

EXCEL AS A SIMPLE DATABASE

Organize. Sort. Filter. Control. All in one powerful workbook.

Data Tab
Sort, Filter, and Data Validation are found here.

Filter Arrows
Click the arrow in any column heading to sort (A-Z or Z-A) or filter your data.

Worksheets (Tabs)
Each worksheet is a separate table. One workbook can hold many tables.

Customer Name	City	State	Phone	Email	Last Purchase	Balance
Alice Johnson	Denver	CO	303-555-1212	alicej@email.com	5/12/2024	\$125.50
Bob Smith	Colorado Springs	CO	719-555-3434	bobsmith@email.com	4/28/2024	\$200.00
Carol Martinez	Pueblo	CO	719-555-8787	cmart@email.com	5/01/2024	\$98.75
David Lee	Aurora	CO	303-555-9090	dlee@email.com	5/15/2024	\$310.25
Ellen Davis	Scottsdale	AZ	602-555-2222	edavis@email.com	4/10/2024	\$175.00
Frank Wilson	Albuquerque	NM	505-555-1111	fwilson@email.com	3/30/2024	\$87.50
Grace Taylor	Denver	CO	303-555-4444	gtaylor@email.com	5/18/2024	\$450.00

EVERY SPREADSHEET IS A SIMPLE DATABASE

A	B	C	D	E
1	Name	City	State	Phone
2				
3				
4				
5				
6				
7				
	Row = Record	Column = Field	Cell = Data	

Rows = Records (One entry)
Columns = Fields (Type of information)
Cells = Data (Individual value)

EXCEL WORKBOOK vs. RELATIONAL DATABASE

Excel Workbook (Flat File)
Many worksheets, independent tables.

- Customers
- Products
- Invoices
- Expenses
- Sales
- Summary

Relational Database (Linked Tables)
Tables are related by common information.

```

graph TD
    Customers --- Orders
    Customers --- Payments
  
```

*Excel is perfect for simple lists and everyday projects.
When your data grows and relationships matter, it's time for a true relational database.*

Using Excel as a Simple Database

When a Spreadsheet Is All You Need

By Curtis Jerry Smothers

More Than Just a Spreadsheet

Most people think of Microsoft Excel as a program for balancing checkbooks, preparing budgets, or tracking investments. While it excels at all of those tasks, Excel can also serve another important purpose—it can function as a simple database.

Every spreadsheet is, at its heart, a table of information. Each row contains one record, each column contains one type of information (called a *field*), and each cell holds an individual piece of data. That's exactly how databases are organized. For many personal and small-business projects, that's all you'll ever need.

One Workbook, Many Worksheets

One feature that often surprises new Excel users is that a spreadsheet file isn't limited to a single table. An Excel file is actually called a **workbook**, and a workbook can contain dozens—even hundreds—of individual **worksheets**, each identified by a tab along the bottom of the window.

Think of a workbook as a three-ring binder. Each worksheet is one page inside that binder. A family might maintain separate worksheets for checking, savings, investments, household expenses, and annual budgets. A small business might organize worksheets for customers, inventory, invoices, payroll, and monthly sales—all within a single workbook.

Many experienced users even create a first worksheet that serves as a **switchboard** or **home page**, using hyperlinks or clearly labeled buttons that jump directly to the various worksheets. Large workbooks become much easier to navigate when organized this way.

Although a workbook may contain many worksheets, Excel is still not a true relational database. While formulas can reference cells on other worksheets and worksheets can share information with one another, Excel doesn't automatically maintain relationships between records the way Microsoft Access or FileMaker Pro does. Instead, think of a workbook as a collection of independent but related tables stored together in one convenient notebook. For many home, educational, and small-business projects, that's more than enough organization.

What Makes a Good Spreadsheet Database?

Imagine a customer list. Each **row** represents one customer record, while each **column** represents one field of information, such as:

- Customer Name
- Address
- City
- State
- ZIP Code
- Telephone Number
- Email Address
- Last Purchase

As long as every row represents one record and every column represents one field, you've created a simple but effective database inside Excel. The structure is identical to the table at the heart of every relational database.

Sorting Your Information

One of Excel's greatest strengths is its ability to reorganize information instantly. Need your customer list alphabetized? Sort by the Name column. Want everyone grouped by state? Sort by State. Need to see your highest sales first? Sort the Sales column in descending order. Excel can reorganize thousands of records in just a few seconds without changing the information itself.

Finding Exactly What You Need

Sorting is useful, but filtering is often even more powerful. Suppose your customer database contains 5,000 names, but today you only want to see customers who live in Colorado. Apply a

filter to the State column and select **Colorado**. Every other record temporarily disappears from view.

Nothing has been deleted. Excel is simply displaying the records that meet your selection criteria. The same technique works for dates, inventory items, invoice amounts, ZIP codes, product categories, or virtually any other type of information stored in your worksheet. Once you've mastered filtering, you'll wonder how you ever managed without it.

Preventing Data Entry Errors

A database is only as good as the information entered into it. Excel includes an excellent feature called **Data Validation** that helps prevent typing mistakes before they happen.

Suppose every customer belongs to one of four sales territories:

- North
- South
- East
- West

Instead of allowing someone to type anything they wish, Data Validation displays a convenient drop-down list. Users simply select one of the approved choices. No misspellings. No accidental abbreviations. No "North," "north," "Nth," and "N." all referring to the same territory. Cleaner data produces better reports, more accurate searches, and far less frustration.

Creating Drop-Down Lists

Creating a validation list is easier than many people realize. Simply prepare a list of approved entries somewhere in your workbook—or even on a separate worksheet—and use Excel's **Data Validation** command to connect that list to the desired column.

From that point forward, each cell in that column displays a convenient drop-down arrow, allowing users to select from the approved entries instead of typing them manually. It's one of the quickest and easiest ways to improve both speed and accuracy, particularly when several people enter data into the same workbook.

Knowing When It's Time for a Real Database

Excel is an outstanding tool for managing information, but every workbook eventually reaches its practical limits. The worksheets become larger, the records become more numerous, and duplicate information begins appearing in multiple places. Before long you're maintaining several worksheets that contain related information but require constant manual updating.

That's usually the signal that it's time to graduate to a true relational database such as Microsoft Access or FileMaker Pro. Those programs automatically maintain relationships among multiple

tables, greatly reducing duplicate data while making searches, reports, and updates far more efficient. They require more planning and setup than Excel, but for large collections of related information, the investment is well worth the effort.

An Ideal Solution for Everyday Projects

For address books, collections, inventories, grade books, club memberships, household budgets, expense logs, and countless other projects, Excel often provides the perfect balance between simplicity and capability. It combines the calculation power of a spreadsheet with many of the organizational features of a database, all without requiring users to master the complexities of relational database design.

For many people, Excel will always be the only database they'll ever need. And if the day comes when your workbook outgrows its humble beginnings, you'll already understand the basic concepts that make learning a true relational database much easier.