LEARNING MADE EASY

2nd Edition

Microsoft 365®

Access™

for dummies®

A Wiley Brand

Build a great database to manage your info

Master key tools to control your data usability

Create efficient forms and illuminating reports

Laurie A. Ulrich
Ken Cook

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Contents at a Glance

Table of Contents

Introduction

Welcome! Thank you for selecting this book. We assume you've done so because you're hoping it will explain how to use Microsoft Access, and of course, as the authors, we believe it will — that's why we wrote it! We, the authors, have both been teaching and using Access for a very long time, and we know how to share what we know with our students.

So what was it that made you seek out a book on Access? It might be that you've been asked to use it at work, or perhaps you run your own business or are managing a nonprofit organization. If any of these is the case — or if you're just a regular human with a lot of personal contacts and irons in the fire, you need Access to organize your data. You need it so you can find a name or a transaction in seconds after a few keystrokes, not after minutes spent scanning your spreadsheets or swiping apps this way and that on your smartphone. You need it so you can produce reports that make you look like the genius you are. You need it so you can create cool forms that will help your staff enter all the data you've got stacked on their desks — and in a way that lets you know the data was entered properly so that it's accurate and useful. You need Access so you can find little bits of data out of the huge pool of information you need to store. So that's it. You just need it.

About This Book

With all the power that Access has (and that it therefore gives *you*), there comes a small price: complexity. Access isn't one of those applications where you can just sit down and use "right out of the box." It's not scarily difficult or anything, but there's a lot going on — and you need some guidance, some help, and some direction to really use it and make it bend to your will. And that's where this book — a "reference for the rest of us" — comes in.

So you've picked this book. You've done a smart thing (if we don't say so ourselves) and whether you begin with Chapter 1 or whether you dive in and start with a particular feature or area of interest that's been giving you fits, just read, and then go put Access to work for you.

Foolish Assumptions

You need to know only a few things about your computer and Windows to get the most out of *Access For Dummies.* In the following pages, we presume that you:

- Know the basics of the current version of Windows — how to open programs, save your files, create folders, find your files after you've saved them, print, and do basic stuff like that.
- Have some goals that Access will help you reach. You
  - want to build your own databases

    and/or
  - want to work with databases that other people have created
- Want to use and create queries, reports, and an occasional form
- Have a computer capable of running the latest version of Windows and the Access application

  If your computer uses a version of Windows prior to Windows 10, you can't run recent versions of Access.


TECHNICAL STUFF

Icons Used in This Book

When something in this book is particularly valuable, we go out of our way to make sure that it stands out. We use these cool icons to mark text that (for one reason or another) *really* needs your attention. Here's a quick preview of the ones waiting for you in this book and what they mean.


TIP

Tips are incredibly helpful words of wisdom that promise to save you time, energy, and the embarrassment of being caught swearing out loud while you think you're alone. Whenever you see a Tip, take a second to check it out.


REMEMBER

Some things are too important to forget, so the Remember icon points them out. These items are critical steps in a process — points that you don't want to miss.


TECHNICAL STUFF

Sometimes we give in to the techno-geek lurking inside us and slip some technical babble into the book. The Technical Stuff icon protects you from obscure details by making them easy to avoid. On the other hand, you may find them interesting. (Your inner techno-geek will rejoice.)

WARNING

The Warning icon says it all: *Skipping this information may be hazardous to your data's health.* Pay attention to these icons and follow their instructions to keep your databases happy and intact.

In addition to the content in this book, you'll find some extra content available by visiting `www.dummies.com` and typing **Access** into the search box, including

- The Cheat Sheet for this book
- Updates to this book, if any

Where to Go from Here

Now nothing's left to hold you back from the thrills, chills, and power of Access. Not sure where to start? See if you spot yourself in these scenarios:

- If you're brand new to the program and don't know which way to turn, start with the general overview in Chapter 1.
- If you're about to design a database, we salute you — and recommend flipping through Chapter 4 for some helpful design and development tips.
- Looking for something specific? Try the Table of Contents or the index.

1 Basic Training

IN THIS PART . . .

Discover what Access is and does and what's new in the current version of Access.

Learn about the objects that make up an effective database, and get started building your first table.

Master database lingo so you can speak the language and understand the terminology.

IN THIS CHAPTER

- Deciding when to use Access
- Discovering what's new in Access
- Unlocking the basics of working with Access
- Figuring out how to get started

Chapter 1

Access Basics

Access, the one, true database application within Microsoft Office, has always been a powerful program. As a result, you're probably reading this book because all that power makes Access an application that's not so easy to learn on your own. You're not alone in that feeling, because Access is also unique within Microsoft Office in that most people can't just fire it up and start using it the way you might have done with your first Word document. So having this book by your side is a good choice.

That said, with the foundation components of Access, and the key functionality that you'll discover in this book, you'll be able to put Access through many of its most important paces. You'll be working with wizards and other onscreen tools that keep you at a comfortable arm's distance from the software's inner workings, the things that programmers and serious developers play with, but you'll be harnessing real power. Hope you're feeling better now!

REMEMBER

Please don't panic after reading that reference to "real power." You don't have to use every feature and tool and push the edges of the Access envelope to build a really solid database. In fact, you can use very little of everything Access has to offer and still create quite a significant solution to your needs for storing and accessing data — all because Access can really "do it all" — enabling you to set up a database quickly, build records into that database, and then use that data in several useful ways. Later on, who knows? You may become an Access guru, if that's your desire. And this book can be a great start in that process, too.

In this chapter, you'll discover what Access does best (and when you might want to use another tool instead), and you'll see how it does what it does, and hopefully you'll begin to understand and absorb some basic terminology.

Of course, nobody's expecting you to memorize tons of complex vocabulary or anything scary like that. We would never do that to you. Rather, the goal here (and in the next two chapters) with regard to terms is to introduce you to some basic words and general concepts intended to help you make better use of Access — as well as better understand later chapters in this book, if you choose to follow us all the way to its stunning, life-altering conclusion.

What Is Access Good For, Anyway?

What *is* Access good for? That's a good question. And, happily, the list of what you can do with it is a lot longer than the list of what you *can't* do with it. When it comes to data organization, storage, and retrieval, Access is at the head of the class, no matter what Excel aficionados will tell you — and even if you've been using Excel to sort and filter your lists and thought that was all you need.

Building big databases

Okay, what do I mean by *big* database? Any database with a lot of records — and by *a lot*, I mean hundreds. At least. And certainly if you have *thousands* of records, you need a tool like Access to manage them. Although you can use Microsoft Excel to store lists of records, it limits how many you can store (no more than the number of rows in a single worksheet, which is just over 1 million, but Excel will run poorly if you get anywhere near that number), and it wasn't designed to create a true database. Overall, Excel wasn't designed to create the kind of tools — things like forms and reports — that Access can build. So anything with a lot of records and complex data is best done in Access.

Below are some reasons why Access handles big databases so well.

- **Typically, a big database has big data-entry needs.** Access doesn't just offer forms, but form-building features that enable you to create a quick form through which someone can enter many records, quickly and easily. This creates efficiency and ensures accuracy. (Check out Chapter 8 for more about building forms.)
- **When you have lots and lots of records, you also have lots of opportunities for errors to creep in.** This includes duplicate records, records with misspellings, and records with missing information — and that's

just for openers. So, you need an application like Access to ferret out those errors and fix them. (Chapter 10 lays out how you can use Access to find and replace errors and search for duplicate entries.)

- **Big databases mean big needs for accurate, insightful reporting.** Access has powerful reporting tools you can use to create printed and onscreen reports — and those can include as few or as many pieces of your data as you need, drawn from more than one table if need be. You can tailor your reports to your audience, from what's shown on the reports' pages to the colors and fonts used.
- **Big databases are hard to wade through when you want to find something.** Access provides several tools for sorting, searching, and creating your own specialized tools (known as *queries*) for quickly finding the elusive single record or group of records you need.
- **Access saves time by making it easy to import and recycle data.** You may have used certain tools to import data from other sources — such as Excel worksheets (if you started in Excel and maxed out its usefulness as a data-storage device) and Word tables. Access saves you from reentering all your data and allows you to keep multiple data sources consistent.

Creating databases with multiple tables

Whether your database holds 100 records or 100,000 records (or more), if you need to keep separate tables and relate them for maximum use of the information, you need a *relational* database — and that's Access. How do you know whether your data needs to be in separate tables? Think about your data — is it very compartmentalized? Does it go off on tangents? Consider the following example and apply the concepts to your data and see if you need multiple tables for your database. Hint: You probably do!

The Big Organization database

Imagine you work for a very large company, and the company has data pertaining to their customers and their orders, the products the company sells, its suppliers, and its employees. For a complex database like this one, you need multiple tables, as follows:

- One table houses the customer data — names, addresses, phone numbers, and email addresses.
- A second table contains those customers' orders, including the name of the customer who placed the order, the products they ordered, the salesperson who handled the sale, shipping information, and the date of the order.

- A third table contains information on the products the company sells, including product numbers, supplier names, prices, and the number of items in stock.
- A fourth table contains supplier data — about the companies from which the main organization obtains its inventory of products to resell to customers. The table contains the company names, their contact person, and the address, email, and phone-number information to reach them.
- A fifth table contains employees' data — from the date they were hired to their contact information to their job title — and also contains notes about them, sort of a summary of their resumes for reference.

Hopefully, as we listed those tables, you could see the way they'd be conceptually connected to each other — customers, orders, products, suppliers, and employees — and can therefore see how relationships between those tables would help the tables literally work together.

Other tables exist, too — to keep track of shipping companies and their contact information (for shipping customer orders), expenses (for the expenses incurred in running the business), and other tables that are used with the main five tables. The need for and ways to use the main tables and these additional tables are covered later in this book, as you find out how to set up tools for data entry, relate your tables, look up records within your tables, and create reports that provide varying levels of detail on all the data you've stored.

TIP

Because you don't have to fill in every field for each record — in any table in the database — if you don't have a phone number or don't know an email address, for example, it's okay to leave those fields blank until you've obtained that information.

Fail to plan? Plan to fail

Like just about any undertaking, at least considering the steps involved and the desired outcome is a good idea before you get started. Your database is no different, and has even greater needs for effective planning. If you think carefully about your database, how you use your data, and what you need to know about your employees, customers, volunteers, donors, products, or projects — whatever you're storing information about — you can plan

- How many tables you'll need
- Which data will go into which table
- How you'll use the tables together to get the reports you need

Of course, everyone forgets something, and plans change after a system has already been implemented. But don't worry — Access isn't so rigid that chaos will ensue if you begin building your tables and forget something (a field or two, an entire table). You can always add a field that you forgot (or that some bright spark just told you is needed) or add a new table after the fact. But planning ahead as thoroughly as possible is still essential and is definitely worth the effort.


TIP

As part of thorough planning, sketch your planned database on paper, drawing a kind of flowchart with boxes for each table and lists of fields that you'll have in each one. Draw arrows to show how they might be related — it's sort of like drawing a simple family tree — and you're well on your way to a well-planned, useful database. If you don't want to use actual paper, feel free, of course, to use any application you've used in the past for planning graphically — such as PowerPoint or any diagramming tool.

Here's a handy procedure to follow if you're new to the process of planning a database:

1. **On paper or in a word-processing document, whichever is more comfortable, type the following:**

   - A tentative name for your database
   - A list of the pieces of information you plan on getting from that database on a daily or regular basis

2. **Based on that information, create a new list of the actual details you could store:**

   List every piece of information you can possibly think of about your customers, products, ideas, cases, books, works of art, students — whatever your database pertains to. Don't be afraid to go overboard — you can always skip some of the items in the list if they don't turn out to be things you really need to know (or can possibly find out) about each item in your database.

3. **Take the list of fields — that's what all those pieces of information are — and start breaking them up into logical groups.**

   How? Think about the fields and how they work together:

   - For example, if the database keeps track of a library of books, perhaps the title, publication date, publisher, ISBN (*I*nternational *S*tandard *B*ook *N*umber, which is unique for each book), price, and page count can be stored in one group, whereas author information, reviews, and lists of other titles by the same author or books on the same topic can be stored in another group. These groups become individual tables, creating your relational database of books.

- Figure out what's unique about each record. As stated in the previous point, you need a field that's unique for each record. Although Access can create a unique value for you if no unique data exists for each record in your database, it's often best to have such a field already in place, or to create such a field yourself. Customer numbers, student numbers, Social Security numbers, book ISBNs, catalog numbers, serial numbers — anything that isn't the same for any two records will do.

With a big list of fields and some tentative groupings of those fields sketched out, and with an idea of which field is unique for each record, you can begin figuring out how to *use* the data.

4. **Make a list of ways you might use the data, including**

   - Reports you'd like to create, including a list of which fields should be included for each report
   - Other ways you can use the data — forms for looking things up, catalog data, price lists, contact lists, even labels for mailings and packaging, and so on.

5. **List all the places your data currently resides.** This might be on slips of paper in your pocket, on cards in a box, in another program (such as Excel), or maybe through a company that sells data for marketing purposes.

With this planning done, you're ready to start building your database. The particulars of that process come later in this chapter and in subsequent chapters, so don't jump in yet. You should pat yourself on the back, though, because if you've read this procedure and applied even some of it to your potential database, you're way ahead of the game, and we're confident you'll make good use of all that Access has to offer.

Databases with user forms

When you're planning your database, another thing to consider is how the data will be entered:

» If you'll be doing the data entry yourself, perhaps you're comfortable working in a spreadsheet-like environment (known in Access as *Datasheet view*), where the table is a big grid. You fill it in row by row, and each row is a record.

Figure 1-1 shows a table of volunteers in progress in Datasheet view. You decide: Is it easy to use, or can you picture yourself forgetting to move down a row and entering the wrong stuff in the wrong columns as you enter each record? As you can see, there are more fields than show in the window, so you'd be doing a lot of scrolling to the left and right to use this view.

» You may want to use a *form* (shown in Figure 1-2) instead. A form is a specialized interface for data entry, editing, and viewing your database one record at a time, if

- You like the idea of seeing and entering/editing one record at a time.
- Someone else will be handling data entry.
- Typing row after row of data into a big grid seems mind-numbing and likely to produce errors.

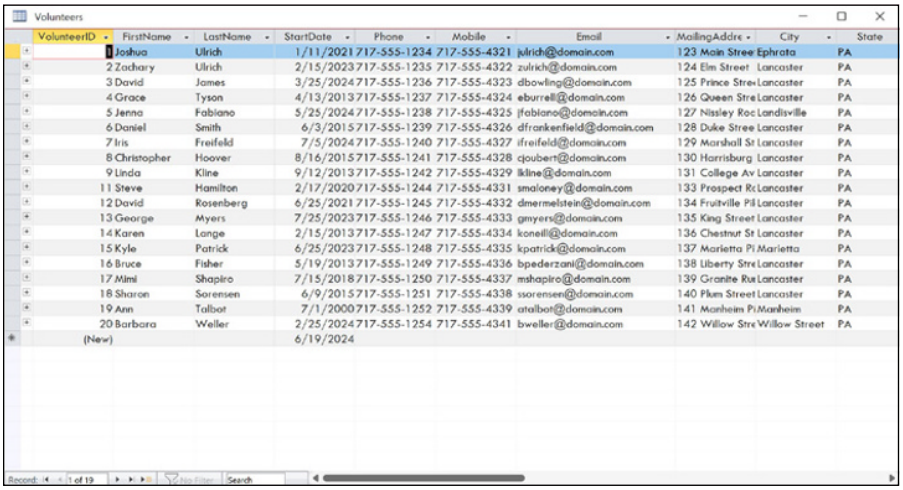

FIGURE 1-1: Datasheet view can be an easy environment for data entry. Or not.

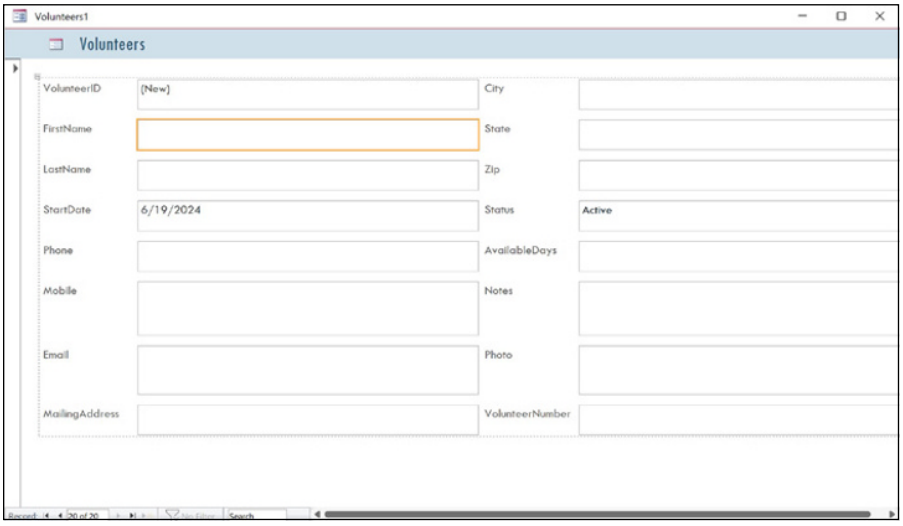

FIGURE 1-2: Here's a simple form for entering new records or reviewing existing ones.

The mind-numbing effect (and increased margin for error) is especially likely when you have lots of fields in a database, and the user, if working in Datasheet view, has to move horizontally through the fields. A form like the one in Figure 1-2 puts the fields in a more visually convenient format, making it easier to enter data into the fields and to see all the fields simultaneously. You can also set up forms that include only the fields you want to see or to use for data entry.

You find out all about forms in Chapter 8. If your database is large enough that you require help doing the data entry, or if it's going to grow over time, making an ongoing data-entry process likely, Access is the tool for you. The fact that it offers simple forms of data entry/editing is reason enough to make it your database application of choice.

Databases that require special reporting

Yet another reason to use Access is the ability it gives you to create and run customized reports quickly and easily. Some database programs, especially those designed for single-table databases (known as *flat-file* databases), have some canned reports built in, and that's all you can do — just select a report from the list and run the same report that every other user of that software runs.

If you're an Excel user, your reporting capabilities are far from easy or simple, and they're not designed for use with large databases — they're meant for spreadsheets and small, one-table lists. Furthermore, you have to dig much deeper into Excel's tools to get at these reports. Access, on the other hand, is a database application, so reporting is a major, up-front feature.

An example? In Excel, to get a report that groups your data by one or more of the fields in your list, you have to sort the rows in the worksheet first, using the field(s) to sort the data, and then you can create what's known as a *subtotal report*. To create it, you use a dialog box that asks you about calculations you want to perform, where to place the results, and whether you're basing a sort and/or a subtotal on more than one field. The resulting report is not designed for printing, and you have to tinker with your spreadsheet pagination (through a specialized view of the spreadsheet) to control how the report prints out.

In Access? Just fire up the Report Wizard, and you can sort your data, choose how to group it, decide which pieces of data to include in the report, and pick a visual layout and color scheme, all in one simple, streamlined, dialog box–driven process. Without requiring you to do anything, the report is ready for printing. Access is built for reporting — after all, it is a database application — and reports are one of the most (if not *the* most) important ways you'll use and share your data.