(DAX)

Data Analysis Expression

The DAX Language

Language of
- power pivot
- Power BI
- SSAS Tabular

DAX is simple, but it is not easy. New programming concept and patterns. Do not try to learn it the usual way.

* Learning theory is important.

The people who created Dax They basically took the excel formula language and sql Language. They shakes both together and make the recipi Dax

* If we thing power BI is a toney con the power pivot if pax is the engine of that con

- To create measure of any table. In [Report view]

Right click on table → select New measure

From the Home tab of [Table view] there have option of new measure.

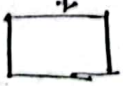
→ Function cell is open

Total amount = SUM (sales[Amount])

Then see Total amount is attached with sales table

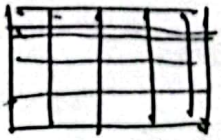
- Suppose sales is xuun list and total-amount is list hand glaps.

- To see the value of measure total amount you can put a simple card. then put the total amount



Tip: Use table visuals [when] practicing Dax

Select a table [returns]



← put item sales

← total amount

How does power pivot work?

- When you create the measure you only specify the logic. You don't have to tell power BI how to calculate amount for individual geography

- One way of thinking about power pivot engine is it realy two things.
  - It filters the data
  - And calculate the values.

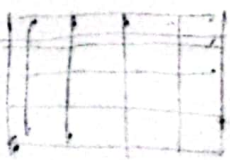
calculation define by your DAX measure. And filter will tell power pivot what aspect of the data to look at when calculating the value

Formatting measure:

Sometimes you want to format your measure for your aspect. like measure is give in thousand you want to make it million.

To do that click on the measure total amount from table then at top select measure tool tab.

There you will get a lot of option to format your measure



Power pivot first filter the data then calculate.

- one of the key concept in dax is that measures are reuseable. If you create a measure like total amount you can reuse it to do something else later

- To divide two measure to create a new measure

Division = divide(numerator, denominator, Alternate result)

- The beauty of all these measure is reuseable

Basically In Dax ~~#~~ At first you can select a ~~box~~ table Then in the table you put at first what you want to groupby with, Then For every groupby value you can put measure.

- Dax have a calculate function with filter

Name = CALCULATE (Expression, Filter1, Filter two, ...)

* You can use variable

NZAU sales Amount =

VAR NzAmount = CALCULATE ([Total amount], Location[Area]="NZ"

VAR Aust Amount = CALCULATE ([Total Amount], Location[Area] = "Aust")

Return

NZ Amount + Aust Amount

Another way

= CALCULATE ([Total amount], Location [Geo] in {"New Zealand", "Australia"})

These topics are most important for the interview to cover key Power BI skills needed for a Data Analyst or Power BI Developer role:

1. Data Import Techniques: Connecting to various data sources like SQL databases, Excel files, and APIs etc. using Power Query.
2. Data Cleaning and Transformation in Power Query: Removing duplicates, splitting columns, unpivoting data, merging queries.
3. Data Modeling Best Practices: Setting up primary and foreign keys, creating relationships, using lookup tables.
4. Essential DAX Functions to revise: CALCULATE, SUMX, FILTER, ALL, RELATED, DISTINCTCOUNT, IF, SWITCH, LOOKUPVALUE, AVERAGEX, MINX, MAXX, VALUES, VAR, DIVIDE, RANKX, ADDCOLUMNS, SUBTRACT, MULTIPLY, SELECTEDVALUE, EARLIER, SUM, COUNT, COUNTROWS, CONCATENATE, CONCATENATEX, BLANK, FORMAT.
5. Time Intelligence Functions: SAMEPERIODLASTYEAR, DATEADD, TOTALYTD, TOTALMTD, TOTALQTD, DATESYTD, PREVIOUSYEAR, NEXTDAY, PREVIOUSDAY, DATESBETWEEN.
6. Creating and Managing Hierarchies: Organize data into levels (e.g., Year > Quarter > Month) to enable drill-down capabilities.
7. Building Interactive Dashboards: Utilize slicers, bookmarks, and buttons to make dashboards interactive and user-friendly.

8. Custom Visuals from Power BI Marketplace: Incorporate custom visuals to meet specific reporting needs and enhance visualization.
9. Drillthrough and Drill-down Features: Enable detailed analysis by implementing drillthrough pages and using drill-down options within charts.
10. Conditional Formatting: Apply rules-based formatting to highlight critical data points in tables and charts dynamically.
11. KPI Visuals: Create Key Performance Indicators to monitor and display performance against predefined targets.
12. Role-Level Security (RLS): Configure security roles to control data access based on user roles.
13. Optimizing Performance: Techniques such as using aggregations, managing relationships efficiently, and optimizing DAX calculations.
14. Managing Power BI Gateways: Set up and manage gateways to refresh data from on-premises sources.

15. Exporting and Sharing Reports: Different methods to share reports, such as publishing to the Power BI Service, exporting to PDF, and embedding in SharePoint.
16. Advanced Chart Types: Creating and interpreting charts like waterfall charts, funnel charts, and decomposition trees.
17. Power BI Service Features: Managing datasets, workspaces, and apps, and configuring user permissions within the Power BI Service.
18. Data Refresh Schedules: Setting up automatic data refresh schedules to keep reports up-to-date.
19. Row-Level Security (RLS) Implementation: Implementing RLS to control user-specific data access.
20. Publishing and Sharing Options: Understanding how to securely share reports with stakeholders internally and externally.
21. Troubleshooting Common Issues: Identifying and resolving common problems such as data refresh failures and performance bottlenecks.