



# SQL DATA Analytics

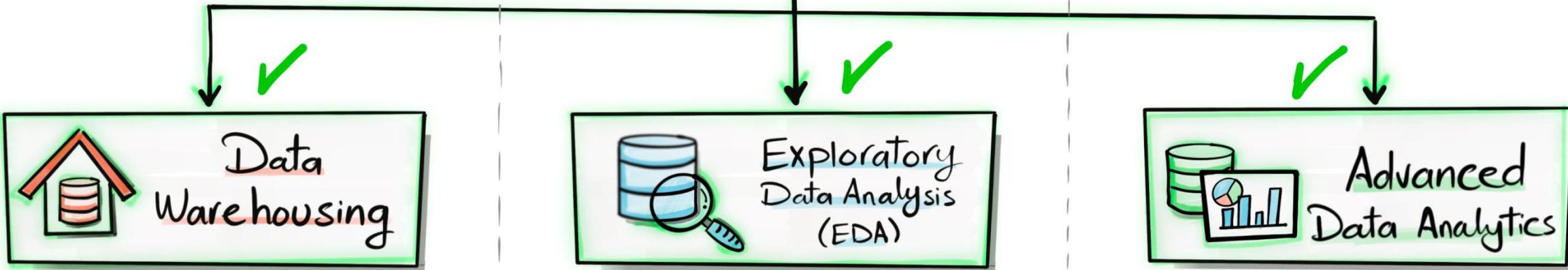
## Project

Baraa Khatib Salkini  
YouTube | **DATA WITH BARAA**  
SQL Course | Data Analytics Project





## SQL Projects



"Organize, Structure, Prepare."

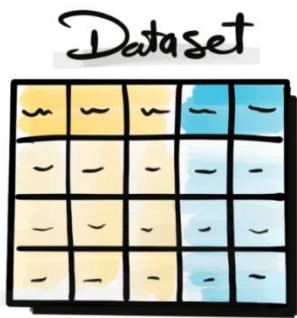
- ETL/ELT Processing
- Data Architecture
- Data Integration
- Data Cleansing
- Data Load
- Data Modeling

"Understand Data."

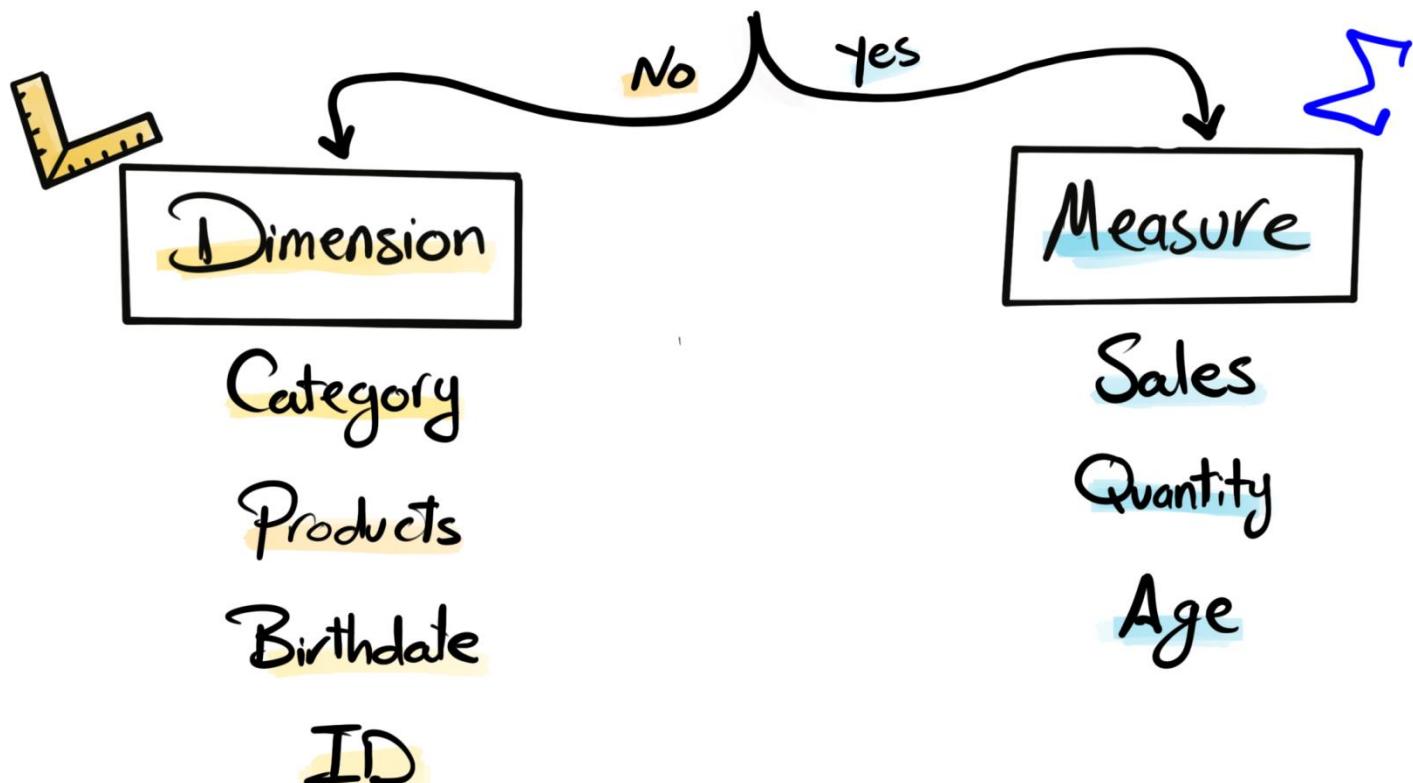
- Basic Queries
- Data Profiling
- Simple Aggregations
- Subquery

"Answer Business Questions."

- Complex Queries
- Window Functions
- CTE
- Subqueries
- Reports



Is it Numeric?  
 & Does it make Sense to aggregate?



A	C
B	D

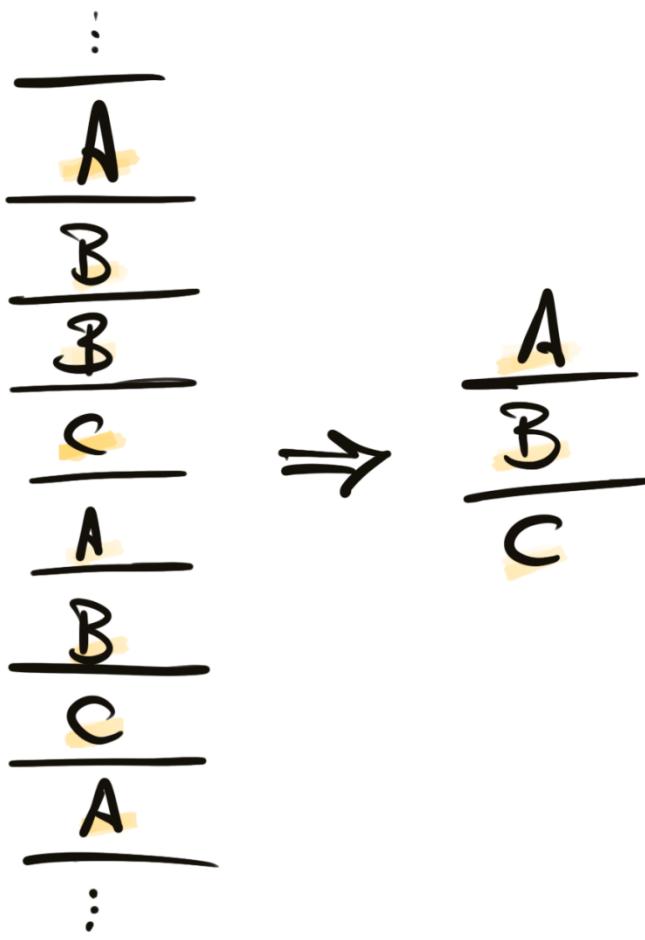
## Dimensions Exploration

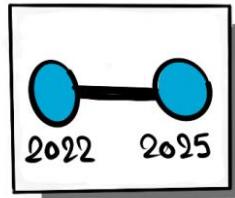
### DISTINCT [Dimension]

DISTINCT Country

DISTINCT Category

DISTINCT Product





## Date Exploration

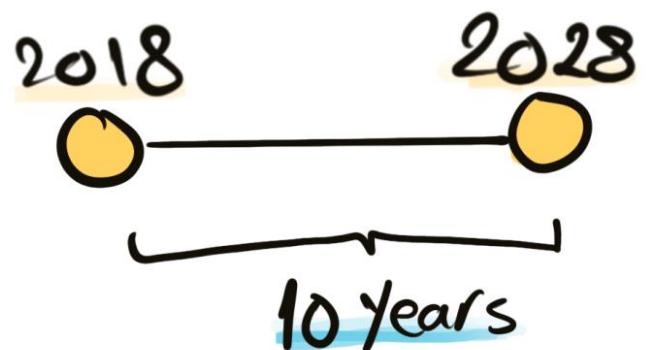
### MIN/MAX [Date Dimension]

MIN Order\_date

MAX Create\_date

MIN Birthdate

2019
2020
2018
2018
2022
2023
2023
2028
2022



DATEDIFF

999

# Measures Exploration

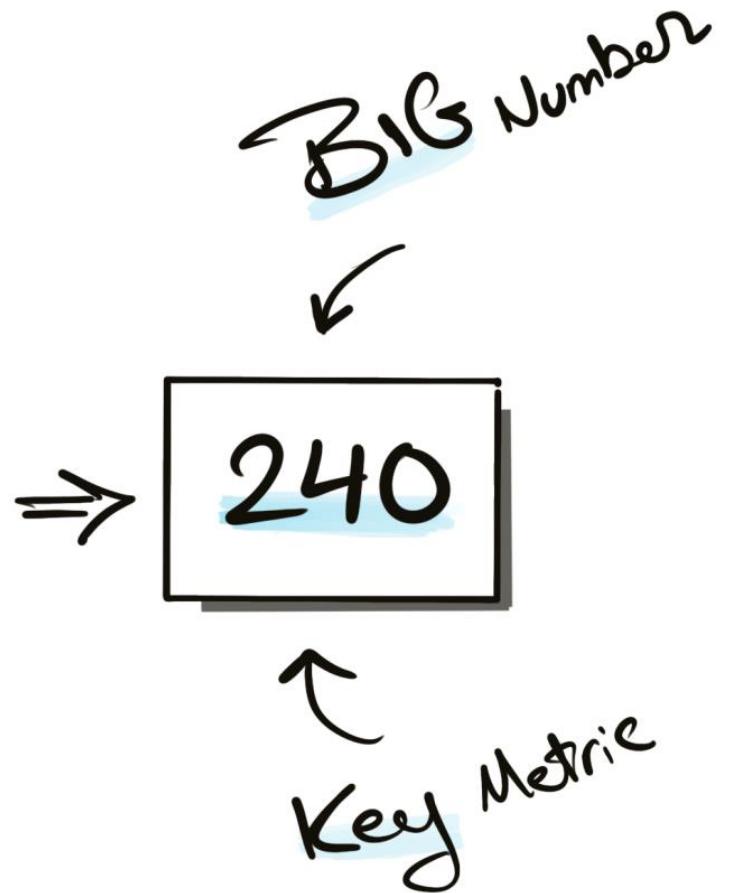
$\sum$  [Measure]

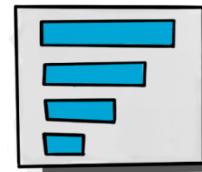
SUM (Sales)

AVG (Price)

SUM (Quantity)

$$\begin{array}{r}
 10 \\
 \hline
 20 \\
 \\ 
 50 \\
 \hline
 30 \\
 \\ 
 10 \\
 \hline
 80 \\
 \hline
 30 \\
 \hline
 10
 \end{array}$$





# Magnitude

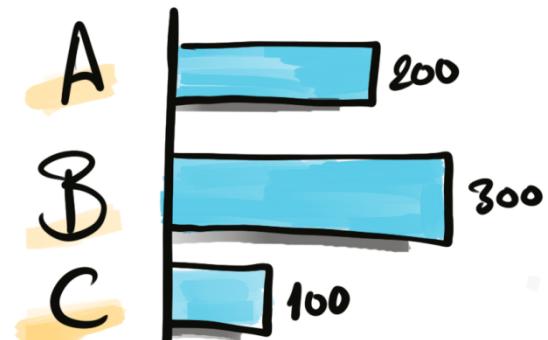
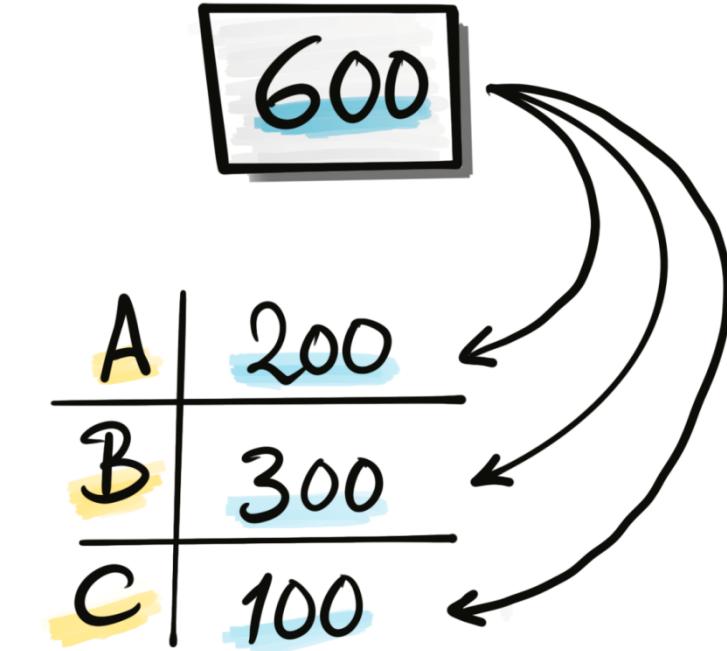
$\Sigma$  [Measure] By [Dimension]

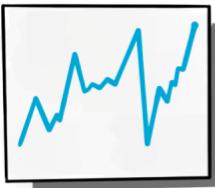
Total Sales By Country

Total Quantity By Category

Average Price By Product

Total Orders By Customer





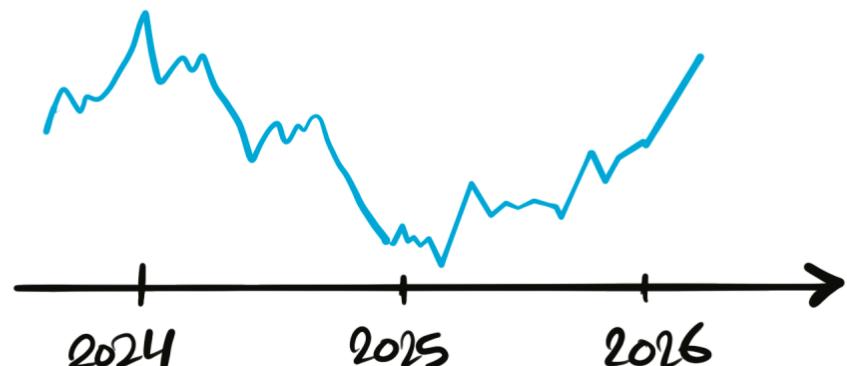
## Change - Over - Time ~ Trends~

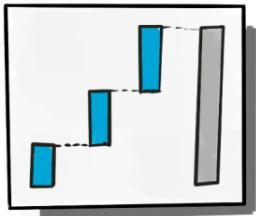
$\sum$  [Measure] By [Date Dimension]

Total Sales By Year

Average Cost By Month

2024	300
2025	100
2026	200





## Cumulative Analysis

$\sum$  [Cumulative Measure] By [Date Dimension]

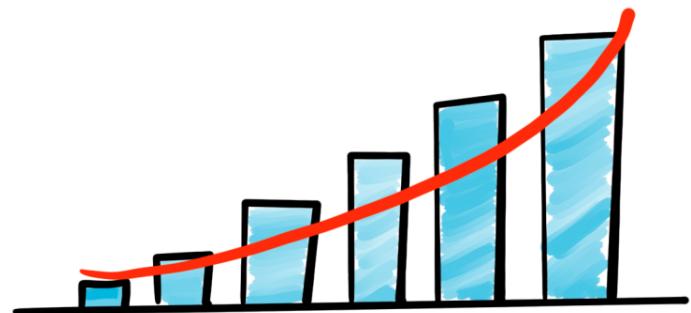
Running Total Sales By Year

Moving Average of Sales By Month

2024	300	300
2025	100	400
2026	200	600

A hand-drawn diagram shows red arrows indicating the cumulative addition of values from previous years to the current year. In 2025, a red circle with a plus sign is placed above the 100 value, with an arrow pointing to the 300 value in 2024. In 2026, another red circle with a plus sign is placed above the 200 value, with an arrow pointing to the 400 value in 2025. A blue arrow labeled "Cumulative" points diagonally across the table.

## WINDOW FUNCTIONS





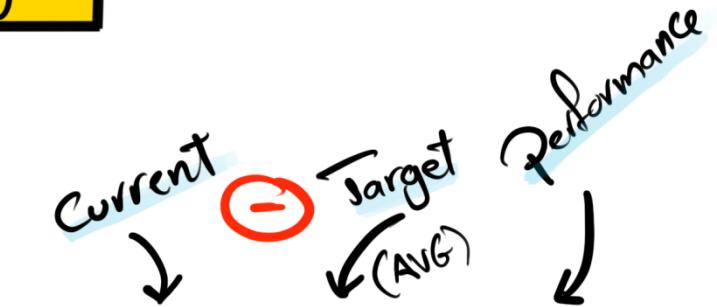
## Performance Analysis

Current [Measure] - Target [Measure]

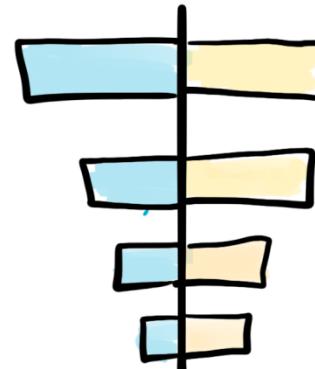
Current Sales - Average Sales

Current year Sales - Previous Year Sales

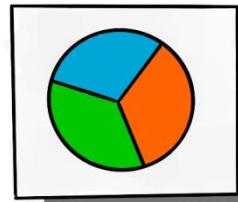
Current Sales - lowest Sales



A	200	200	0
B	300	200	100
C	100	200	-100



## WINDOW FUNCTIONS



## Part-to-Whole

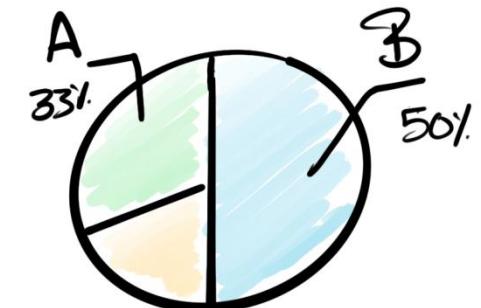
Proportional Analysis

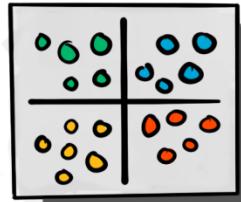
$([\text{Measure}] / \text{Total [Measure]}) * 100$  By [Dimension]

$(\text{Sales} / \text{Total Sales}) * 100$  By Category

$(\text{Quantity} / \text{Total Quantity}) * 100$  By Country

A	200	33%
B	300	50%
C	100	17%





## Data Segmentation

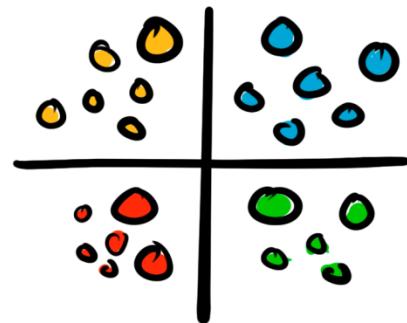
[Measure] By [Measure]

Total Products By Sales Range

Total Customers By Age

Σ Categorize

3	50		
4	100	Low	7
5	150	Medium	6
1	200		
10	250	Large	15
5	300		



## CASE WHEN STATEMENT