

Power Query – Exercises

Phase 1: Basic Cleaning & Formatting

Get your data ready for analysis.

1. Remove Rows & Columns

- **Scenario:** A report generated by legacy software includes 2 rows of headers/titles and empty rows that need to be removed.
- **Task:** Remove top 2 rows, promote headers, and filter out null regions.

2. Replace Values & Clean

- **Scenario:** Inconsistent city names (e.g., "BOM", "Bombay") and names with accidental spaces.
- **Task:** Use Trim on names and Replace Values to standardize City names (e.g., all to "Mumbai").

3. Fill Down

- **Scenario:** Excel data visually groups regions by merging cells (leaving subsequent cells blank), which Power Query reads as null.
- **Task:** Use Transform -> Fill -> Down to ensure every city has a region attached.

4. Split Column

- **Scenario:** HR exports full names ("Last, First"), but Payroll needs separate columns.
- **Task:** Split FullName by delimiter (comma).

5. Extract Text

- **Scenario:** Invoice numbers follow a pattern INV-YYYY-####.
 - **Task:** Extract just the **Year** (Text between delimiters) and **Sequence Number** (Text after delimiter).
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Phase 2: Logic & Enrichment

Create new data from existing data.

6. Column From Examples

- **Scenario:** Generate email addresses (firstname.lastname@company.com) without writing complex formulas.
- **Task:** Use Column From Examples and type the pattern for the first two rows.

7. Conditional Column

- **Scenario:** Categorize sales performance.
- **Task:** Create a column "Performance": If Sales > 200k = "Excellent", > 100k = "Good", else "Improvement".

8. Date Calculations (HR Analytics)

- **Scenario:** Calculate Employee Tenure and Retirement dates.
 - **Task:**
 - **Age:** Add Column -> Date -> Age.
 - **Retirement:** Custom Column Date.AddYears([DateOfBirth], 60).
 - **Service Years:** Duration between DateOfJoining and Today.
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Phase 3: Shape Transformation

Change how the table looks (Rows vs Columns).

9. Transpose

- **Scenario:** Financial metrics are in rows, Years are in columns. You need to flip them.
- **Task:** Use Transpose and fix the headers.

10. Pivot

- **Scenario:** Sensor data is "tall" (Metrics in one column). You need a wide report.
- **Task:** Pivot the Metric column so Temperature and Humidity become their own columns.

11. Unpivot

- **Scenario:** Sales data is "wide" (Jan, Feb, Mar as columns). You cannot create a Pivot Table from this.
- **Task:** Unpivot the month columns to get Attribute (Month) and Value (Amount).

12. Group By

- **Scenario:** Management wants Total Sales per Category.
- **Task:** Group by Category and Sum the Amount.

13. Parse JSON

- **Scenario:** Technical product attributes are stored in a JSON text format in one cell.
 - **Task:** Use Transform -> Parse -> JSON and expand the columns.
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Phase 4: Combining Queries

Bringing multiple tables together.

14. Append Queries (Union)

- **Scenario:** Sales data comes in separate files for Q1 and Q2.
- **Task:** Append Sales_Q1 and Sales_Q2 into a single query.

15. Merge Queries

- **Objective:** Join tables to answer complex business questions.
 - **A. Left Outer:** Merge Orders and Customers. Get the GST Number. If missing/null, keep it null.
 - **B. Inner:** Merge Orders and Products. Calculate Total Sales (Qty * Price) only for valid products.
 - **C. Right Anti (Exclusive):** Find "Dead Stock". Merge Orders and Products to find Products that have **never** been ordered.
 - **D. Left Anti (Exclusive):** Find "Inactive Customers". Merge Customers and Orders to find customers who have never bought anything.