
1. What is the difference between "Merge" and "Append" in Power Query?

- **Merge** joins two tables **side-by-side** based on a matching column (like SQL JOIN). It's used to bring in related columns from another table.
- **Append** stacks two or more tables **vertically**, combining rows. It's used when tables have the same columns (e.g., monthly sales data).

2. How do you split a "Full Name" column into "First Name" and "Last Name"?

- Select the Full Name column → Home tab → Split Column → By Delimiter → Choose "Space" → Select "At the first occurrence of the delimiter".
This creates "Full Name.1" (First Name) and "Full Name.2" (Last Name).

3. What is "Pivot Columns" used for?

- It turns **row values into columns**. For example, pivoting the "Product" column with "Quantity" as values shows one row per customer, with each product as a column.

4. How do you undo a step in Power Query?

- In the Applied Steps pane (on the right), click the **X** next to the step you want to remove, or **right-click** it and choose "Delete".

5. What is the purpose of "Reference" vs. "Duplicate" in queries?

- **Duplicate** creates a copy of a query that's independent — it copies all steps.
- **Reference** creates a new query that depends on the original one — any changes in the source query affect the referenced one. It's more memory-efficient.

6. Merge Orders.csv and Customers.xlsx on CustID (inner join)

- Load both files into Power Query.
- In **Orders query**, go to Home → Merge Queries → Select Customers query → Select CustID in both → Join kind: **Inner Join** → OK.

7. Pivot the Product column to show total Quantity per product

- Select **Product** column → Transform tab → Pivot Column → Values Column: **Quantity** → Aggregate: **Sum**.

8. Append two tables with identical columns (e.g., Orders_Jan.csv + Orders_Feb.csv)

- Load both tables → Home tab → Append Queries → Select both tables → OK. This stacks the rows into one combined table.

9. Use "Fill Down" to replace nulls in the Email column with the previous value

- Select the **Email** column → Transform tab → Fill → Down. This copies the last non-null value downward to fill blanks.

10. Extract the domain (e.g., "example.com") from the Email column

- Add Column → Extract → Text After Delimiter → Delimiter: "@"
This gives the domain portion of the email.

11. Write M-code to merge queries dynamically based on a parameter (e.g., JoinType = "Inner")

```
let
    JoinType = "InnerJoin",
    Merged = Table.NestedJoin(Orders, {"CustID"}, Customers, {"CustID"}, "CustomerData",
    JoinKind.Inner)
in
    Merged
```

To make the join type dynamic, you can create a parameter `JoinType` and use conditional logic in your query.

12. Unpivot a table with columns like "Jan_Sales," "Feb_Sales" into a "Month" and "Sales" format

- Select the sales columns (e.g., Jan_Sales, Feb_Sales) → Transform tab → Unpivot Columns
This creates two new columns: **Attribute (Month)** and **Value (Sales)**.
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13. Handle errors in a custom column (e.g., division by zero) using try...otherwise

- Add Column → Custom Column →

= try [Revenue] / [Units] otherwise 0

This replaces any error (like divide by zero) with 0.

14. Create a function in Power Query to clean phone numbers (e.g., remove dashes)

- Create a blank query → Advanced Editor →

(phone as text) => Text.Select(phone, {"0".. "9"})

This function removes all characters except digits. You can invoke this function on a column to clean phone numbers.

15. Optimize a query with 10+ steps—identify bottlenecks and simplify

- **Remove unused columns early:** Use `Table.SelectColumns` as soon as possible.
 - **Filter rows early:** Reduce data volume before applying heavy transformations.
 - **Avoid repeated calculations:** Store reused calculations in intermediate steps.
 - **Reduce steps:** Combine related steps like multiple "Replaced Values" or "Renamed Columns".
 - **Disable query loading** for intermediary queries not needed in the report.
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