 - ▶ Choosing a version of FileMaker
 - ▶ Using toolbars
 - ▶ Configuring FileMaker
-

How many times have you heard the phrase “information is power”? The ability to keep and manage information accurately is indeed powerful, especially when that information is vital to your business or personal life. FileMaker places that power in your hands by giving you the ability to easily create, manage, and view vital (and sometimes not so vital) information. The good news is that a certificate from High Tech U is *not* required to tap into all that power!

Why Use FileMaker?

Yes, you can choose from a lot of products designed for keeping track of information. Just off the top of my head, I can think of Microsoft Access, Oracle, Microsoft SQL Server, Acius 4D, FoxBase, MySQL, and dBASE (Yes, it's still around). So, with all these other products out there, why should you use FileMaker? Here are just some of the reasons:

- ✔ Through the use of layouts, FileMaker provides a point-and-click interface for designing databases without requiring you to have prior database experience.
- ✔ FileMaker allows for cross-platform databases for Microsoft Windows and Mac OS X. You can design your database in one environment and run it on both platforms.
- ✔ You can publish your database to the Web in just a few clicks, which means that users on any platform with a compatible browser can use your database — even Linux users.

- ✔ FileMaker lets you save data as an Adobe PDF, a Microsoft Excel spreadsheet, an XML document, and many other formats for importing and exporting data.
- ✔ FileMaker comes with 30 Starter Solutions databases that you can put to work right away, or you can examine their script code, layouts, and databases to find more about FileMaker development.
- ✔ You can easily use FileMaker for storing and showing pictures and movies, playing sounds, and linking with many different multimedia file types.
- ✔ FileMaker provides full, multiuser support for up to five users without requiring the user to add any additional licenses or patches. (FileMaker Server supports up to 250 users.)
- ✔ FileMaker has a powerful point-and-click script programming environment for creating sophisticated applications, while it preserves an easy-to-use list of robust functions that can be assigned to buttons and layout objects.

With over 10 million licensed copies sold, FileMaker is a significant database design and development tool for use by novices and seasoned developers.

Common uses for FileMaker

Now that you have the power of FileMaker in your hands, what are the types of things that you can use FileMaker for? Here are some common databases that have been designed with FileMaker:

- ✔ **Contact management:** That's a fancy way of saying *an address book*. This is one of the most prevalent uses for FileMaker. In fact, one of the sample applications that comes with FileMaker is named Contact Manager. It's perfect for tracking your personal and business contacts.
- ✔ **Inventory control:** Need a place to track all your products? Many developers design inventory control applications with FileMaker. And with the integration with e-mail, you can use FileMaker to automatically e-mail your vendors when your products on hand are getting low.
- ✔ **Project management:** This is another great example of the type of things that people are doing with FileMaker. They track their projects, tasks associated with the projects, and the people assigned to handle those tasks and projects.
- ✔ **Time and billing:** This is one way my employer and I use FileMaker. As we do projects for our customers, we keep track of how much time we put into a project. Then FileMaker generates invoices and reports for billing our customers.
- ✔ **Tracking newspaper ads:** This is how the USA Today folks use FileMaker. They keep track of all the newspaper ads in the newspaper, their locations in the paper, and the date they are to be included in the print run. Plus, the information is shared with their AS/400 computer via SQL. Now that's power!

Picking the Version That's Best for You

The full range of FileMaker products is designed to fit the needs of any database, but you most likely want FileMaker Pro or FileMaker Pro Advanced. Although FileMaker Pro is the base version of FileMaker, don't think that it lacks power. It provides all the tools necessary for creating, customizing, and managing databases for use as stand-alone, multi-user, or Web-based databases.

However, FileMaker Pro Advanced comes with extra features that you'll find especially useful in database design and scripting. Along with the features of FileMaker Pro, FileMaker Advanced supports tooltips, custom menus, advanced script debugging with data viewing, a built-in calendar control, and the ability to create runtime FileMaker applications. Tooltips make it easier to blend seamless hints and reminders on using your database application. Custom menus let you tailor a database solution to your particular clientele, eliminating unnecessary menus and providing menus and menu items specific to your solution and client. Although FileMaker Pro's scripting is one of the easiest-to-use programming environments around, scripting is still programming and the ability to step through a script to ascertain why it is doing something you don't expect (or not doing something you do expect) is very helpful in getting your scripts just right.

A version to suit every purpose

In addition to FileMaker Pro and FileMaker Pro Advanced, you can get FileMaker in a few other ways, too. The following versions suit more specialized uses of FileMaker:

- ✔ **FileMaker Mobile 8** helps you extend your FileMaker databases to the Palm OS and Pocket PC PDA devices, and it lets you synchronize your data with all the FileMaker 8 products. In this hand-held world, you and/or your clients are prone to be tethered to a PDA. Being able to access your FileMaker Pro data from your PDA is an obvious step.
- ✔ **FileMaker Server 8** is used in larger, multi-user environments. It offers support for up to 250 users, along with the necessary tools for security, automated backups, and remote administration. If you develop for a corporate or institutional user, five simultaneous users just won't cut it. Deploying your solution via FileMaker Pro Server is the next step up.
- ✔ **FileMaker Server 8 Advanced** has the same features as FileMaker Server 8; plus, it supports up to 100 Web-based users, 50 ODBC/JDBC users, and 250 FileMaker 7 and FileMaker 8 users. The top rung on the FileMaker Pro ladder is for those of you with really heavy usage requirements.

The Happy Modes of FileMaker

The word *mode* makes me think of the word *mood*. I guess I'm just weird that way. However, notice the following similarity. The mood of your spouse, friend, or coworker can determine what you're going to ask for, just as the mode that FileMaker is in dictates what you can ask it to do. I'm just glad that all the modes of FileMaker are happy modes. Each of the four modes helps you get something done by offering different types of functionality. If you're new to FileMaker, I'm happy to introduce them:

- ✓ **Layout** is the mode where you'll spend much of your time because it's for designing the layouts and reports your customers see and employ (in the Browse and Find modes) when entering, perusing, and searching for data.
- ✓ **Browse** mode is for browsing and editing the data in the database. This is the mode where you can check out your final product, and it's the mode that your users will likely use most often.
- ✓ **Find** mode is for searching for specific data within the database. This is where your customers search for records in your database, so you should make sure to design layouts that facilitate searching.
- ✓ In **Preview** mode, what you see is what you get! It's for previewing what the printed layout or report will look like before your customer actually prints it.



So, where will you spend most of your time? Initially, if you're designing a database application, you do most of your work in Layout mode as a developer. After you complete the application, you spend most of your time in Browse mode as an application user with an occasional jaunt into the Find and Preview modes.

To move in and out of the different modes, you can use the Tool palette. Although most of the tools on the palette change as you move between the modes, you always see the following buttons, which you click to move to a different mode:



Browse mode

Find mode

Layout mode

Preview mode