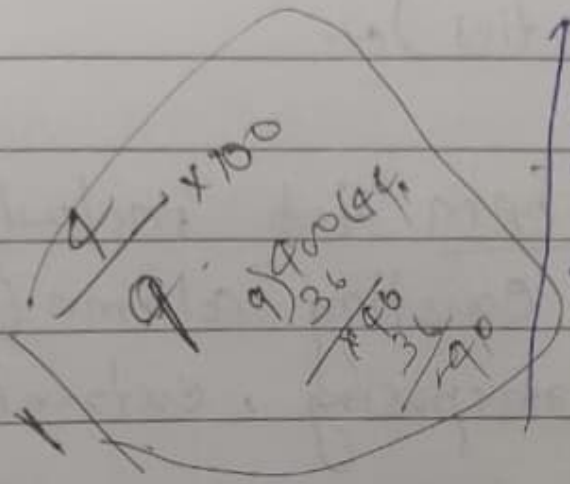
Geography

Physical — Human — Regional



Powerbi Report server :- An on-premises server for hosting Powerbi reports.

Powerbi is a business analytics tool developed by Microsoft. It helps us visulize our data and share insight across our organization.

Its main components are

- Powerbi desktop :- A window application for Creating reports and data Visual
- Powerbi Servic :- An online Saas (software as a service) platform for sharing & Collabrating on report
- Powerbi Mobile app :- App for viewing reports & dashboards
- Powerbi Gateway :- Bridges the gap blw onpremises data sources and the powerbi Service.

Power Query Editor

→ The HOME tab includes general settings and common table transformation tools. (Parameters, table properties) etc.

→ The TRANSFORM tab includes tools to modify existing column (splitting / grouping, transposing, extracting text, etc.)

→ The ADD COLUMN tools Create new column (based on conditional rules, text operations, calculations, dates, ~~etc~~ data operators etc.)

STORAGE & CONNECTION MODES

→ Power BI supports serval types of storage and ~~com~~ connection modes :-

- Import :- Tables are stored in-memory within Power BI and queries are fulfilled by cached data (default).

default mode ↩ storage

→ Dataset is less than 1 GB (after compression) and fast performance.

it is ~~super handy~~ when
→ Source data does not change frequently.

→ No restrictions on power query, data modeling, and DAX functions.

→ Import data set are really useful when you need fast query performance.

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- DirectQuery :-

Tables are connected directly to the sourcedata and any queries are executed on-demand at the data source.

→ Dataset is too large to be stored in-memory.

→ Source data changes frequently and reports must reflect changes. (most recent data)

→ Company policy states that data can only be accessed from the original source.

- Composite Model :- (Dual)

Tables come from a mix of Import and DirectQuery modes, or integrate multiple DirectQuery tables.

→ Boost performance by setting appropriate storage for each table.

→ Combine a DirectQuery model with additional imported data.

→ Create a single model from two or more DirectQuery models.

→ Live Connection :-

Connect to pre-published Power BI dataset in Power BI service or Azure Analysis Services.

→ Create one dataset that servers as a central source of truth.

→ Analyst teams can create different reports from the same source.

→ Multi-developer teams where one user builds the model and another works on visualization.

Data QA & Profiling Tools

(Quality Assurance)

* Profiling tools is a visual way to explore data and to get a sense of its compo... like Column quality, Column distribution, and column profile allow you to explore the quality, composition, and distribution of your data before loading it into the Power BI front-end.

→ Column quality shows the percentage of values within a column that are valid, contains errors, or are empty.

- ~~How~~ Hover over the column quality box to see the number of record in each category.
- click the option menu to remove duplicates, ~~errors~~ or empty values.

Imp:-

Profiling tools are great way to quickly find and address common data quality issues in one place, instead of having to manually apply multiple tools or filters.

→ Column distribution provides a Sample distribution of the data within a column.

→ Column Profile provides a more holistic view of the data in a column, including a sample distribution and profiling statistics.

Index & Conditional Columns

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* Index Column :- Index column contain a list of sequential values that can be used to identify each unique row in a table. (typically starting from 0 or 1)

→ These are often used to create unique IDs that can be used to form relationships between tables (more on that later)

* Conditional columns :- Conditional columns allow you to define new fields based on logical rules and If/then conditions.

eg:- Here we are creating a conditional column named Quantity Type, which is based on Order Quantity :

- if order Quantity = 1, Quantity Type = "single item"
- else if order Quantity > 1, Quantity Type = "multiple item"
- else : Quantity Type = "other"

Pivoting & Unpivoting

- Pivoting describes the process of turning distinct row values into column.

AND

Unpivoting describes the process of turing distinct columns into rows.

- Pivoting rotates it from vertical to horizontal, AND unpivoting rotates it from horizontal to vertical.

- NOTE :- Transpose works very similarly, but doesn't recognize unique values, instead, the entire table is transformed so that each row becomes a column and vice versa.

GROUPING & AGGREGATING

- GROUP BY allows you to aggregate data at a different level or "grain". (i.e. group daily records into monthly, aggregate transactions by store, etc.)

⇒ one of the common ~~eaxmples~~ examples of this would be doing something like transforming daily transaction into weekly or monthly or rolling up transaction level data by store, by product brand or region, et cetera.

So, its taking a really deep, really detailed table and rolling it up into a higher level summary.

MERGING QUERIES

Merging queries allows you to join tables based on a common column (like lookup in Excel)

NOTE :- Merging add column to an existing table/query

Imp :-

Just because you can merge tables doesn't mean you should.

In many cases, it's better to keep tables separate and define relationship between them in the data model (more on that soon)

APPENDING QUERIES

Appending queries allows you to combine or stack tables sharing the exact same column structure and data type.
(Same str. & same data type)

Note :- Appending add Rows to an existing table / query.

* Merging table ~~rate~~ makes table wide by adding more columns.

Appending makes tables taller by adding more rows.