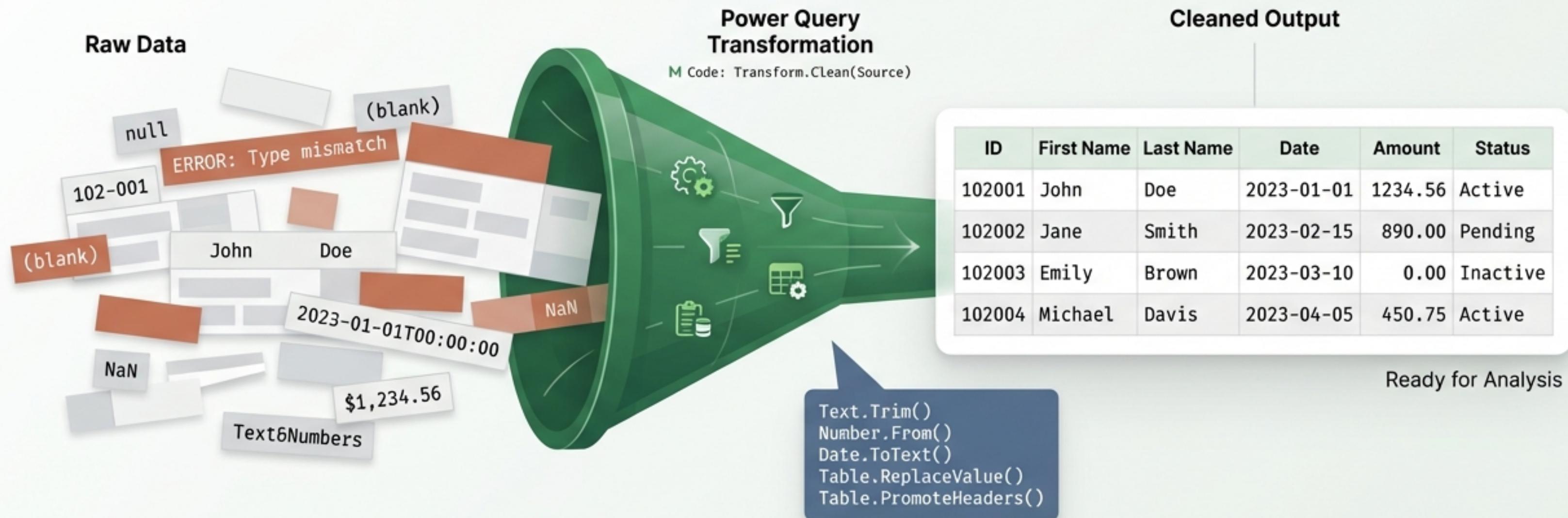


Reshaping Text, Numbers, and Structure in Power Query

Chapter 6: Profiling, Cleaning, and Transforming Data

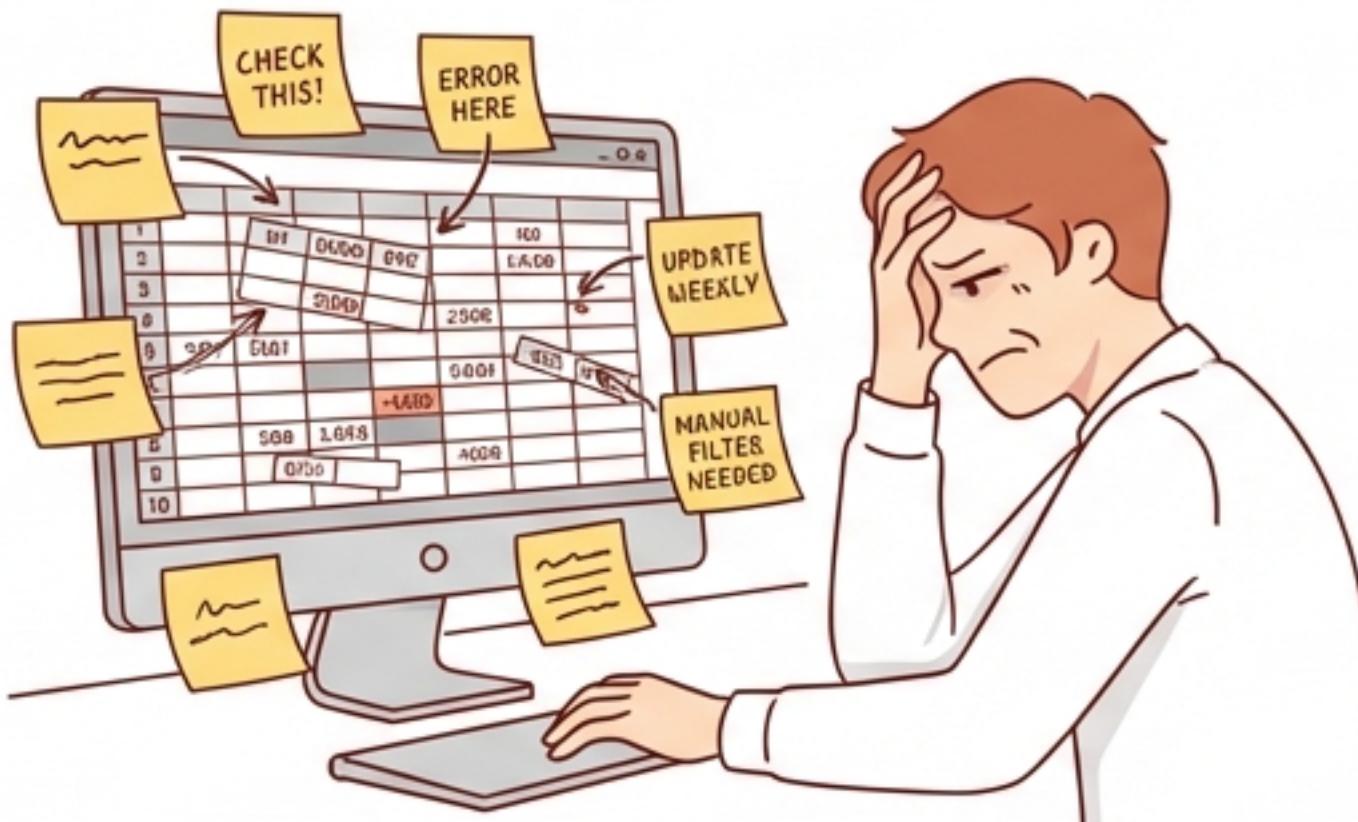
Estimated Reading Time: 15–20 minutes



The Magic of Automation

Transformation is not about fixing problems. It is about **making data answer the questions** people ask—and letting the Applied Steps pane automate the process for next week.

The Old Way

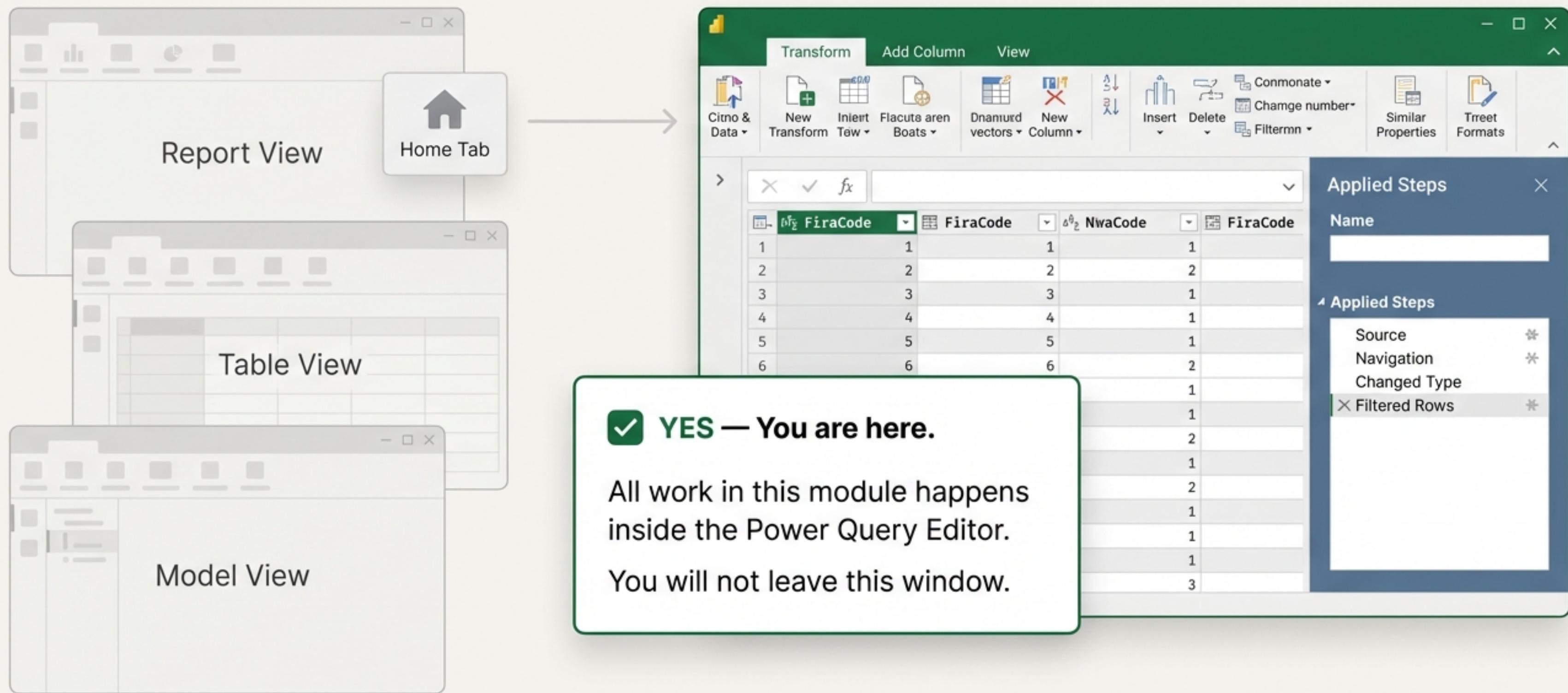


Manual Filtering. Sticky notes.
2 hours every Monday morning.

The Power Query Way

Advanced Group By. Automated summaries.
30 seconds.

Your Exclusive Sandbox: The Power Query Editor



The Three Pillars of Data Transformation

Before clicking any buttons, decide which pillar your data problem falls into.



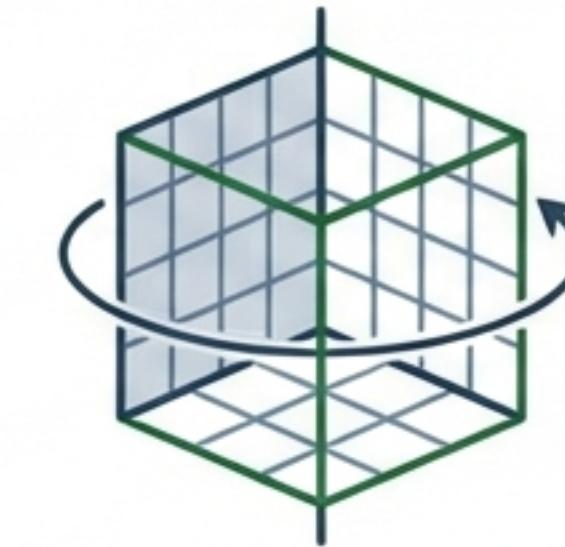
Text

Taking Apart &
Putting Together
(Split, Merge, Extract)



Numbers

Calculating &
Summarizing
(Custom Columns, Group By)

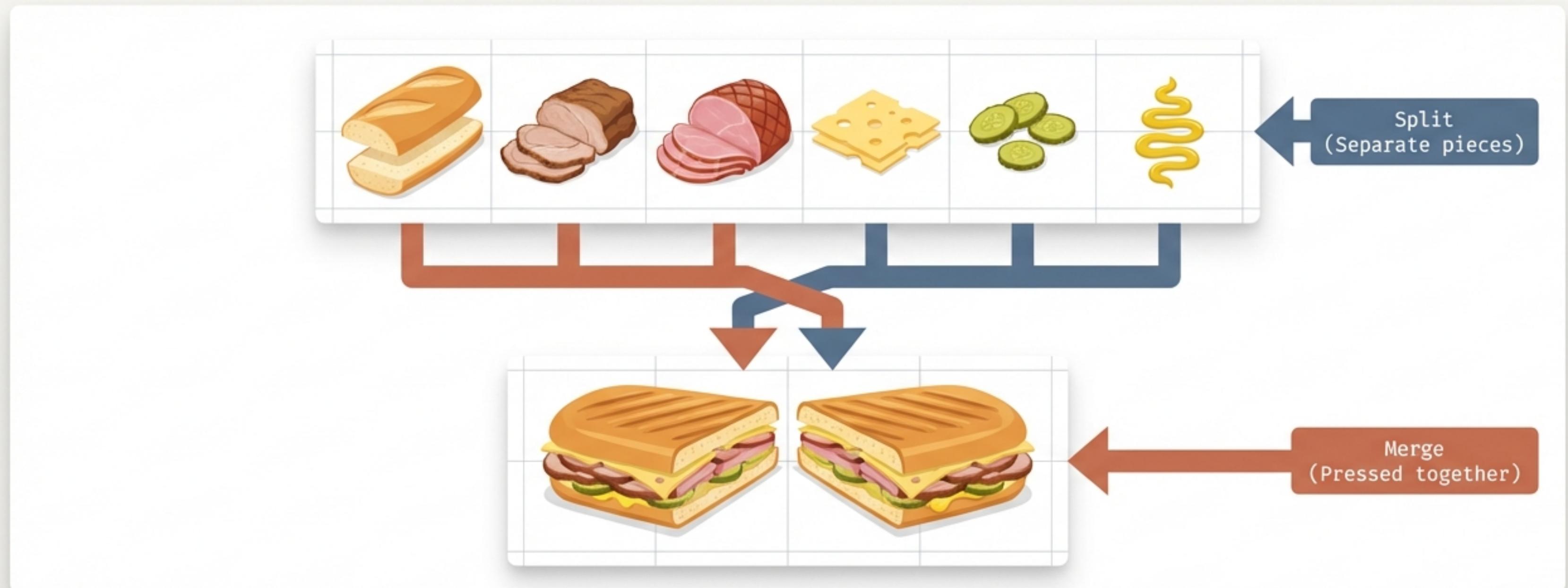


Reshaping

Rotating the Table
(Pivot, Unpivot)

Text Transformations Change the Shape of Information

Like filling out an online form (Street, City, State, Zip) versus writing a single address line for your abuela. The underlying information remains identical, but the form changes to fit the specific need.



Splitting and Merging Sofia's Name Badges

Step 1: Raw Data

| Full_Name |
|--------------|
| Full_Name |
| Maria Santos |

Step 2: Split for Badges

| First_Name | Last_Name |
|------------|-----------|
| First_Name | Last_Name |
| Maria | Santos |

Step 3: Merged for Health Dept List

| Display_Name |
|---------------|
| Display_Name |
| Santos, Maria |

Transform > Split Column >
By Delimiter (Space)

Merge Columns
(Custom Separator: ', ')

Evaluating Data Types Before Calculating

Text
(IDs and labels: Truck_ID,
Employee_ID)

Currency
(Fixed Decimal for financial
data: Amount, Tip)



Decimal Number

Whole Number
(Used for counting: Quantity)

Micro-Checkpoint:
Why is Truck_ID stored as Text (ABC)?
Because an ID is a label for identification, not a number you would ever add or average together.

Building Custom Columns for New Calculations

Transform Tab vs.
Add Column Tab

- **Transform Tab:**
Replaces the
existing selected
column.
- **Add Column Tab:**
Keeps original
columns and adds
your new
calculation
alongside them.

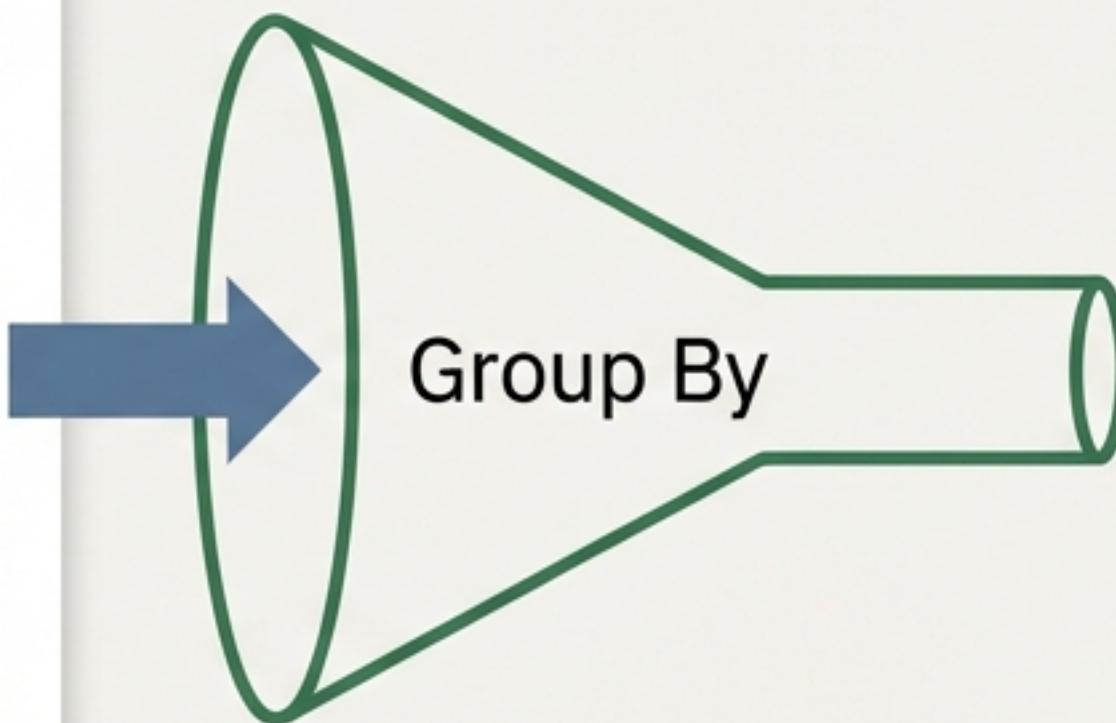
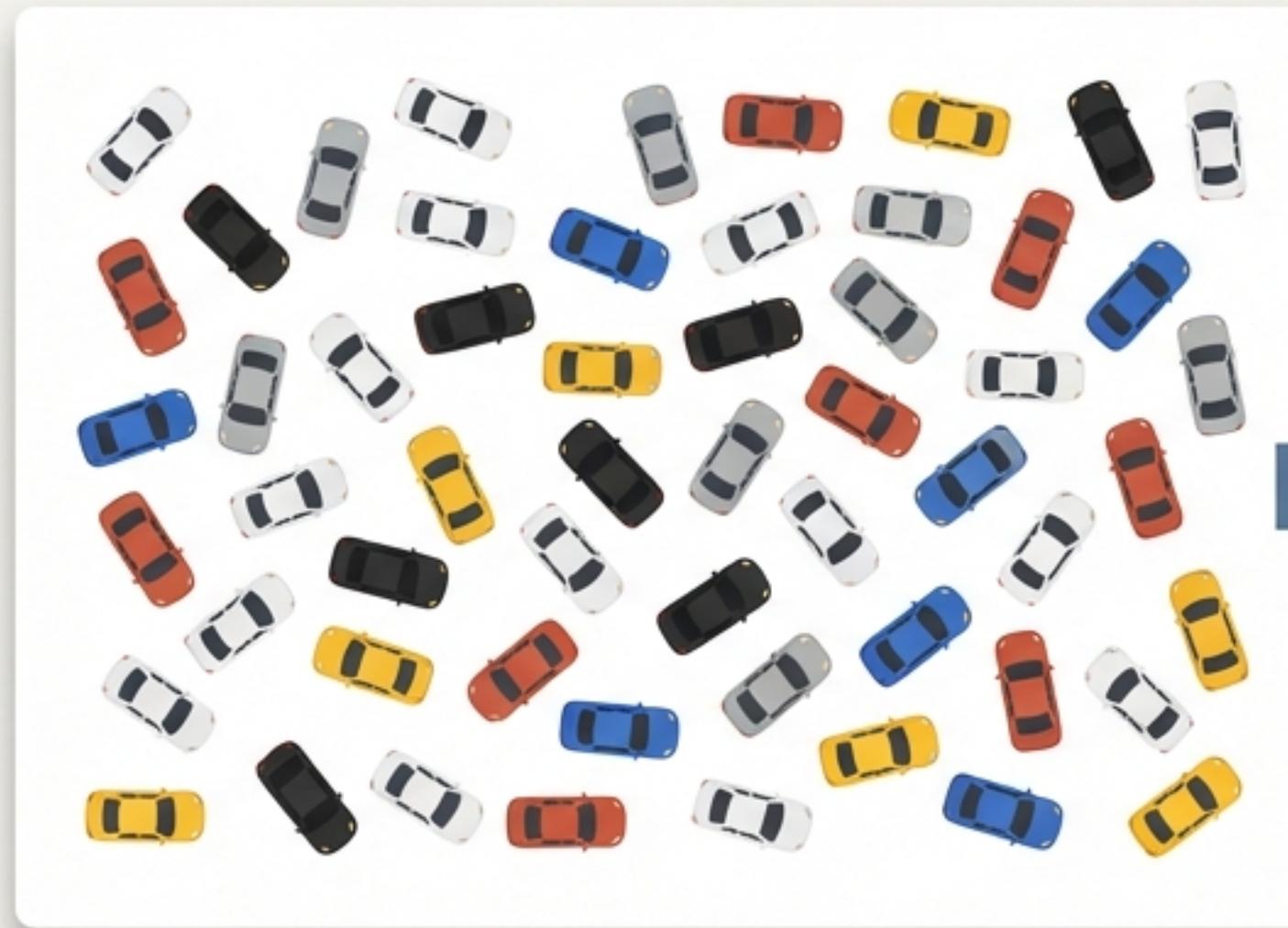
Custom Column

New column name: **Total_With_Tip**

[Amount] + [Tip]

Group By Summarizes Detailed Rows

The Parking Lot Analogy: 50 Detail Rows



6 Summary Rows

| Color | Count |
|---------|-------|
| White: | 15 |
| Black: | 10 |
| Silver: | 8 |
| Red: | 7 |
| Blue: | 5 |
| Other: | 5 |

For the Database Students: Power Query's Group By is the exact visual equivalent of SQL's `SELECT column, SUM(amount) FROM table GROUP BY column.`

Advanced Grouping for Multiple Aggregations

Advanced Group By

Group by: Truck_ID

1 New column name: Operation: Column:

Click Add aggregation

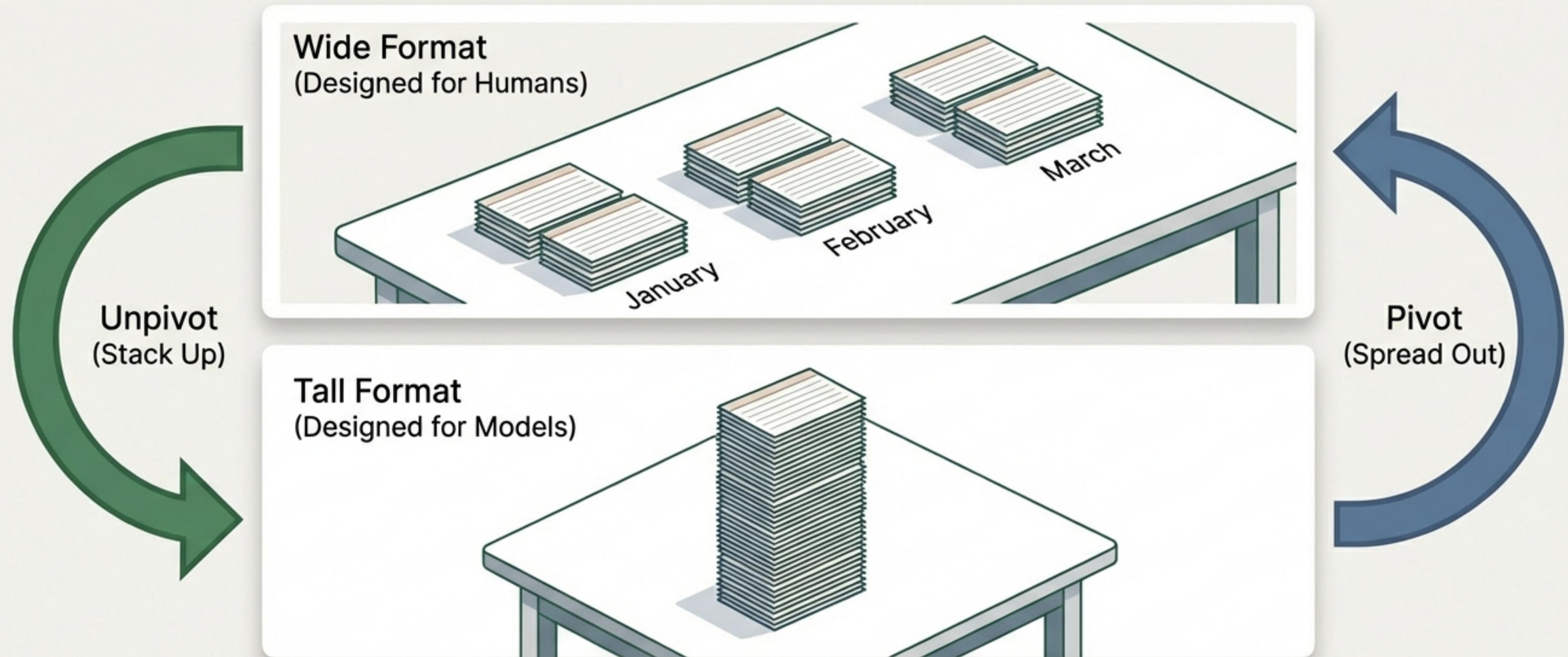
2 New column name: Operation: Column:

The diagram illustrates the process of generating multiple aggregations. It starts with a raw dataset on the left, represented as a list of rows with Truck_ID values (T-101, T-102, T-103, T-104). Three arrows point from this dataset to three separate aggregation steps. The first step, highlighted in blue, creates a new column 'Total_Sales' using the 'Sum' operation on the 'Amount' column. The second step, also highlighted in blue, creates a new column 'Avg_Transaction' using the 'Average' operation on the 'Amount' column. The third step, highlighted in green, combines the results of the first two steps, producing a final aggregated dataset on the right. This final dataset contains four rows, each corresponding to a Truck_ID and showing its total sales and average transaction amount.

| Truck_ID | Total_Sales | Avg_Transaction |
|----------|-------------|-----------------|
| T-101 | 25,450.00 | 509.00 |
| T-102 | 18,920.50 | 430.01 |
| T-103 | 31,280.00 | 624.00 |
| T-104 | 12,785.25 | 284.12 |

Reshaping Orientation with Pivot and Unpivot

Key Rule: Pivot makes data wider (fewer rows, more columns). Unpivot makes data taller (more rows, fewer columns).



Unpivoting the Sideways Event Calendar

Human-Readable Spreadsheet (Wide)

| Truck | January | February | March |
|-------|----------|----------|----------|
| T-101 | \$12,000 | \$15,500 | \$15,500 |
| T-102 | \$9,800 | \$11,200 | \$14,600 |

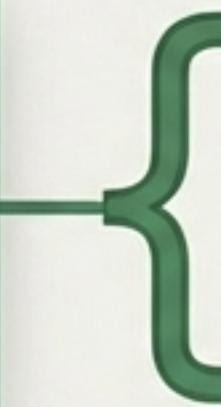
Transform > Unpivot Columns

Computer-Ready Table
(Tall)

| Truck | Month | Sales |
|-------|----------|----------|
| T-101 | January | \$12,000 |
| T-101 | February | \$15,500 |
| T-101 | March | \$18,200 |
| T-102 | January | \$9,800 |
| T-102 | February | \$11,200 |
| T-102 | March | \$14,600 |

The Applied Steps Pane Records Your Work

Sequential Dependency:
Steps depend on each other. If you delete 'Added Custom', the following 'Rounded' step will fail.

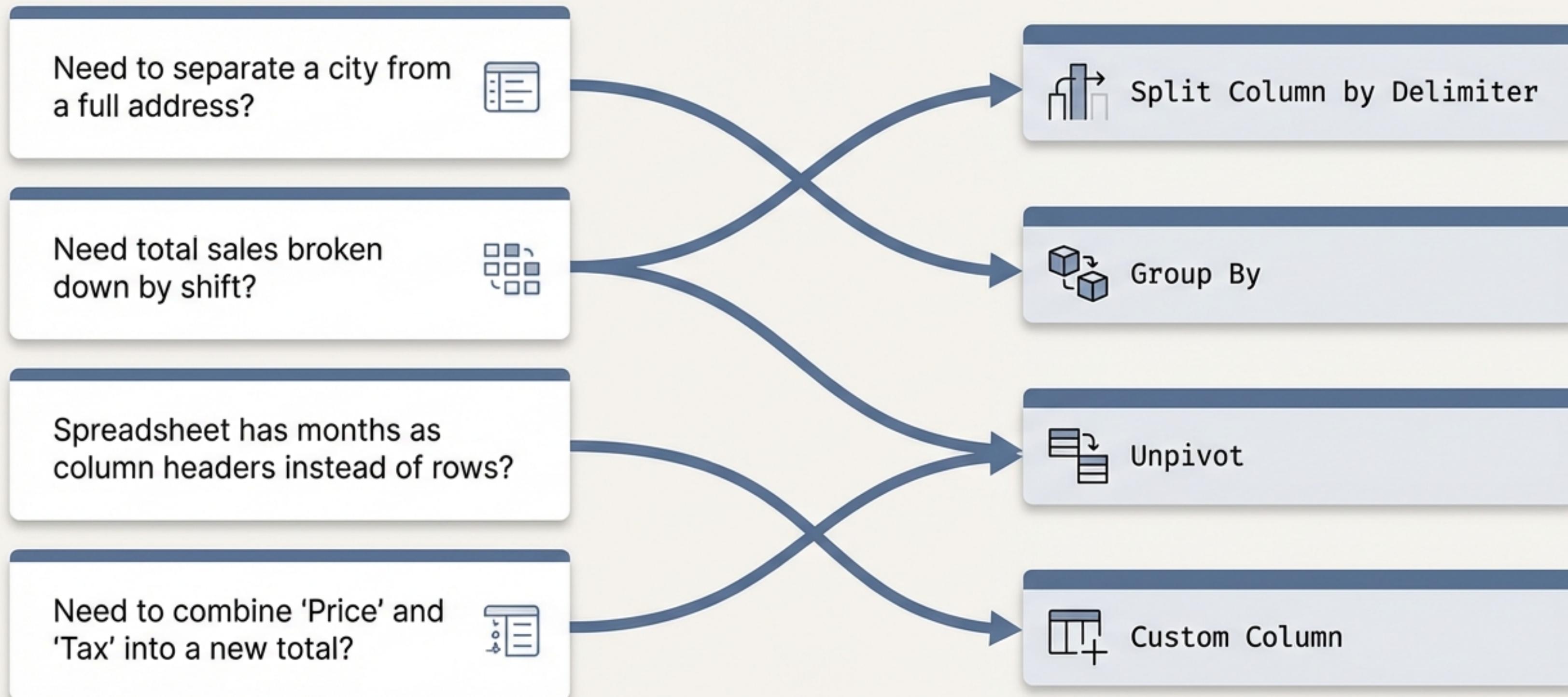


Applied Steps

- ✗ Source
- ✗ Changed Type
- ✗ Split Column
- ✗ Added Custom
- ✗ Rounded
- ✗ Unpivoted Columns

Non-Destructive: Make a mistake?
Just click the 'X' next to a step to undo it.
Your original data is never destroyed.

Match the Problem to the Transformation



Preparing to Combine Multiple Queries

You have mastered reshaping the single table. Your text is split, numbers calculated, and structures unpivoted.

Chapter 7: Bringing tables together. Merging queries with joins and appending records before loading them into the final Power BI data model.

