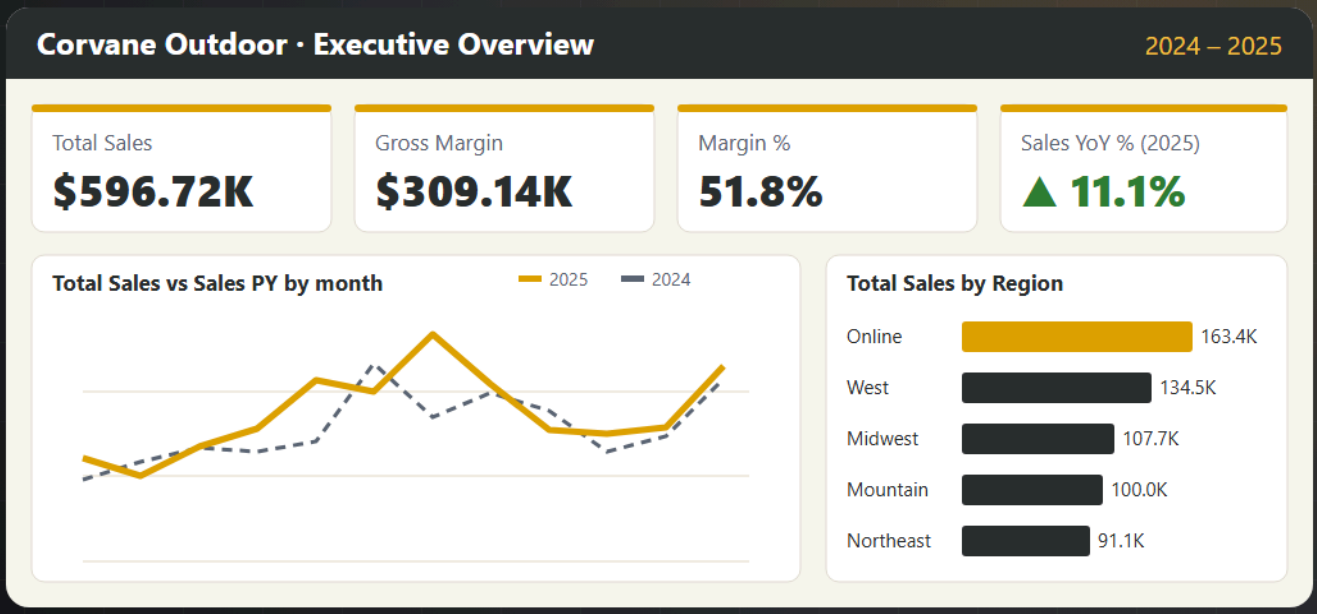
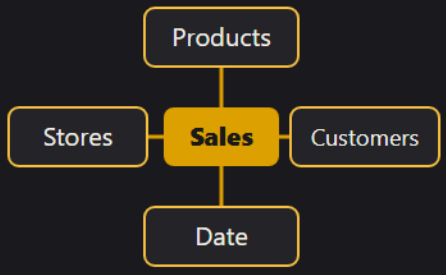



```
Sales YoY % =
VAR PY = [Sales PY]
RETURN
  DIVIDE([Total Sales] - PY, PY)
// 2025 vs 2024 → 11.1%
```



THE ANALYST'S PRACTICAL GUIDE

Power BI and DAX for Business Analysts

From raw data to insightful reports — Power Query, modeling, DAX, and design

Power Query · M · Star Schema · Relationships · DAX
CALCULATE · Time Intelligence · Visuals · RLS · Sharing

GET DATA · MODEL · MEASURE · VISUALIZE · SHARE

THENEXBOOKS

Power BI and DAX for Business Analysts

From Raw Data to Insightful Reports
Power Query, data modeling, DAX, report design, security, and sharing — built step by step on one real dataset

First Edition

THENEXBOOKS

Power BI and DAX for Business Analysts
From Raw Data to Insightful Reports

First Edition, 2026

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Corvane Outdoor, the retail chain used as the running example in this book, is fictional, as are its stores, products, customers, employees, orders, targets, and all sample data. The sample data is provided as a companion download. Email addresses use reserved example domains.

Preface

Most analysts spend more time preparing reports than thinking about what the numbers mean. Every month the same ritual repeats: export the sales data, paste it into the workbook, fix the columns that came out wrong, refresh a dozen PivotTables, copy the charts into a slide deck, and hope nobody asks a follow-up question that needs a different cut of the data. When someone does ask, the answer is "I'll get back to you."

Power BI changes that rhythm. You describe the cleaning steps once in Power Query, and they run again on every refresh. You connect your tables in a model once, and every chart can slice by any attribute. You write a measure such as *Sales Year-to-Date* once in DAX, and it works correctly in every card, table, and chart, for every region, product, and month. The result is a report that people explore on their own, that updates itself, and that you can trust because the logic lives in one place.

This book teaches Power BI and DAX the way business analysts actually use them. We do not tour the buttons. We take one realistic dataset from raw CSV files to a published, secured, interactive report, introducing each feature at the moment it solves a real problem, and explaining *why* it works, so you can build your own models with confidence.

Who This Book Is For

- **Business, financial, and sales analysts** who build recurring reports in Excel and want them to refresh, scale, and answer follow-up questions without rework.
- **Excel power users** who know PivotTables, lookups, and perhaps a little Power Query, and are ready for a real data model and a formula language designed for analysis.
- **Managers and team leads** who need to understand what makes a Power BI report trustworthy, fast, and secure before it is shared across the organization.
- **Database and SQL users** who want to turn their queries into interactive reports and learn how DAX thinks differently from SQL.

What You Will Learn

- How Power BI Desktop and the Power BI service fit together, and what the typical analyst workflow looks like from data to dashboard.
- How to get data from files, folders, and databases, and how to clean and reshape it with Power Query: types, trimming, merges, appends, unpivoting, folders of files, parameters, and the M language.
- How to design a star-schema data model with fact and dimension tables, the right relationships, cardinality, and filter direction, and a proper date table.

- How DAX really works: calculated columns versus measures, row context and filter context, CALCULATE, context transition, iterators, and variables.
- How to answer business questions with DAX: year-to-date, prior year, growth, rolling periods, rankings, top N, share of total, targets, and what-if parameters.
- How to design clear, accessible report pages and make them interactive with slicers, drill-down, drill-through, tooltips, bookmarks, and navigation buttons.
- How to secure, tune, publish, share, and refresh your work: row-level security, Performance Analyzer, workspaces and apps, gateways, deployment pipelines, and an overview of Microsoft Fabric and paginated reports.

How This Book Is Organized

Part I — Getting Started and Getting Data (Chapters 1–5) introduces Power BI, builds a first report in one sitting, and covers connecting to data and shaping it with Power Query. **Part II — Data Modeling** (Chapters 6–10) builds a star schema with relationships, a date table, a polished model, and patterns for multiple fact tables and role-playing dates. **Part III — DAX Fundamentals** (Chapters 11–15) teaches measures, evaluation context, CALCULATE, iterators, context transition, and readable DAX. **Part IV — DAX for Business Questions** (Chapters 16–19) applies DAX to time intelligence, ranking, advanced filtering, and dynamic what-if reports. **Part V — Visuals and Report Design** (Chapters 20–23) covers choosing visuals, page design and themes, interactivity, and guided navigation. **Part VI — Sharing, Security, and Production** (Chapters 24–28) covers row-level security, performance, publishing and refresh, deployment pipelines, Fabric, and paginated reports, and ends with a capstone dashboard. The appendices provide a cheat sheet, templates and reference tables, a production checklist, and a glossary.

Each chapter ends with exercises and a **Key Takeaways** box for quick review.

The Running Example: Corvane Outdoor

Throughout the book we work as analysts for **Corvane Outdoor**, a fictional outdoor-gear retailer with eight stores in four US regions — West, Mountain, Midwest, and Northeast — plus an online store. Corvane sells camping, hiking, climbing, apparel, and water-sports gear. The analytics team has been given two years of order history from the Corvane Rewards loyalty program (January 2024 to December 2025): just under 5,000 order lines, 30 products, 9 stores, 600 customers, and a set of monthly sales targets for 2025. Jordan Ellis, the Head of Retail Analytics, wants a report that shows how the business is doing, where it is growing, and which products and stores need attention.

We start with raw CSV files — some of them messy on purpose — and finish with the **Corvane Sales** report: a clean star-schema model, a library of tested DAX measures, five report pages with drill-through and tooltips, row-level security for regional managers, and a published app. The sample files come as a companion download, `CorvaneBI-sample-data.zip`, available with this book on the purchase page; Chapter 1 shows where to extract it. Because the data is fixed, every number printed in these pages is exactly what you will see when you load the same files.

Versions and Conventions

Examples target **recent monthly releases of Power BI Desktop** and the **Power BI service**. Power BI Desktop runs on **Windows** only. Because Microsoft ships updates every month, ribbon labels, pane names, and the location of some commands may differ slightly from the descriptions here; if a command is not exactly where the book says, look nearby or use the search box at the top of the window. Features that were in preview at the time of writing are labeled as preview. Licensing for sharing and some service features depends on your organization's plan; the book explains the concepts and points you to Microsoft's current licensing information rather than quoting prices or limits, which change over time.

> **TIP**
>
> A recommended practice or a technique that makes your work easier.

> **NOTE**
>
> Background information, version differences, or a useful aside.

> **WARNING**
>
> A common mistake or something that can produce wrong numbers, slow reports, or expose data.

Ribbon commands are written in bold with arrows, such as **Modeling > New measure**. DAX, M, and JSON appear in `monospace`; long lines are wrapped to fit the page. Tables and columns are written as `Sales[SalesAmount]`, measures as `[Total Sales]`, and the date table always as `'Date'`. Money is shown in US dollars, for example `$596,717.65`, and percentages with one decimal place.

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PART I

Getting Started and Getting Data

What Power BI is and how analysts use it, a complete first report in one sitting, connecting to files, folders, and databases, and turning messy source data into clean, typed tables with Power Query and the M language.

1 · Power BI for Analysts
2 · Your First Report
3 · Getting Data
4 · Power Query Essentials
5 · Power Query in Depth

CHAPTER 1 · PART I — GETTING STARTED AND GETTING DATA

Power BI for Analysts: Desktop, Service, and the Report Workflow

Before we click a single button, we need a map. This chapter explains what Power BI actually is, how it relates to the Excel skills you already have, how a report travels from raw files to a shared app, and where everything lives in the Power BI Desktop window. You will also meet Corvane Outdoor, the company whose data we will turn into a complete sales report over the rest of the book.

What Power BI Is (and What It Is Not)

"Power BI" is not one program. It is a family of tools from Microsoft that work together to get data from somewhere, shape it, model it, calculate business metrics over it, display those metrics in interactive visuals, and share the result with other people. When someone at work says "send me the Power BI," they might mean a file on your laptop, a report in a web browser, or an app on their phone. Knowing which piece does what saves a lot of confusion later.

Component	Where it runs	What you use it for
Power BI Desktop	Windows PC (free)	Building: get data, Power Query, model, DAX, report pages. Saves `.pbix` files.
Power BI service	Browser (app.powerbi.com)	Publishing, sharing, apps, dashboards, scheduled refresh, security assignments.
Power BI Mobile	iOS and Android apps	Viewing reports and dashboards on a phone or tablet.
Power BI Report Builder	Windows PC (free)	Designing paginated (print-style, pixel-perfect) reports, saved as `.rdl`.
Power BI Report Server	Your own servers (on-premises)	Hosting reports inside the company network instead of the cloud.

As an analyst, you will spend most of your time in **Power BI Desktop**. It is where the real work happens: connecting to files and databases, cleaning data, defining relationships between tables, writing measures, and laying out report pages. The **Power BI service** is where finished work goes to be consumed. Your colleagues will rarely open Desktop; they will open a link in a browser, a tab in Microsoft Teams, or the mobile app.

If your company uses Power BI Report Server, note that it needs its own edition of Desktop ("optimized for Report Server"), released on a different schedule; install the edition your administrator specifies. We will not use Report Server in this book.

From Excel to Power BI: What Carries Over

If you have built a PivotTable, you already understand more Power BI than you think. A PivotTable takes a list of rows, groups them by the fields you drop in the Rows and Columns areas, and aggregates a value field. A Power BI matrix visual does exactly the same thing. Slicers in Excel and slicers in Power BI filter in the same way. Even Power Query is shared: the editor you may have opened from Excel's **Data > Get Data** menu is the same engine, with the same M language underneath, that Power BI uses.

The differences are about scale, structure, and reuse:

In Excel you...	In Power BI you...
Keep data in worksheets, often one big flat table	Keep data in a model of several related tables (a star schema, Chapter 6)
Use VLOOKUP or XLOOKUP to bring columns together	Create relationships once, and filters flow across them automatically (Chapter 7)
Write cell formulas that point at cells	Write DAX measures that point at tables and columns (Part III)
Define a PivotTable value field per PivotTable	Define a measure once and reuse it in every visual
Refresh by reopening or pasting new data	Refresh the semantic model, by hand or on a schedule
Share a workbook as an attachment	Publish once and share a link, an app, or a Teams tab

The most important bridge is the idea of a **measure**. *A measure is like a PivotTable value field that you define once.* In Excel, if you want "Sum of Sales" in three PivotTables, you set it up three times, and if you want margin percentage you probably add a calculated field or a helper column. In Power BI you write `Total Sales` once, give it a currency format, and from then on every chart, card, table, and matrix can use it. When a visual groups by region, the measure calculates per region. When a slicer selects 2025, the measure calculates for 2025. You never copy the formula down a column. This idea is so central that Part III is devoted to it.

> **TIP**
>
> Keep your Excel instincts for *checking* numbers. Throughout the book we show the exact results you should see, and a quick PivotTable over the same CSV file is a perfectly good way to confirm that your Power BI total is right. Analysts who reconcile against a second method catch mistakes early.

The Analyst Workflow: From Raw Data to a Shared Report

Every Power BI project, from a one-page sales summary to a company-wide finance model, follows the same path. The tools change at each stage, but the sequence stays the same, and the rest of this book is organized around it.

The Power BI report workflow

```
1. GET DATA        CSV, Excel, folders, databases, web, SharePoint
      |
2. TRANSFORM       Power Query: clean, reshape, combine        (Ch 3-5)
      |
3. MODEL           tables, relationships, date table, polish   (Ch 6-10)
      |
4. MEASURES        DAX: totals, ratios, time intelligence      (Ch 11-19)
      |
5. VISUALIZE       pages, visuals, interactivity, design       (Ch 20-23)
      |
6. PUBLISH         workspace in the Power BI service           (Ch 24-27)
      |
7. SHARE/REFRESH   apps, links, security, scheduled refresh    (Ch 24-28)
```

Get data. Power BI connects to hundreds of sources through *connectors*. In this book we mostly use CSV files because everybody can open them, but the same steps apply to Excel workbooks, SQL Server databases, SharePoint folders, and many cloud services.

Transform. Raw data is rarely ready. Column names have spaces, numbers arrive as text, categories are spelled three different ways, and months are spread across columns. Power Query records each cleaning step so that the next refresh repeats them automatically. You fix the problem once instead of every month.

Model. A model is a set of tables plus the relationships between them. A good model is what makes a report fast, correct, and easy to extend. Many disappointing Power BI reports have perfectly good visuals sitting on top of a poorly designed model.

Measures. DAX (Data Analysis Expressions) is the formula language for measures, calculated columns, and calculated tables. It looks like Excel formulas but behaves differently because it works on whole columns and responds to filters. Measures turn a model into answers: total sales, margin percentage, year-over-year growth, rank, share of total.

Visualize. Report pages hold visuals: cards, bar charts, line charts, tables, matrices, maps, slicers. Visuals talk to each other, so clicking a bar filters the rest of the page. Design matters here, because a report is a product that other people use.

Publish. From Desktop you publish the file to a workspace in the Power BI service. Publishing creates two items: a **semantic model** (the data, relationships, and measures) and a **report** (the pages and visuals that use it).

Share and refresh. Finally, you decide who can see what. You might share a link, package several reports into an app, restrict each regional manager to their own region with row-level security, and schedule a refresh so the numbers stay current without you opening Desktop every morning.

Vocabulary You Will Hear Every Day

Power BI has a handful of terms that sound similar but mean different things. Getting them straight now avoids confusion when we reach publishing in Part VI.

Term	Meaning
Semantic model	The tables, relationships, measures, and security roles. In the service it is a separate item that reports connect to. Microsoft called this a *dataset* until 2023; you will still see the old word in older articles and videos. In this book we always say semantic model.
Report	One or more pages of interactive visuals built on a semantic model. Created in Desktop (or in the service).
Dashboard	A single canvas of *tiles* pinned from one or more reports. Dashboards exist only in the Power BI service; Desktop has no dashboards.
Workspace	A container in the service for semantic models, reports, dashboards, and other items, shared by a team. Everyone also has a private "My workspace."
App	A packaged, read-only bundle of content from a workspace, distributed to a wider audience.
Dataflow	Power Query running in the service, producing reusable cleaned tables for many semantic models.

> **NOTE**
>
> The single `.pbix` file you save from Desktop contains both the semantic model and the report. Only when you publish does the service split them into two items. Later in the book we will also see how several reports can share one published semantic model.

Installing Power BI Desktop

Power BI Desktop is free to download and use. You do not need a license to build reports on your own machine; licenses come into play when you publish and share, which we discuss in a moment.

Desktop is a **Windows-only** application. There is no Mac version. If you work on a Mac, the practical options are a Windows virtual machine on the Mac, a Windows PC, or a remote Windows desktop provided by your company. The Power BI service runs in any modern browser on any operating system, so Mac users can view, share, and even lightly edit published reports in the browser, but the modeling and DAX work in this book needs Desktop.

There are two ways to install it:

- **Microsoft Store.** Search for Power BI Desktop in the Store app. This is the option Microsoft generally recommends for individuals, because the Store keeps it updated automatically.
- **Direct download.** Microsoft also offers a standalone installer from its download site. You (or your IT department) must install each new version yourself. Companies that control software versions centrally often prefer this.

Power BI Desktop receives a new release roughly every month. Each release adds features, fixes problems, and sometimes rearranges the ribbon. That pace is wonderful for users and awkward for books. When we describe a menu, we use the paths from recent versions of Power BI Desktop; *ribbon labels and pane names can differ slightly between monthly releases*. If you cannot find a command exactly where we say, look on a neighboring ribbon tab or use the search box at the top of the window, which finds commands by name.

> **WARNING**
>
> Files saved in a newer version of Desktop may not open in an older one, and colleagues on an older installation can see an error asking them to update. Before you share a `.pbix` file with a teammate, make sure you are both reasonably up to date. Publishing to the service avoids this problem for viewers, because the service always runs the current version.

Licensing in One Page

Licensing is the part of Power BI that changes most often, so we keep this short and general, and we never quote prices. Check Microsoft's current licensing page before you make decisions for your organization.

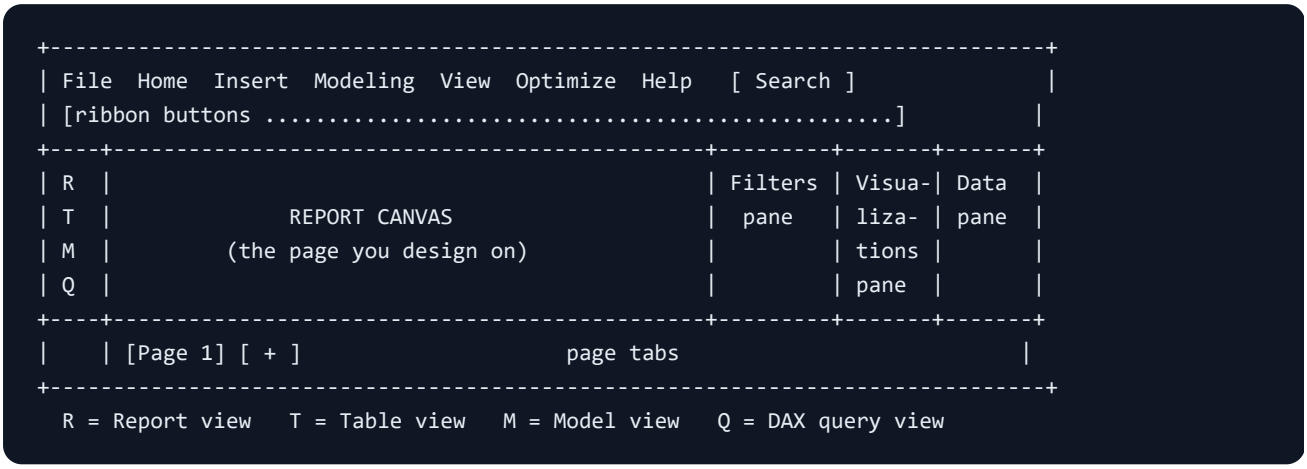
- **Free.** Lets you use Desktop and work in your own My workspace in the service. It is fine for learning and personal analysis.
- **Pro.** The standard per-user license for publishing to shared workspaces and sharing content with other people.
- **Premium Per User (PPU).** A per-user license that adds capabilities which otherwise need a capacity.
- **Capacity.** The organization buys dedicated compute. Microsoft has been moving Power BI Premium capacity customers to Microsoft Fabric capacities (the "F" SKUs). Content in a suitable capacity can, depending on the configuration, be viewed by users with free licenses.

The rule of thumb we will repeat in Part VI: sharing and collaboration generally require a Pro or PPU license for both the publisher and the viewers, unless the content lives in a capacity that allows free users to view it. Licensing changes, so check Microsoft's current licensing page. For everything in Parts I to V of this book, the free Desktop application is all you need.

A Tour of the Power BI Desktop Window

Open Power BI Desktop. Depending on your version, you will see a start screen with options such as a blank report, recent files, and sample content. Choose **Blank report**. The window you see now is where we spend most of the book, so let's name every part of it.

Power BI Desktop — main window (simplified sketch)



The ribbon

Across the top is the ribbon, organized in tabs much like Excel. **Home** holds the commands you use most: **Get data**, **Transform data** (which opens the Power Query Editor), **Refresh**, and **Publish**. **Insert** adds visuals, text boxes, shapes, and buttons. **Modeling** holds **New measure**, **New column**, **New table**, **Manage roles**, and **View as**. **View** controls themes, page view, and panes such as Bookmarks and Selection. In recent versions, **Optimize** holds the Performance analyzer. Additional context tabs appear when something is selected: select a table in the Data pane and **Table tools** appears; select a column and **Column tools** appears; select a measure and **Measure tools** appears.

The views on the left edge

A narrow strip of icons on the left switches between views. Each view looks at the same file from a different angle:

View	What it shows	When we use it
Report view	The canvas with report pages and visuals	Building and testing visuals
Table view	The rows of each loaded table, like a read-only worksheet	Checking data and calculated columns
Model view	Tables as boxes with relationship lines	Relationships, properties, folders
DAX query view	An editor for running DAX queries with `EVALUATE`	Testing measures and debugging (Chapter 15)

TMDL view	The model as a scripting language text	Advanced edits (preview at the time of writing)

Table view was called Data view in older versions, and you may still see that name in older tutorials. DAX query view is available in recent versions; if you do not see it, your Desktop is out of date. TMDL view appears only in recent versions and was a preview feature at the time of writing, so you may need to enable it under preview features. We will not depend on it.

The panes on the right

In Report view, the right side holds the panes you use to build visuals:

- **Data pane** (called the Fields pane in older versions) lists every table in the model, with its columns and measures. You drag fields from here onto visuals.
- **Visualizations pane** has a gallery of visual types at the top and, below, the *field wells* for the selected visual: areas such as X-axis, Y-axis, Legend, Values, Rows, and Columns. Switch it to the **Format** pane (the paintbrush icon) to change colors, titles, labels, and borders.
- **Filters pane** shows filters on the selected visual, on the current page, and on all pages.

Options Worth Knowing Before You Start

Open **File > Options and settings > Options**. The dialog has two groups of pages on the left: **Global** settings apply to every file you open on this machine, while **Current File** settings are saved inside the `.pbix` you have open. That distinction matters, because a setting you change for one file does not follow you to the next.

Auto date/time

The setting we care about most is **Auto date/time**. When it is on, Power BI quietly creates a hidden date table behind every date column in your model, so that you can drag a date field onto a visual and get an automatic Year > Quarter > Month > Day hierarchy. That sounds helpful, and for a tiny one-off file it is. For a real model it has costs: one hidden table per date column makes the file larger, the hidden tables cannot be customized (no fiscal years, no custom month names), and they do not work together across fact tables. The professional approach is a single proper date table, which we build and mark in Chapter 8.

You find the setting in two places:

Setting	Location
For the open file	Current File > Data Load > Time intelligence > Auto date/time
For new files	Global > Data Load > Time intelligence > Auto date/time for new files

Here is our plan. In Chapter 2 we build a quick throwaway report *with* Auto date/time still on, so that you see what it does and can recognize it in other people's files. At the start of Chapter 3, when we create the real `Corvane Sales.pbix`, we turn it off for that file and for new files. Do not change it yet.

Regional settings

Under **Current File > Regional Settings** you can see the locale used for importing. Our sample files use US formats: ISO dates such as `2024-01-01` and a period as the decimal separator. If your Windows regional settings use a comma for decimals, Chapter 3 shows exactly how to import the files safely.

Meet Corvane Outdoor

Learning Power BI with random sample data is like learning to cook by reading ingredient lists. Instead, we follow one realistic project from start to finish. Our company is **Corvane Outdoor**, a fictional retailer of outdoor gear founded in 2016 in Seattle. Corvane sells camping, hiking, climbing, apparel, and water-sports products through eight physical stores in four US regions, plus an online store.

Region	Stores
West	Seattle Flagship (Seattle, WA), Portland Pearl (Portland, OR)
Mountain	Denver Union (Denver, CO), Salt Lake Gateway (Salt Lake City, UT)
Midwest	Chicago Loop (Chicago, IL), Minneapolis North Loop (Minneapolis, MN)
Northeast	Boston Back Bay (Boston, MA), Burlington Church St (Burlington, VT)
Online	Corvane Online (run from Seattle, WA)

Salt Lake Gateway is the newest store; it opened on June 1, 2024. Keep that in mind, because comparing its 2025 sales with 2024 will look spectacular for reasons that have nothing to do with performance. Spotting that kind of trap is part of an analyst's job, and we will come back to it.

The people

Three people appear throughout the book:

- **Jordan Ellis**, Head of Retail Analytics, is our stakeholder. Jordan asked for the report.
- **Sam Okafor** is the business analyst who builds it. That is your role; when an exercise says "you," think of yourself as Sam.
- **Dana Whitfield**, the CFO, wants a one-page Executive Overview she can read in a minute.

Later, five regional managers join the story when we restrict each of them to their own region with row-level security in Chapter 24.

The request

Here is the message from Jordan that starts the project:

E-mail from Jordan Ellis to Sam Okafor

```
Subject: Sales report for Corvane Rewards members

Hi Sam,

We finally have two full years (2024 and 2025) of order history for our
Corvane Rewards members. I'd like a Power BI report that answers:

  - How much did we sell, and at what margin, by year, region, and store?
  - Which categories and products are growing, and which are fading?
  - How are we doing against the 2025 store targets?
  - Who are our best customers, and how do loyalty tiers compare?

Dana wants a one-page executive view. Regional managers should only see
their own region. It needs to refresh without anyone re-pasting data.

Thanks,
Jordan
```

Notice what this request contains: business questions, an audience with different needs, a security requirement, and an operational requirement (refresh). A good Power BI project starts by writing those down, because each one maps to a stage of the workflow. The business questions drive the measures, the audiences drive the page design and apps, the security requirement drives row-level security, and the refresh requirement drives where the data lives and whether a gateway is needed.

The data

The analytics team has been given the order history of **Corvane Rewards** members, the loyalty program. It does not include every sale Corvane ever made, only the orders of members, which is why the totals are modest for a nine-location chain: a little under $600,000 over two years. The data arrives as seven CSV files, already exported from Corvane's systems.

File	Rows	What one row represents
Sales.csv	4,961	One order line (one product on one order)
Products.csv	30	One product, with category, list price, and cost
Stores.csv	9	One store, including the online store
Customers.csv	600	One Rewards member, with loyalty tier
Date.csv	731	One calendar day, 2024-01-01 to 2025-12-31

Targets.csv	108	One store's sales target for one month of 2025
RegionManagers.csv	5	One regional manager and their e-mail

There are also a few deliberately messy "raw" files: a product export with junk lines and inconsistent spelling, a wide target sheet with one column per month, and the sales history split into one file per year. We use those in Chapters 4 and 5 to practice Power Query on the kind of data you actually receive at work.

By the end of the book, your report will show, among many other things, total sales of **$596,717.65**, a gross margin of **51.8%**, and **3,106** orders across the two years. We give expected numbers like these throughout, so you always know whether your work is right.

Getting the Sample Files onto Your PC

The sample data comes as a companion download, `CorvaneBI-sample-data.zip`, delivered with this book on the purchase page. Every chapter assumes the files live in one fixed place on your computer, so please extract them exactly as described.

1. Download `CorvaneBI-sample-data.zip` and save it, for example, in your Downloads folder.
2. In File Explorer, right-click the zip file and choose **Extract All**.
3. In the destination box, replace the suggested path with `C:\` and click **Extract**. The zip contains a top-level folder named `CorvaneBI`, so the files land in `C:\CorvaneBI`.
4. Open `C:\CorvaneBI` and check that the structure below is there.

Folder structure after extracting

```
C:\CorvaneBI\
    data\
        Customers.csv
        Date.csv
        Products.csv
        RegionManagers.csv
        Sales.csv
        Stores.csv
        Targets.csv
    raw\
        products_export.csv
        targets_2025_wide.csv
        sales-by-year\
            Sales-2024.csv
            Sales-2025.csv
```

If you cannot write to `C:\` on a work computer, extract the folder somewhere else, such as `D:\CorvaneBI` or a folder inside Documents, and substitute your path wherever the book says `C:\CorvaneBI`. In Chapter 5 we create a Power Query parameter named `DataFolder` that holds this

path in a single place, so moving the files later is a one-line change. Until then, chapters use full paths.

> **TIP**
>
> Open `Sales.csv` in Notepad (not Excel) and look at the first few lines. Excel reformats dates and numbers as it opens a CSV, which hides exactly the details Power Query cares about. Notepad shows you the raw text: a header row of column names, commas between values, ISO dates, and periods as decimal separators.

`C:\CorvaneBI\data\Sales.csv (first three lines, as text)`

```
OrderLineID,OrderNumber,OrderDate,ShipDate,CustomerKey,ProductKey,StoreKey,Quantity,
UnitPrice,DiscountPct,NetPrice,SalesAmount,UnitCost,CostAmount
1,SO-100001,2024-01-01,2024-01-01,129,13,3,2,89.00,0.15,75.65,151.30,39.00,78.00
2,SO-100001,2024-01-01,2024-01-01,129,29,3,1,599.00,0.15,509.15,509.15,341.00,341.00
```

(We wrapped the header line here to fit the page; in the file it is one line.) Each line is an order line. The first line is a Rewards member (customer 129) buying two units of product 13 at the Denver Union store (store 3) with a 15% discount: list price $89.00, net price $75.65, sales amount $151.30, cost $78.00. Every sales amount in the file follows the same arithmetic, which means every number in this book can be checked by hand if you ever doubt it.

What We Will Build, Part by Part

The book is organized in six parts that follow the workflow. Each chapter builds on the previous one, so if you are new to Power BI, read in order.

Part	Chapters	What you will have at the end
I — Getting Started and Getting Data	1–5	A quick first report, then `Corvane Sales.pbix` with clean data from CSVs, folders, and messy exports
II — Data Modeling	6–10	A star-schema model with relationships, a marked date table, and polished fields
III — DAX Fundamentals	11–15	Base measures in a dedicated measure table, and a solid grasp of evaluation context and CALCULATE
IV — DAX for Business Questions	16–19	Time intelligence, ranking, targets, and what-if analysis
V — Visuals and Report Design	20–23	A themed, interactive, multi-page report with drill-through, tooltips, and bookmarks
VI — Sharing, Security, and Production	24–28	Row-level security, performance tuning, a published app, and the finished capstone