

Hands-On Walkthrough 2

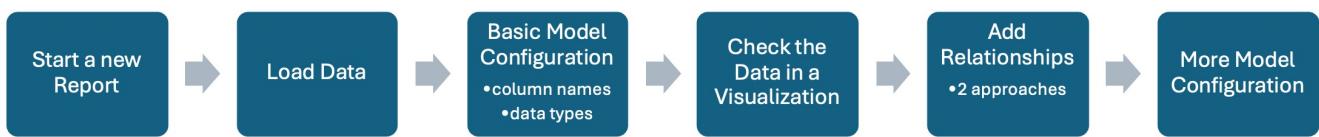
Building a Model

Chapter 1. Demo Data

The data to be used for this walkthrough is found in the Demo data folder.

File	Table Type	Purpose
book.csv	Dimension	Basic book information
author.csv	Dimension	Authors of books
edition.csv	Dimension	One book, many ISBNs
calendar.csv	Dimension	Standard calendar table
rating.csv	Dimension	Reviewer ratings and comments
Q1_sales.csv	Fact	Transactional sales data by ISBN, by order

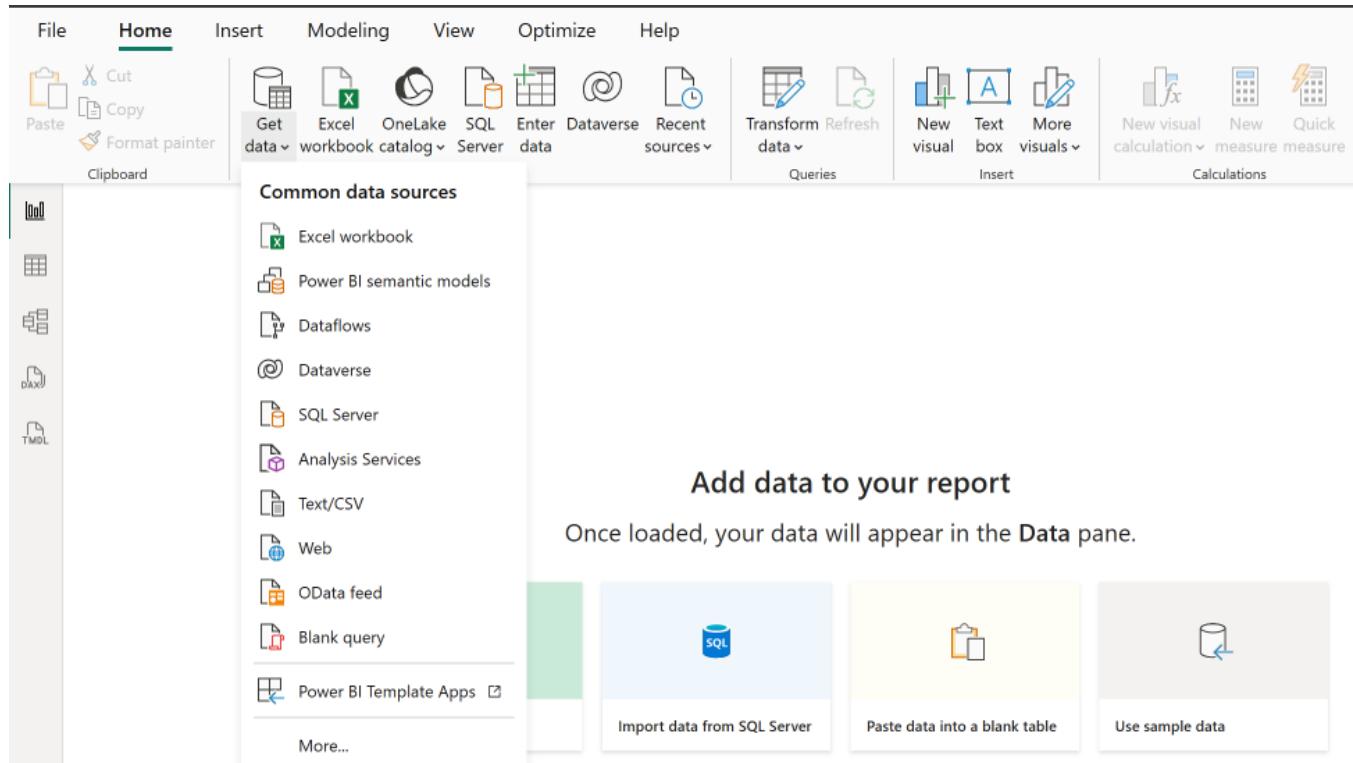
Chapter 2. Process



Chapter 3. Start a New Report

1. Start Power BI

2. Select **Blank Report**



Chapter 4. Load Demo Data

1. Select **Get data** (from the Home ribbon).
2. Select **Text/CSV** from the dropdown list.
3. Navigate to the **Demo data** folder.
4. Import and load each of the .csv files needed.

NOTE

Because they are csv files, they will need to be selected and loaded one at a time.

- a. book.csv
 - b. author.csv
 - c. rating.csv
 - d. edition.csv
 - e. calendar.csv
 - f. Q1_sales.csv
5. In the folder containing the data, highlight the required .csv then press **Open**.

NOTE

The system may take a minute to 'connect' to the data.

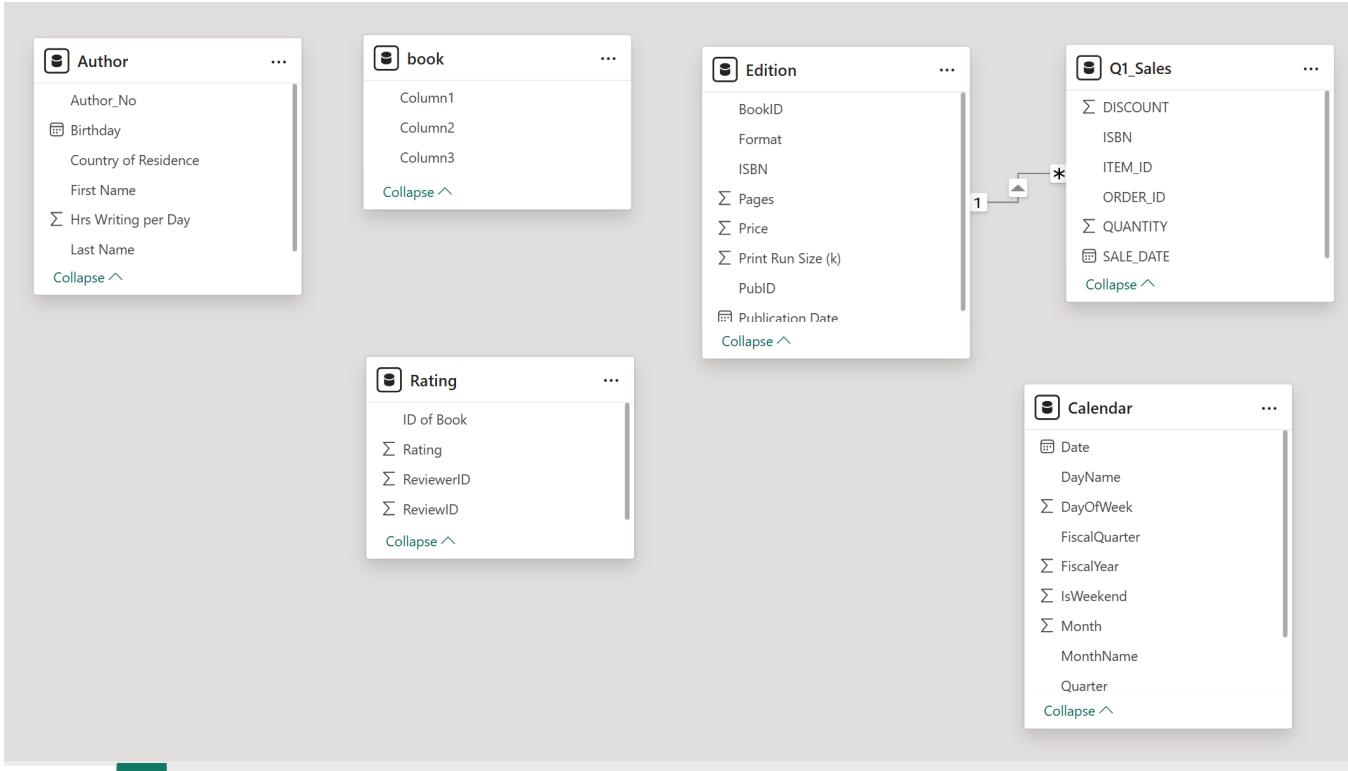
6. Press **Load** at the bottom of the **Navigator** window.

NOTE

The system may take a minute to 'load' the data.

7. On the right-hand side of the Power BI window, in the **Data** panel is the data available for reports.
8. Save the report as **Book Model Configured**.

The Demo model at the end of this step.



Chapter 5. Basic Configurations: Fix 'book' Column Names

1. Switch to **Table view** (left rail) to see the data in the table.
2. In the **Table view Data** pane, click on **book**.
 - a. The display will change to the data in the book csv.
3. Expand **book**.
4. RMB on column1. Select **Rename** and change the name to bookid.
5. RMB on column2. Select **Rename** and change the name to title.
6. RMB on column3. Select **Rename** and change the name to authid.

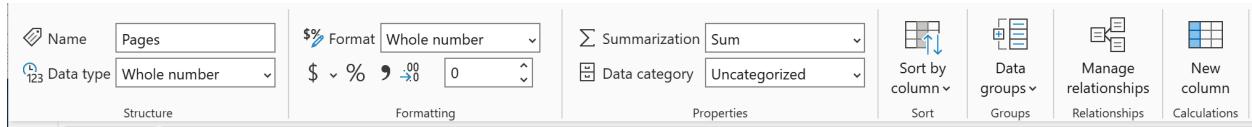
Chapter 6. Basic Configurations: Change Data Types and Behaviors

1. Use **Table view**.

2. Navigate through each table and decide if any numeric columns need to be defined as text.

3. To change the data type:

a. Highlight (click on) a column name. This will cause the **Column tools** to appear.



4. In **Calendar** change the following to **text**:

- DayofWeek
- IsWeekend
- Month
- Week

5. In **Calendar** leave the following as Whole number but change to **Don't Summarize**:

- FiscalYear
- Year

6. In **Edition**:

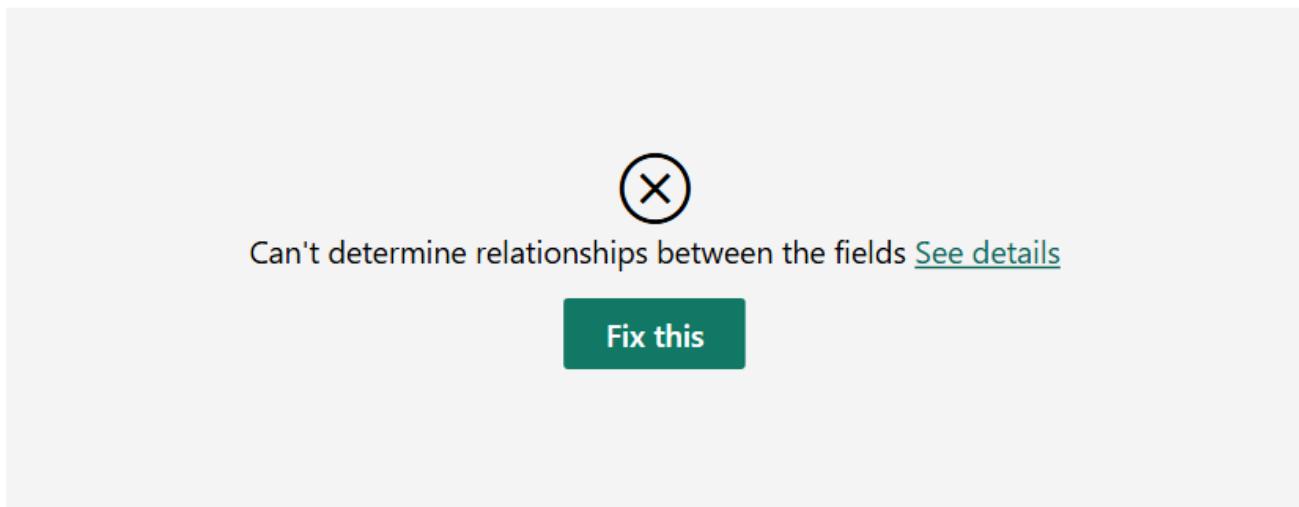
- Price** to use Average
- Print Run Size (k)** to use Average

7. In **Rating**:

- Rating** to use Average
- ReviewerId** is text
- ReviewId** is text

Chapter 7. Check the Data

1. In **Report view**, open the **Data** pane, right-click empty space, and choose **Expand All**.
2. Build table visual:
 - a. From **Book**, check **authid**, **bookid** and **title**.
3. Build a second table visual:
 - a. From **Author**, check **Author_No**, **LastName** ***Hrs Writing per Day**.
4. Build a third table visual:
 - a. From **Author**, check **Author_No**.
 - b. From **Book**, check **bookid**.



Chapter 8. Add Relationships

1. Switch to **Model view** (left rail).
2. One relationship is already in place. Power BI created it based on column name matching.

Edit relationship



Select tables and columns that are related.

From table

Q1_Sales



DISCOUNT	ISBN	ITEM_ID	ORDER_ID	QUANTITY	SALE_DATE
null	989-28-79-13...	107020-12-8...	107020-29	90	Monday, Janu...
null	989-28-79-13...	107020-43-9...	107020-31	91	Monday, Janu...
null	989-28-79-13...	107020-38-9...	107020-40	14	Monday, Janu...

To table

Edition



BookID	Format	ISBN	Pages	Price	Print Run Size...	PubID
TT359	Hardcover	989-28-79-70...	277	27.99	15	ESP
NP937	Hardcover	989-28-654-6...	394	30.99	6	PP
PA169	Hardcover	989-28-79-52...	384	27.99	10	PP

Cardinality

Many to one (*:1)

Cross-filter direction

Single



Make this relationship active

Apply security filter in both directions

Assume referential integrity

Save

Cancel

3. Select **Home □ Manage Relationships**.

4. Choose **+ New relationship**.

5. Configure **From table** = **book** and **To table** = **Author**.
 6. Click on authid in both tables to indicate the column to use in the relationship. Confirm:
 - a. **Columns:** authid □ **AuthID** (matched by name/type).
 - b. **Cardinality:** **Many to One (:1)*** (Book has one author, author has many books).
 - c. **Cross filter direction:** **Single** (filters flow one-way from Product to Sales).
 - d. **Make this relationship active:** **Checked**.
 7. **Save**, then **Close**. In the diagram, a connector line appears:
 - a. **1** and ***** indicate cardinality.
 - b. Arrowhead indicates filter direction.
 - c. Solid line = active; dotted = inactive.
-

← New relationship

X

Select tables and columns that are related.

From table

Author

Author_No	Birthday	Country of Re...	First Name	Hrs Writing p...	Last Name
AS443	Monday, July ...	Norway	Abraham	6	Stackhouse
AW980	Tuesday, Mar...	New Zealand	Amelia	16	Wangerin, Jr.
AI923	Monday, Mar...	New Zealand	Anastasia	11	Inez

To table

book

authid	bookid	title
AuthID	BookID	Title
AM329	BB194	Ballinby Boys
AS443	NC652	Nothing But ...

Cardinality

One to many (1:*)

Cross-filter direction

Single

Make this relationship active

Apply security filter in both directions

Assume referential integrity

Save

Cancel

8. Return to **Report view** and verify that book and author data can be displayed together.

Chapter 9. Create Additional Relationships (Drag-and-Drop)

1. In Model view,
 - a. Drag **Book.bookid** onto **Rating.ID of Book** and Save.
 - b. Drag **Book.bookid** onto **Edition.bookid** and Save.
 - c. Drag **Calendar.Date** onto **Q1_Sales** and Save.
2. The model should now have 5 relationships.
3. Save the file.

Chapter 10. Cross Filters

Model-level cross filtering controls which tables pass filter context to which other tables through relationships. That choice—Single vs Both—changes what rows are “visible” to your measures and visuals at query time.

10.1. Example

- Edition has 95 rows and 95 distinct ISBNs.
- Q1_Sales has 7,785 rows and 93 distinct ISBNs.
- All sales rows match an Edition ISBN; 2 Edition ISBNs have no sales: 989-28-79-56856-6, 989-28-79-96705-5.
- Edition → Q1_Sales is a Single (one-way) cross filter (dimension → fact) in your description.
 1. Create a measure to count the rows in the **Edition** table.
 - a. Click on **Edition**.
 - b. Click on **New Measure** in the menu ribbon.
 - c. Add this to the formula bar - Total Rows = COUNTROWS(Edition)
 2. Create a measure to count the rows in the **Q1_Sales** table.
 - a. Click on **Q1_Sales**.
 - b. Click on **New Measure** in the menu ribbon.
 - c. Add this to the formula bar - Total Rows Sales = COUNTROWS(Q1_Sales)
 3. Switch to **Report view**.
 4. Add a **Multi-row** card.
 5. Add **Total Rows Edition** and **Total Rows Sales** to the card.

95	7785
Total Rows Edition	Total Rows Sales

6. Add a slicer using **Edition.ISBN**. Include a 'Select All'.
 - a. Test the behavior when making different slicer selections.

3	Total Rows Edition	335
		Total Rows Sales

ISBN

- Select all
- 989-28-229-0197-6
- 989-28-229-1404-4
- 989-28-229-3157-7
- 989-28-229-5891-8
- 989-28-229-6632-6
- 989-28-229-7592-2
- 989-28-229-9769-6
- 989-28-3705-007-2

7. Remove the 'Edition-based' slicer.
8. Add a slicer using **Q1_Sales.ISBN**. Include a 'Select All'.
- a. Test the behavior when making different slicer selections.

95		335
Total Rows Edition		Total Rows Sales

ISBN

- Select all
- 989-28-229-0197-6
- 989-28-229-1404-4
- 989-28-229-3157-7
- 989-28-229-5891-8
- 989-28-229-6632-6
- 989-28-229-7592-2

IMPORTANT The filter is not being applied to the Edition table.

- What to do?
 - Change the filter to go in both directions. Generally not recommended. **Both** should be used sparingly.
 - Many-to-many bridges.
 - Fact-to-fact filtering via a shared dimension.
 - Targeted models where you need slicers/measures on one side to trim the other side.
 - Hide the **Q1_Sales.ISBN** column so that the process is more controlled and more likely to provide consistent results.

Chapter 11. Bulk Update Properties

1. Hide:
 - a. **book.authid.**
 - b. **Rating.ID of Book.**
 - c. **Edition.BookID.**
 - d. **Q1_Sales.ISBN.**
2. The work on the model is now complete. Save the report