Data Transformation in Power BI

Advanced Editor: The Power Query interface that exposes the underlying M code for a query, letting you view, edit, or author transformation steps directly

Aggregation: A calculation that summarizes multiple values into a single metric for a group or column, such as sum, average, median, minimum, maximum, or count

All Rows aggregation: A Group By option in Power Query that produces a column of nested tables (one per group), enabling advanced per-group transformations using custom columns and M functions

Append query (Append): A Power Query operation that vertically stacks multiple tables with the same structure into one table, adding rows from each source

Custom column: A user-defined column added in Power Query whose values are calculated by an expression or formula, allowing complex row-level transformations and logic

Dataset shape: The organization or layout of data in a table (how variables and observations are arranged), which affects how easily it can be analyzed or processed

DAX (Data Analysis Expressions): A formula language used in Power BI for creating measures and calculated columns for analysis, distinct from M because it is used after data is loaded and is not case-sensitive

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Inner join: A join type that returns only rows that have matching keys in both joined tables

Join key (Key): One or more columns used to match rows between tables during a merge or join operation, typically representing a unique identifier for records

Left join (Left outer join): A join type that returns all rows from the left table and matching rows from the right table, with nulls for nonmatching right-side values

Long format: A table layout where categorical or ID values repeat down rows and a single column holds measurement values, making it easier for analysis and programmatic processing

M language: The case-sensitive functional scripting language (from Data Mashup) used by Power Query to express data import and transformation steps

Merge queries (Merge): A Power Query operation that joins two tables by matching one or more columns, combining columns from both tables into a single result

Pivot: A transformation that converts distinct values from a column into new columns, aggregating corresponding values and typically changing data from long to wide format

Power BI: A Microsoft business intelligence platform for connecting to data sources, transforming and modeling data, and building interactive visual reports and dashboards

Power Query: The data preparation and ETL (extract, transform, load) tool inside Power BI used to import, clean, reshape, and combine data before analysis

Right join (Right outer join): A join type that returns all rows from the right table and matching rows from the left table, with nulls for nonmatching left-side values

Table (in M): The primary structured data type in M composed of named columns and rows of values, used as the main object for most Power Query transformations

Transpose: An operation that swaps rows and columns in a table, changing the orientation of the dataset without aggregating values

Unpivot: The inverse transformation of pivot that flattens selected columns into a two-column category–value pair, converting wide data into long format

Wide format: A table layout where each row has unique identifiers and multiple columns hold different variables or time periods, making it more human-readable and summary-oriented