HOMEWORK

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

- **Merge**: Combines *columns* from two tables based on a key (like a SQL JOIN).
- **Append**: Stacks *rows* from tables with the same schema (like a SQL UNION).

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

- Use **Split Column → By Delimiter**, choose a space (" "), and split at the first occurrence.

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3. What is "Pivot Columns" used for?

- Converts values in a column into column headers and summarizes data accordingly.

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

- Go to **Applied Steps**, click the **"X"** next to the step you want to remove.

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

- **Duplicate**: Makes an independent copy.
- **Reference**: Creates a linked view that reflects changes in the original query.

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

- Load both, then: **Home → Merge Queries**, select CustID columns, and choose **Inner Join**.
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7. Pivot the Product column to show total Quantity per product.

- Select Product, go to **Transform → Pivot Column**, values column = Quantity, aggregation = **Sum**.

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

- Load both, then: **Home → Append Queries → Append as New**.

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

- Select Email, then: **Transform → Fill → Down**.

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

- Use: **Transform → Extract → Text After Delimiter**, delimiter = @.

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11. Write M-code to merge queries dynamically based on a parameter (e.g., JoinType = "Inner").
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```
let
    JoinType = JoinKind.Inner,
    Merged = Table.NestedJoin(Orders, {"CustID"}, Customers, {"CustID"}, "MergedTable", JoinType)
in
    Merged
```

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

- Select the monthly columns → Right-click → **Unpivot Columns**.

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13. Handle errors in a custom column (e.g., division by zero) using try...otherwise.

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```
= try [Numerator] / [Denominator] otherwise null
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14. Create a function in Power Query to clean phone numbers (e.g., remove dashes).

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

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

- Combine steps where possible, remove unused columns early, avoid complex operations until the end, and **disable query previews** during editing.