



DAX Overview

- ❖ Data Analysis Expressions (DAX) is a formula expression language used in Analysis Services, **Power BI**, and Power Pivot in Excel.
- ❖ In Power BI, calculated columns, calculated measures, and calculated tables are essential features that allow you to create custom calculations and expressions based on your data.

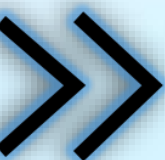
Calculated
Columns

Calculated
Measures

Calculated
Tables



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Calculated Columns



- **Stored/Saved** in memory.
- Calculates when the report is **refreshed**.
- **Row level** context.
- **Consumes** memory.
- **Row by row** calculation.
- Value can be seen in the column in **data tab**.
- In the vast majority circumstances, **Power query** can be used.
- Examples :

1. Profit = financials[Sales] - financials[Cost]

2. New Column = financials[Discounts]*financials[Units Sold]



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Calculated Measures



- Is *not stored/saved* anywhere.
- It is Calculated on *fly*.
- **Filter** context.
- CPU Usage is *high*.
- Usually is a result of an **aggregation** in most cases.
- Value can be seen when *adding* in the report.
- DAX usually is the **best place** for this calculation.
- Example : **DatesYTD**

```
DATESYTD = CALCULATE(SUM(financials[Profit]),  
                     DATESYTD('Calendar'[Date].[Date]))
```

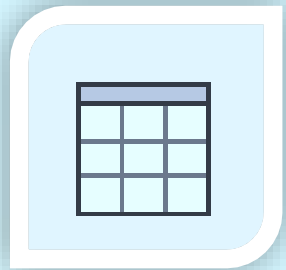


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Calculated Tables



- **Stored/Saved** in memory
- Calculated Table is like a **Calculated Column**.
- Is calculated from other tables and columns **already in the model**.
- Re-calculated when the model is **re-processed**.
- Calculated tables can help in **speeding** up DAX expressions.
- Like the technique of using aggregate tables in SQL database to speed up the calculations in SQL.
- **Quick and easy** way to create **Calendar table** etc.
- During debugging complex DAX expressions, it might be **easier for us to store** the intermediate results in a calculated table and see whether the expressions are behaving as expected.

Example : **Calendar table**



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