



DATA WITH BARAA

SQL DATA WAREHOUSE

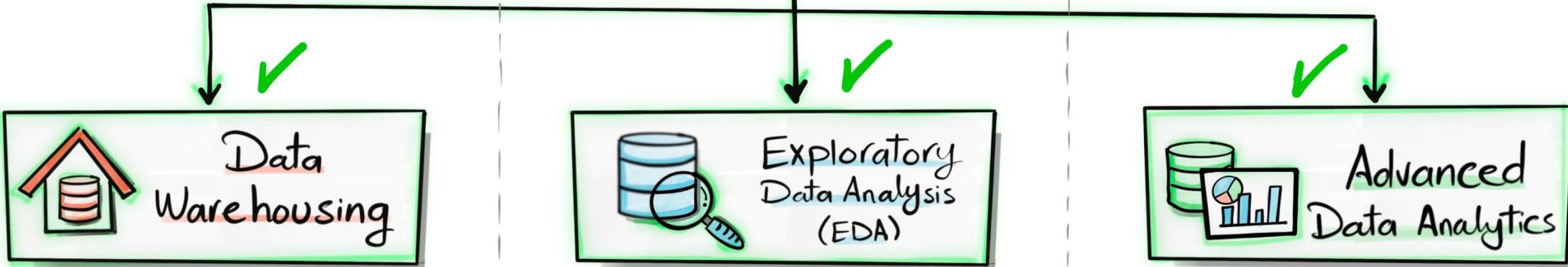
Project

Baraa Khatib Salkini
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SQL Course | Data Warehouse Project





SQL Projects



"Organize, Structure, Prepare."

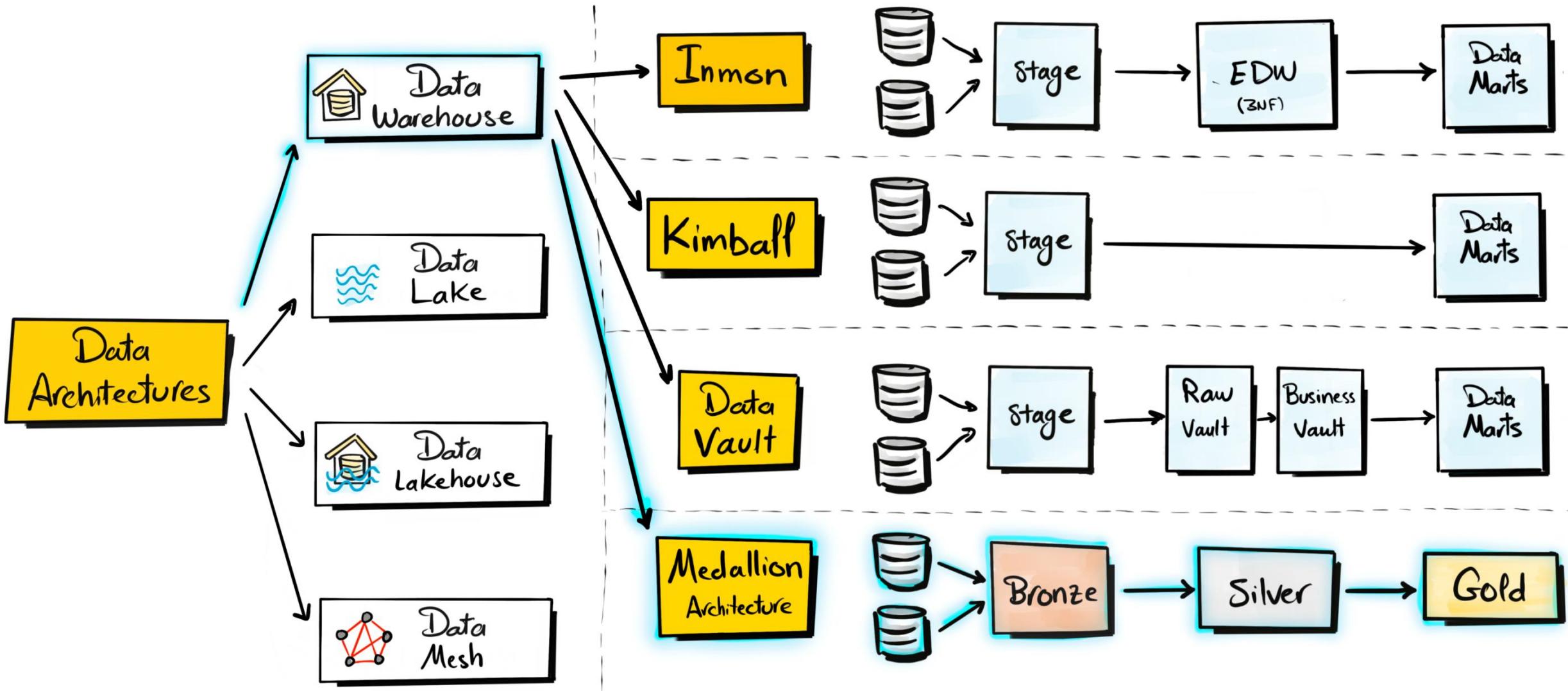
- ETL/ELT Processing
- Data Architecture
- Data Integration
- Data Cleansing
- Data Load
- Data Modeling

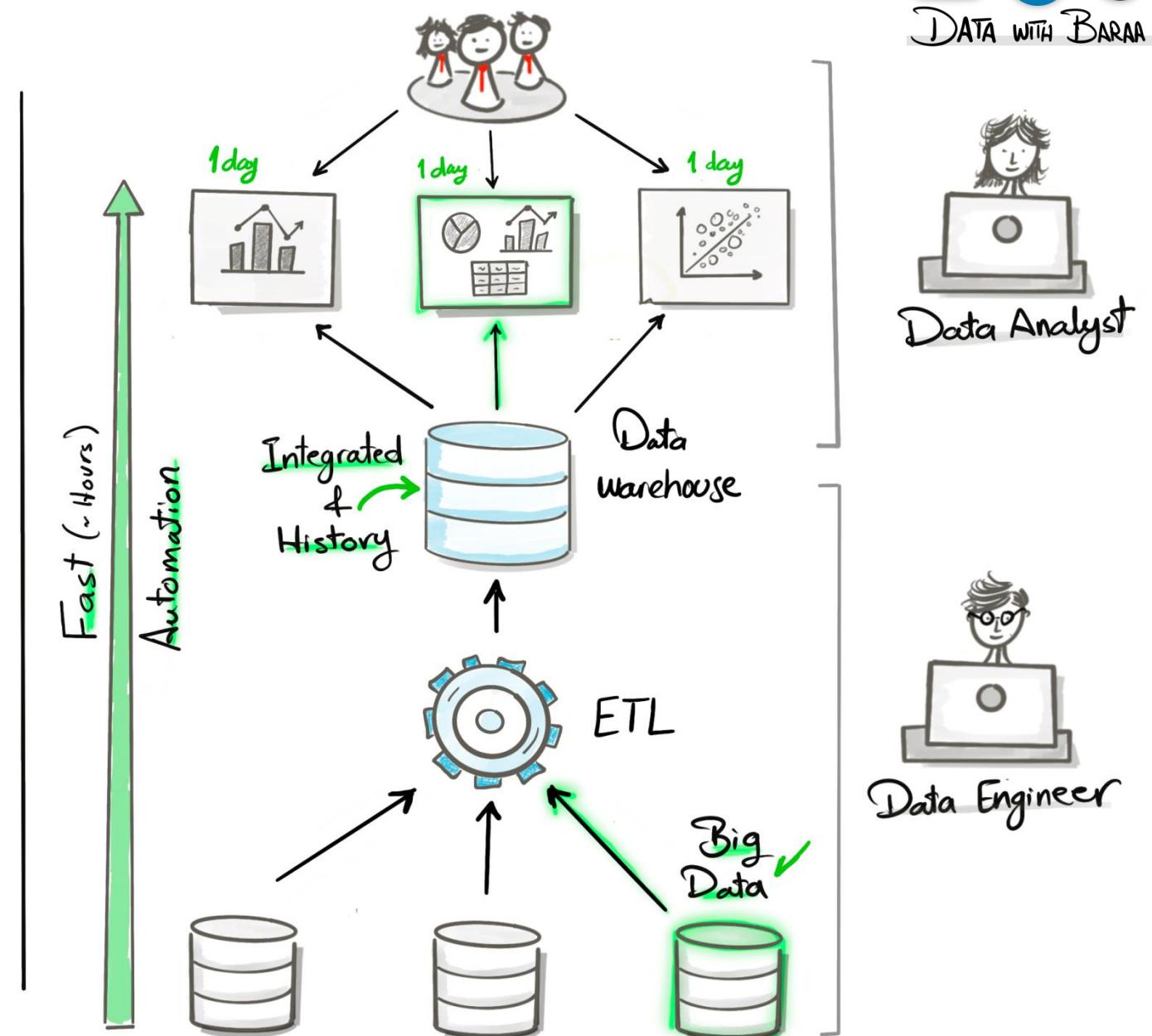
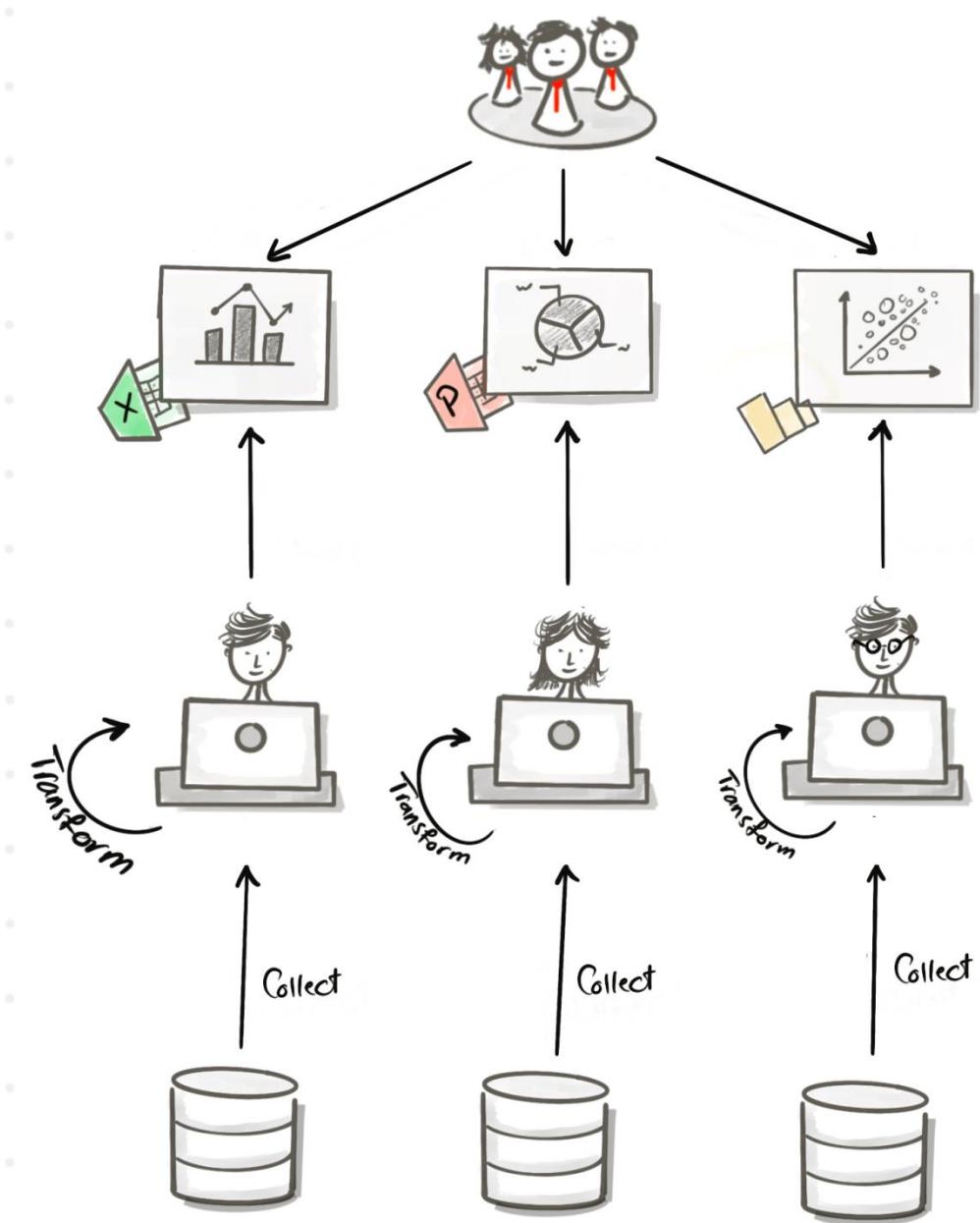
"Understand Data."

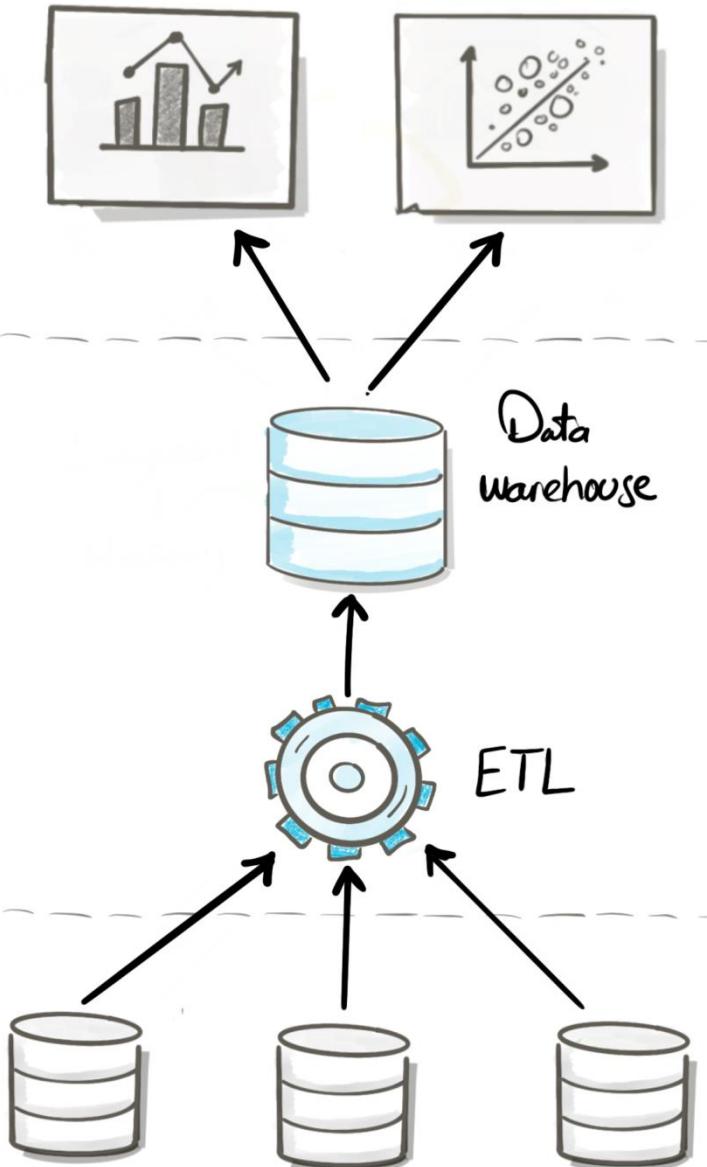
- Basic Queries
- Data Profiling
- Simple Aggregations
- Subquery

"Answer Business Questions."

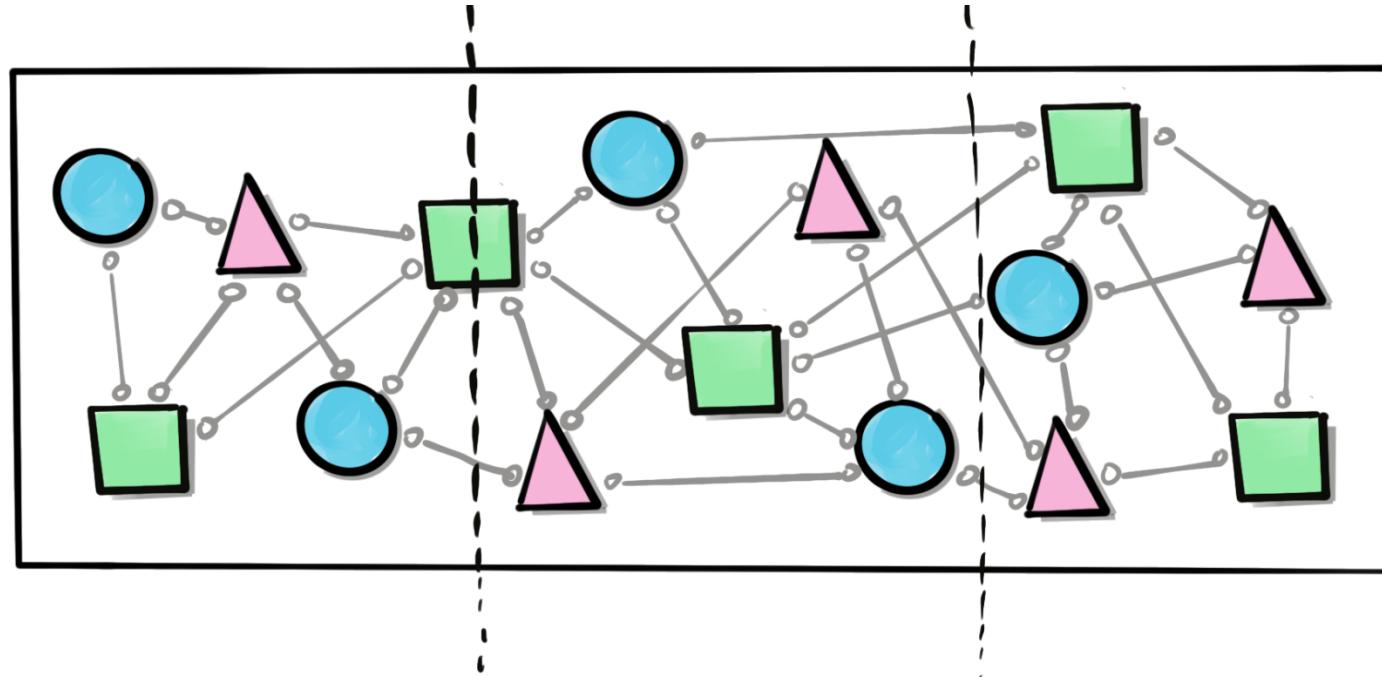
- Complex Queries
- Window Functions
- CTE
- Subqueries
- Reports



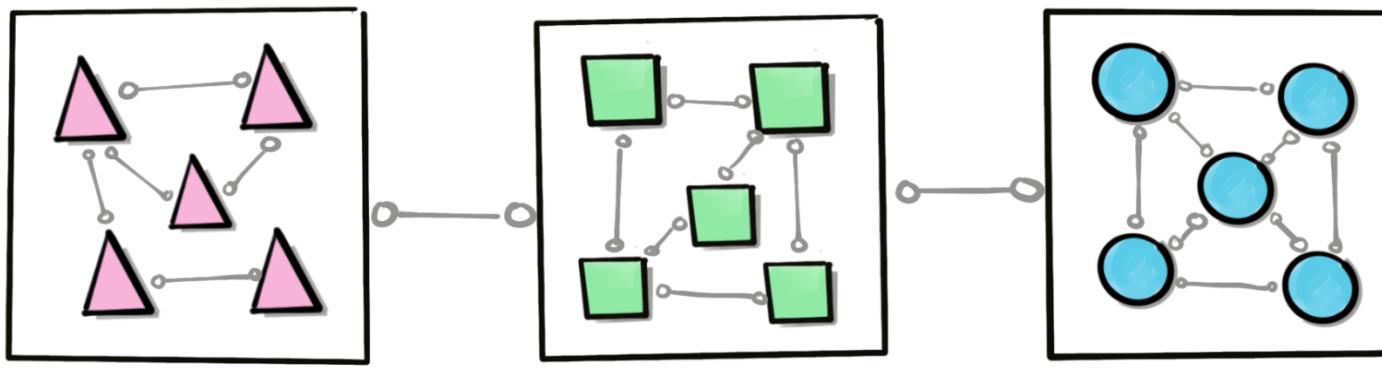




Without
SOC



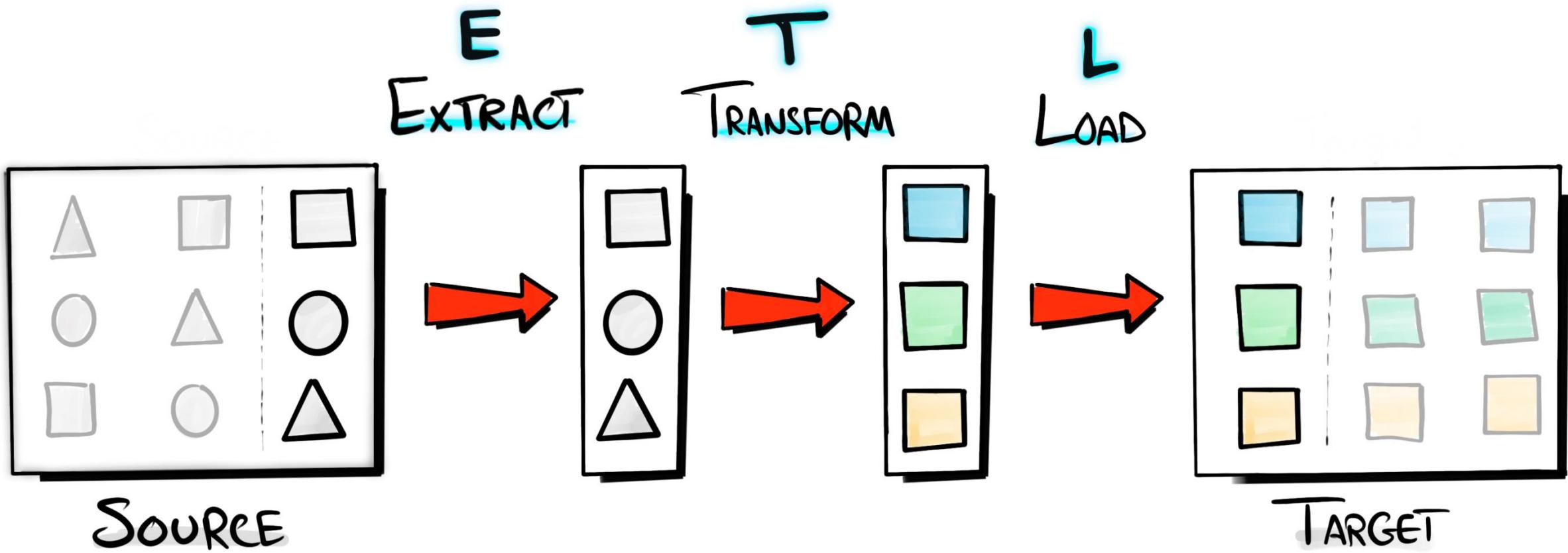
with
SOC



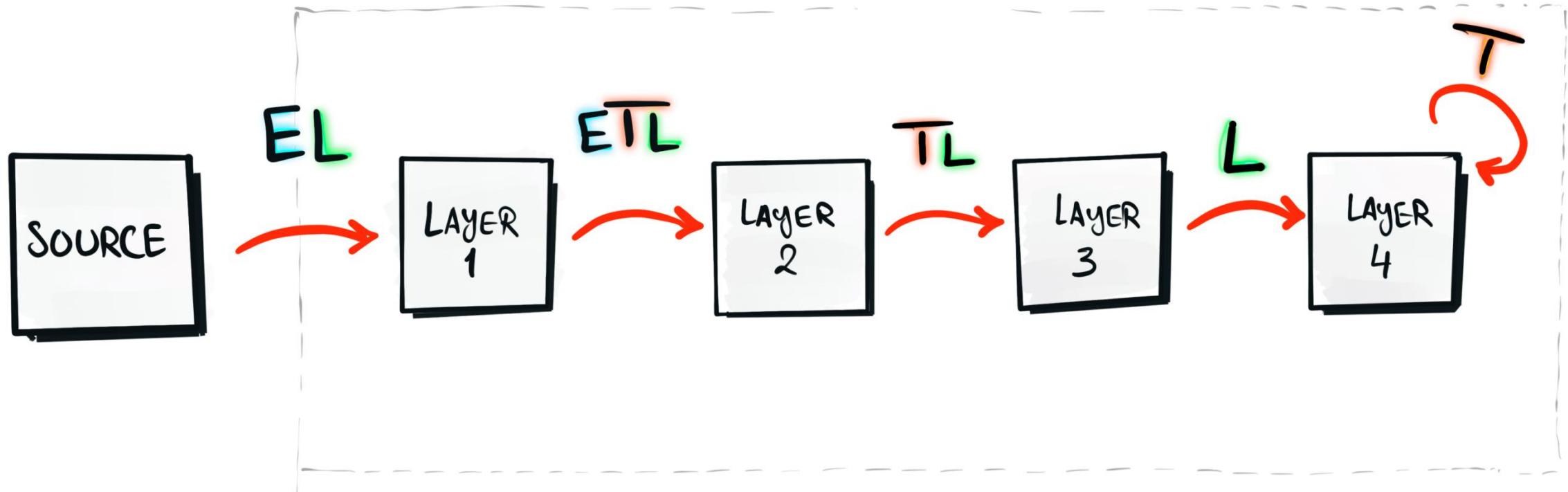
Module A

Module B

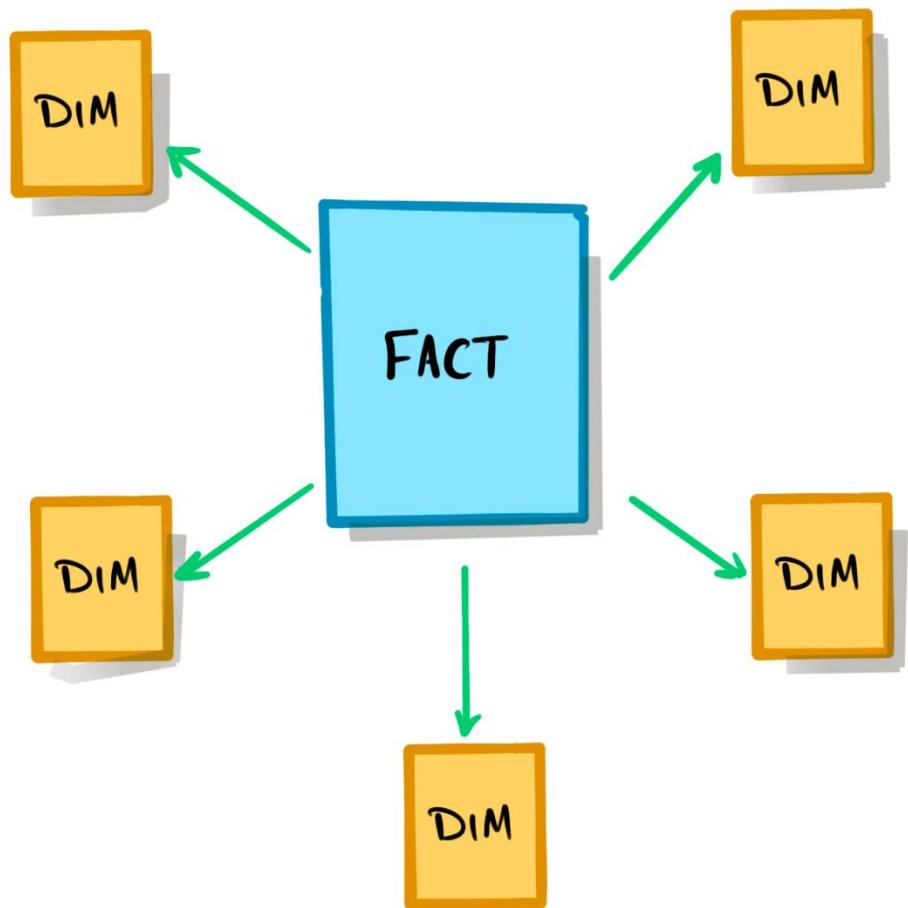
Module C



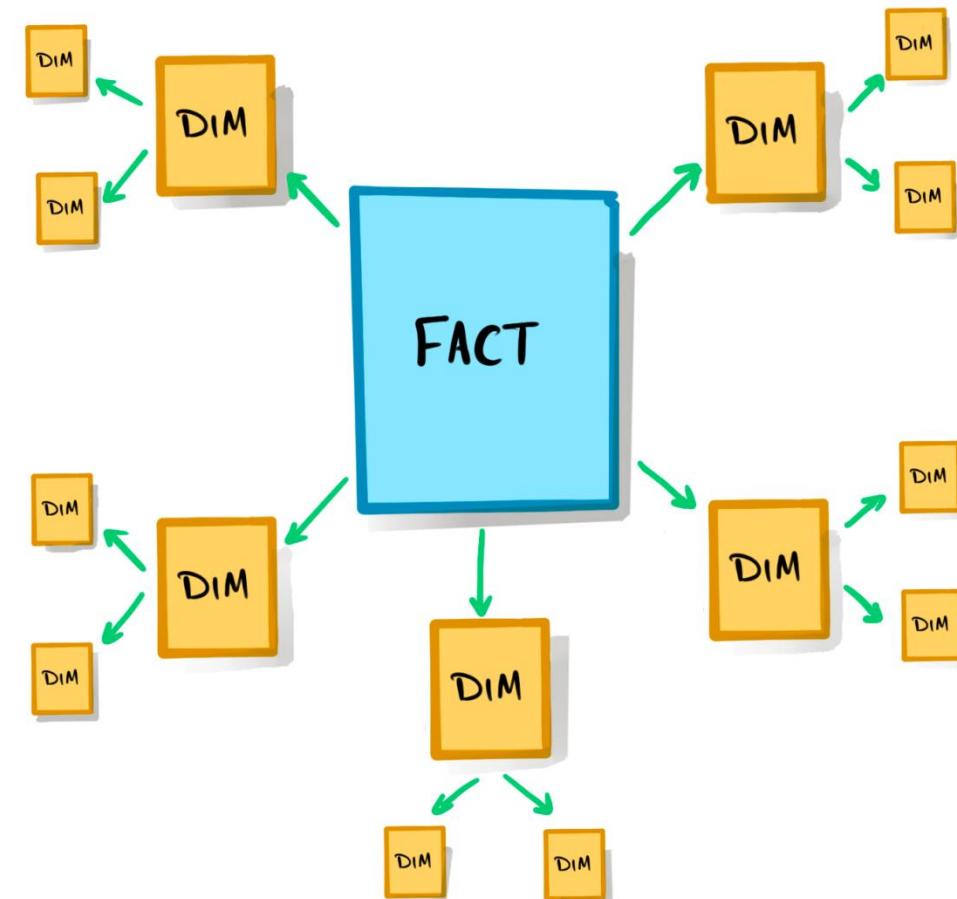
Data Architecture



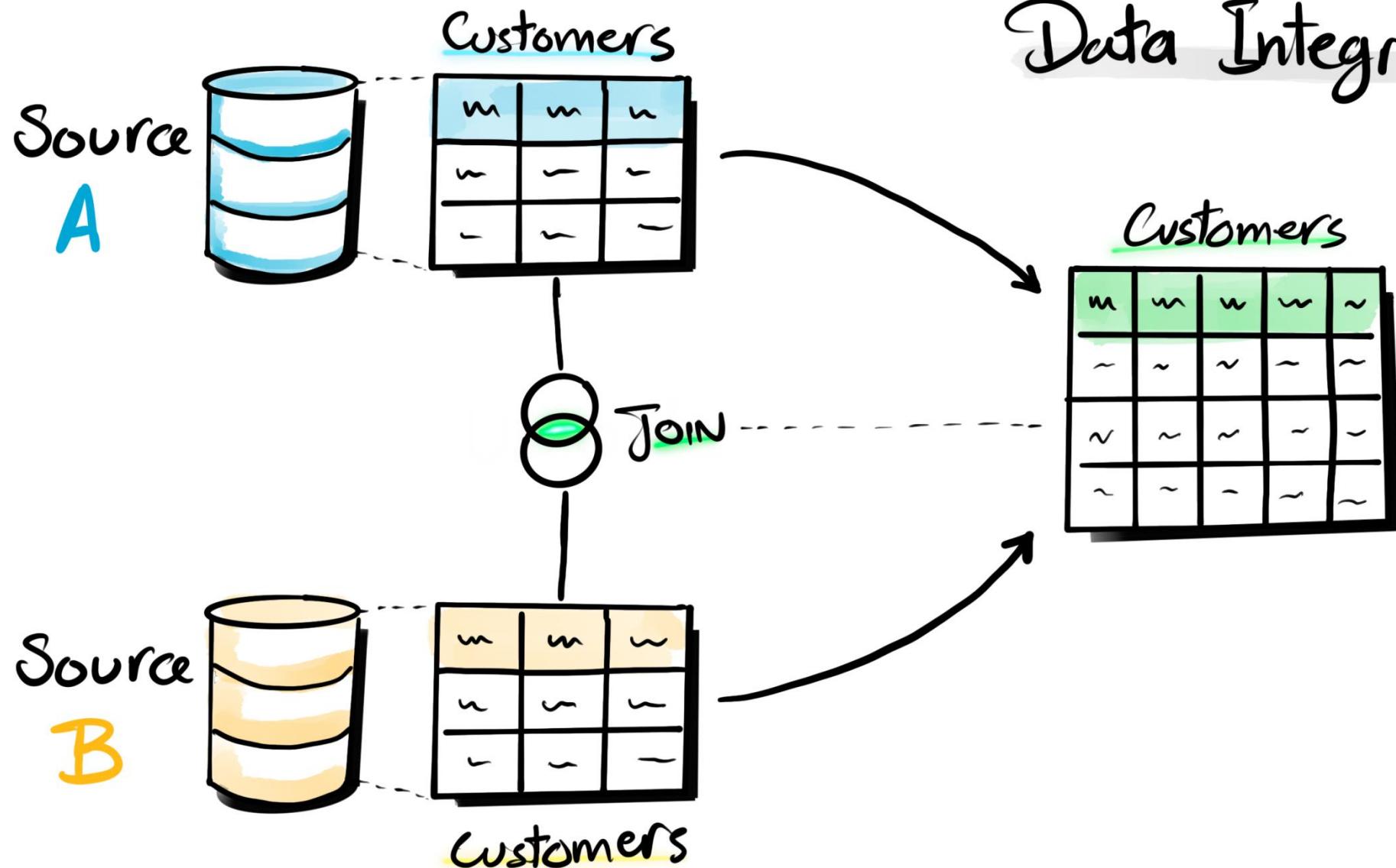
STAR SCHEMA

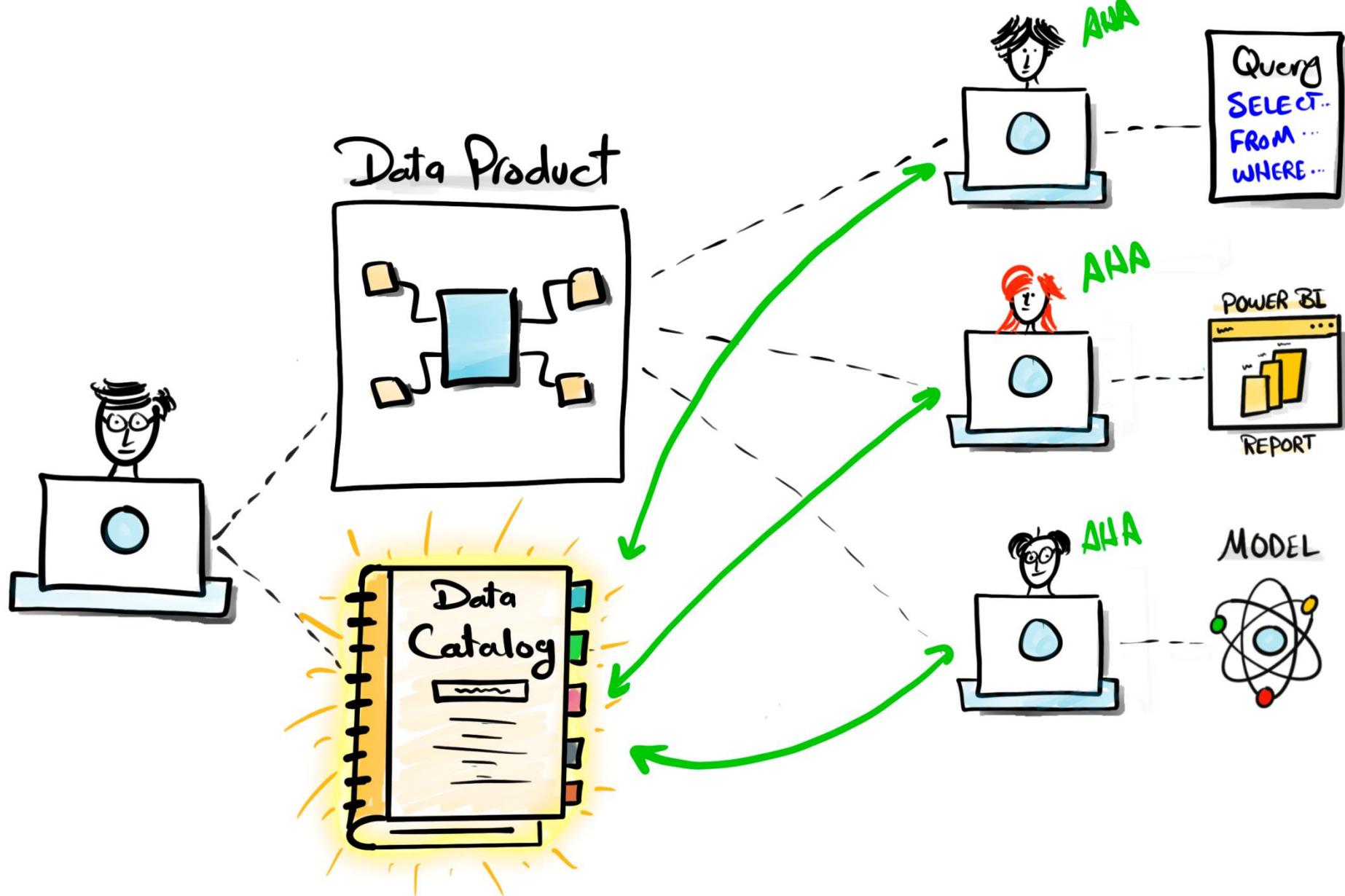


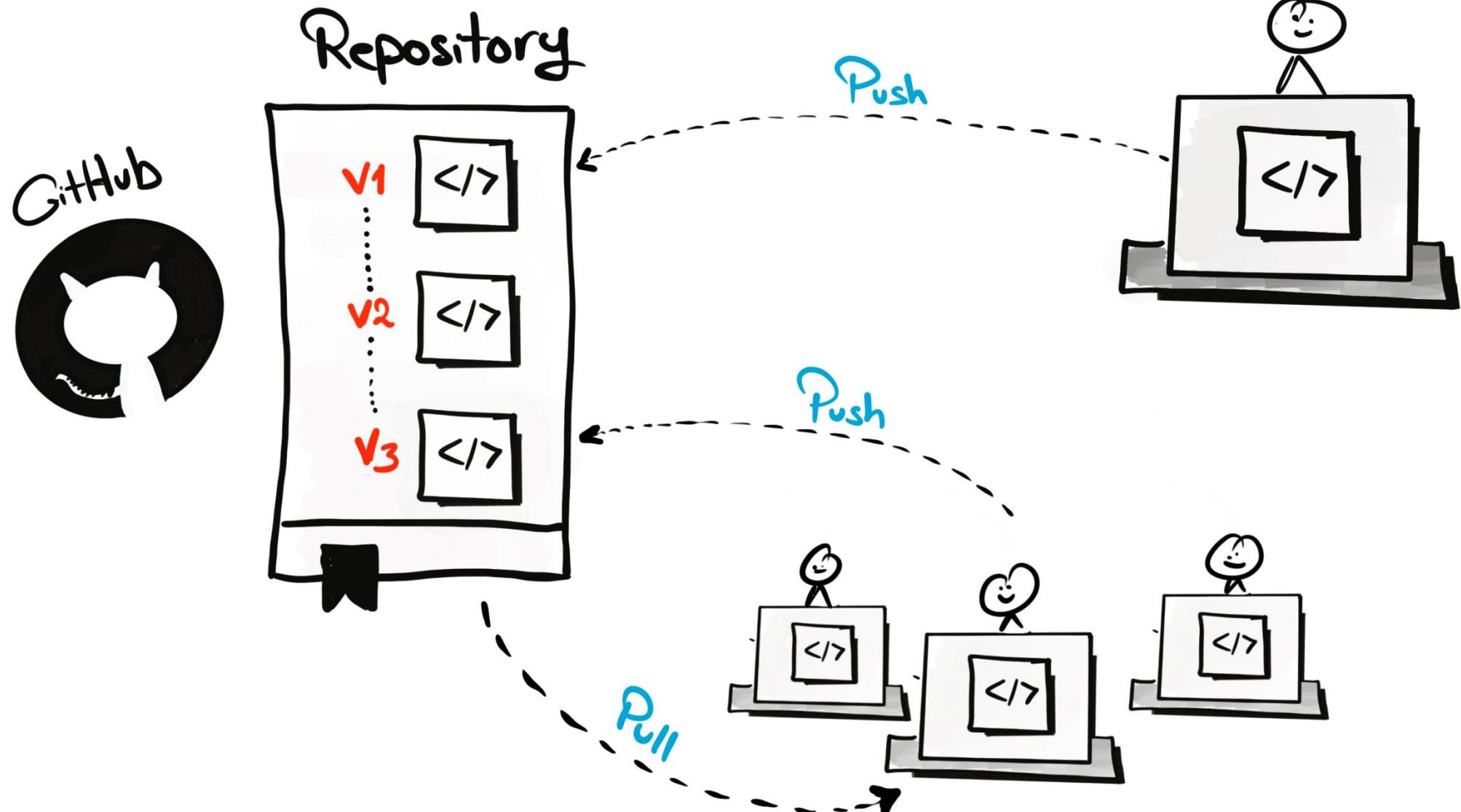
SNOWFLAKE SCHEMA

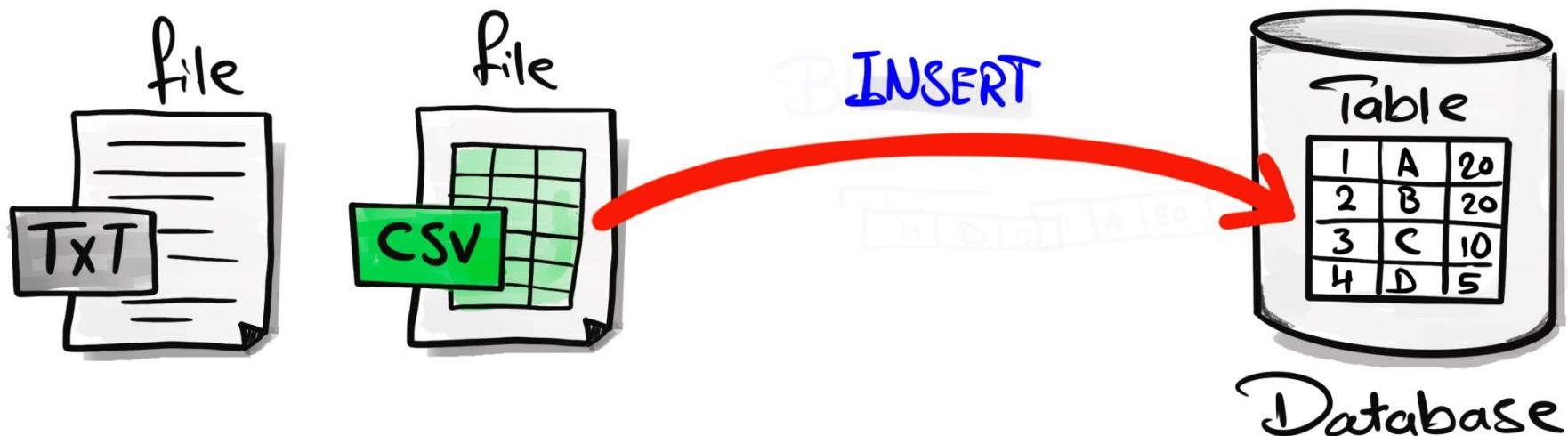
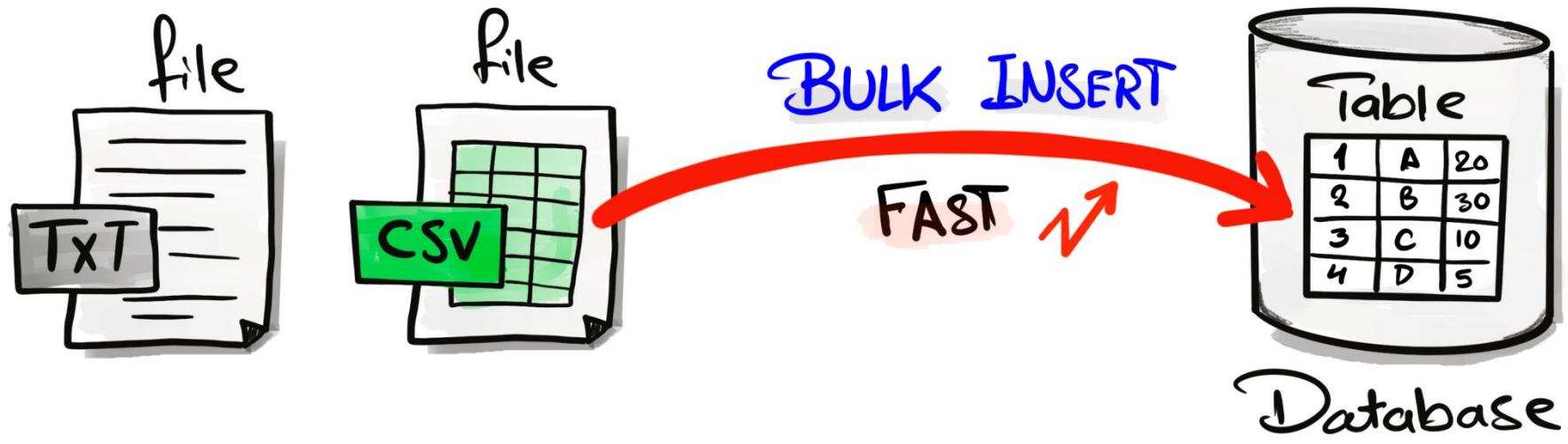


Data Integration









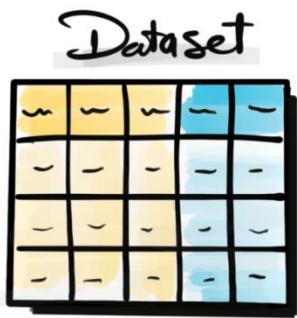


DATA WITH BARAA

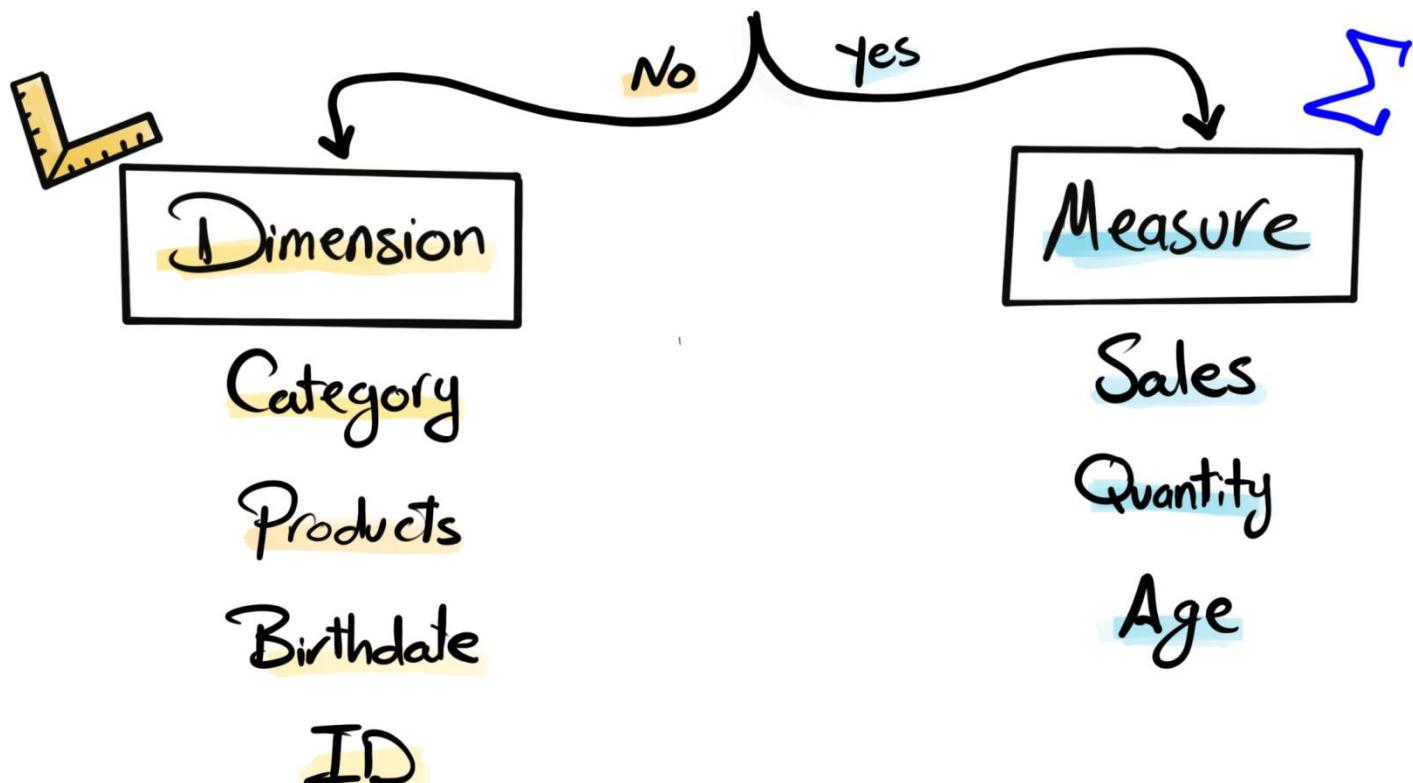
SQL DATA Analytics Project

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



A	C
B	D

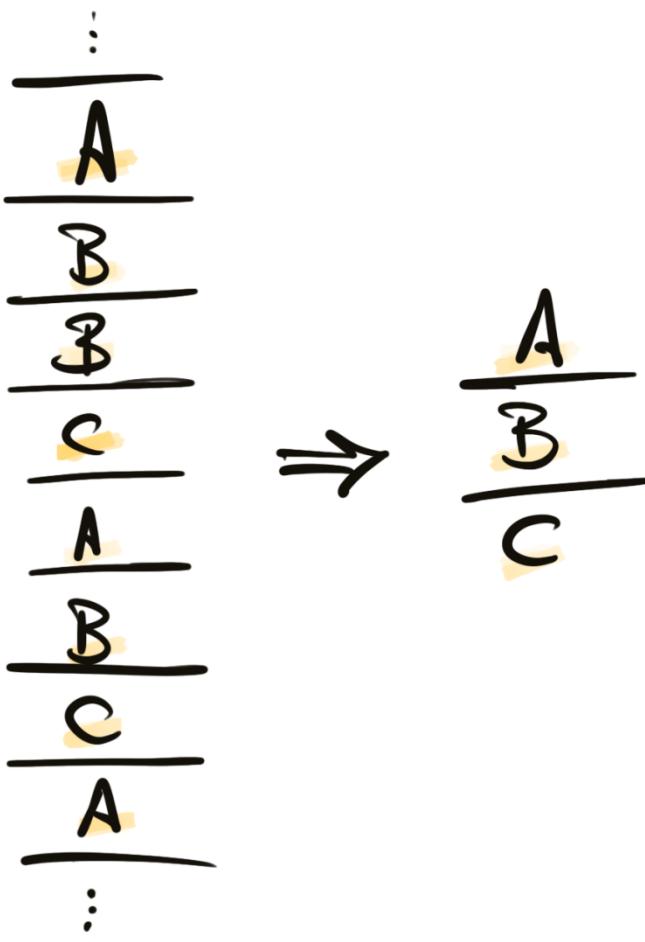
Dimensions Exploration

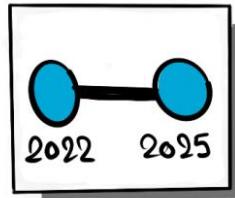
DISTINCT [Dimension]

DISTINCT Country

DISTINCT Category

DISTINCT Product





Date Exploration

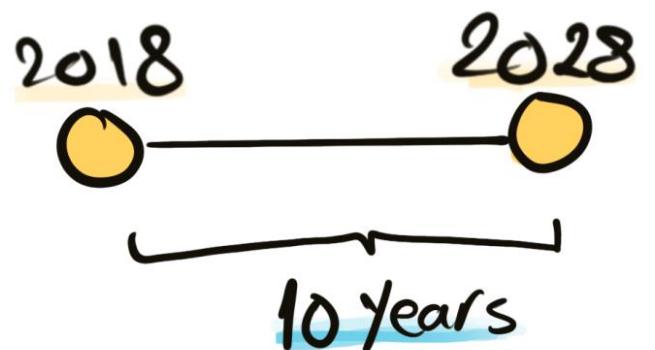
MIN/MAX [Date Dimension]

MIN Order_date

MAX Create_date

MIN Birthdate

2019
2020
2018
2018
2022
2023
2023
2028
2022



DATEDIFF

999

Measures Exploration

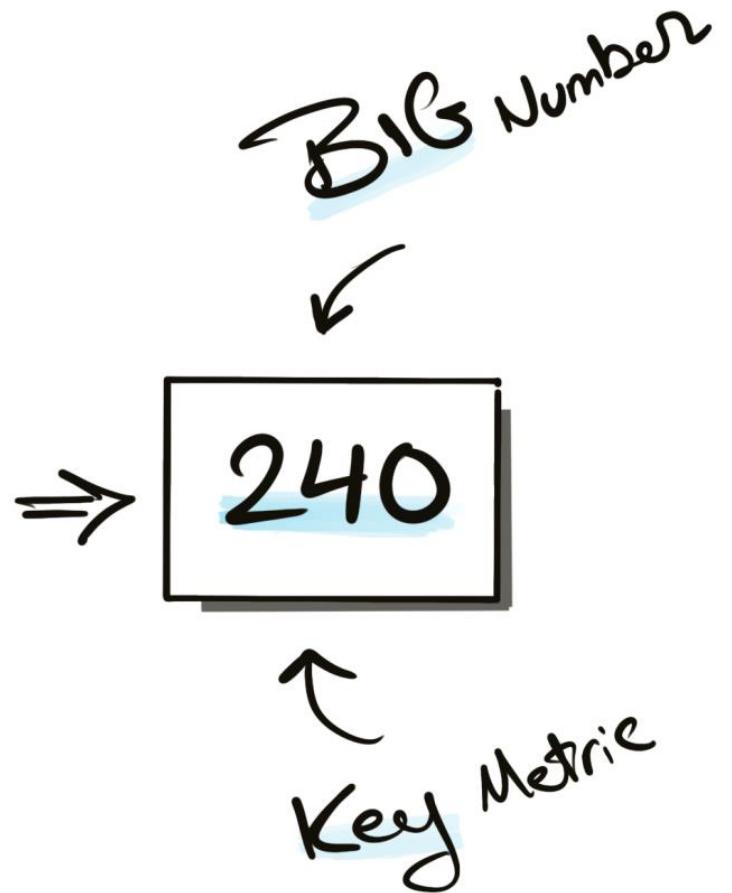
\sum [Measure]

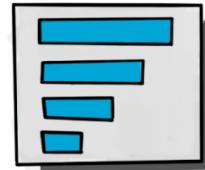
SUM (Sales)

AVG (Price)

SUM (Quantity)

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





Magnitude

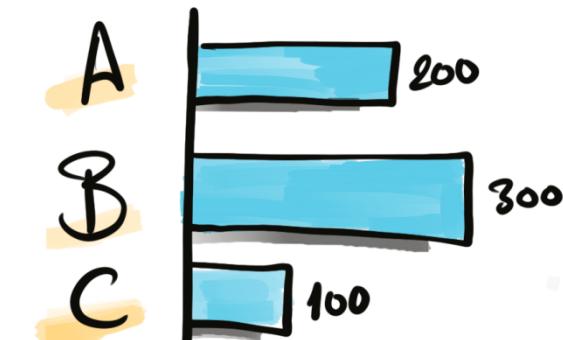
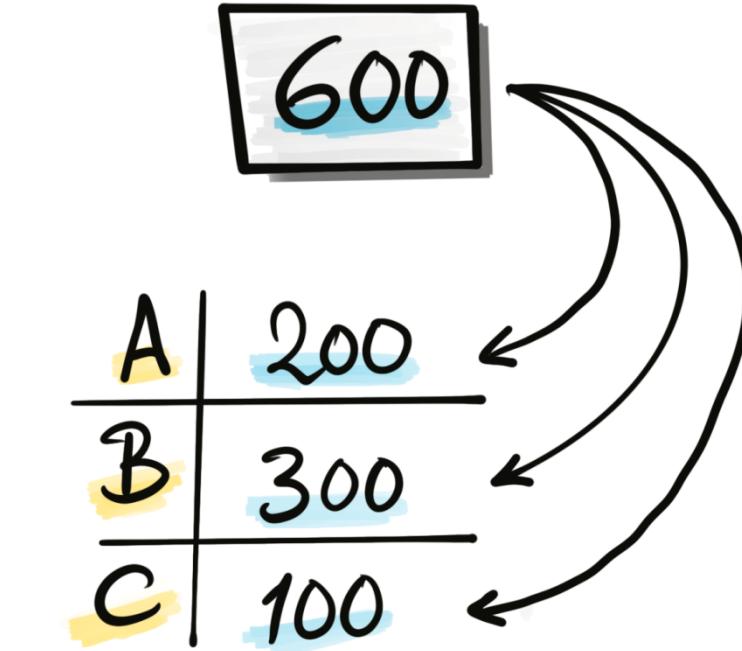
Σ [Measure] By [Dimension]

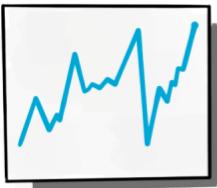
Total Sales By Country

Total Quantity By Category

Average Price By Product

Total Orders By Customer





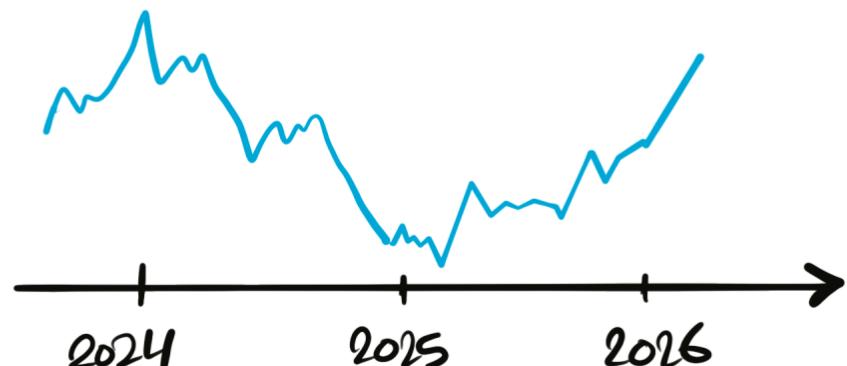
Change - Over - Time ~ Trends~

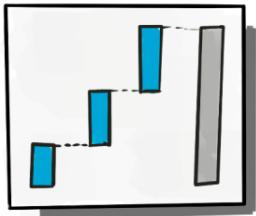
\sum [Measure] By [Date Dimension]

Total Sales By Year

Average Cost By Month

2024	300
2025	100
2026	200





Cumulative Analysis

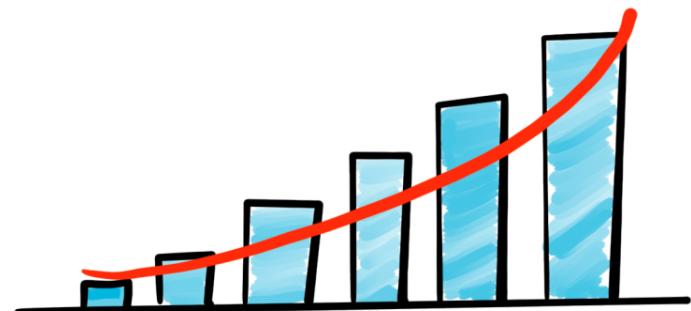
\sum [Cumulative Measure] By [Date Dimension]

Running Total Sales By Year

Moving Average of Sales By Month

2024	300	300
2025	100	400
2026	200	600

A hand-drawn diagram illustrates the concept of cumulative analysis. A blue arrow labeled "Cumulative" points diagonally down and to the right across the table. Red arrows show the addition of values from previous years to the current year's value. For example, in 2025, a red arrow adds the value from 2024 (300) to the current value (100), resulting in a running total of 400.



WINDOW FUNCTIONS



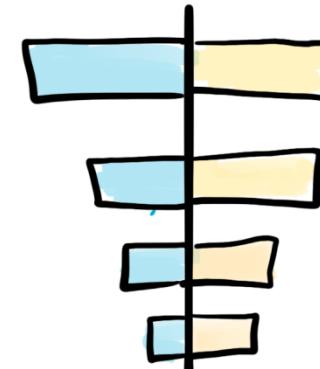
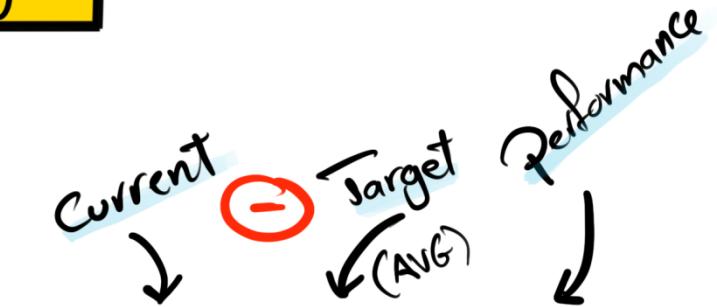
Performance Analysis

Current [Measure] - Target [Measure]

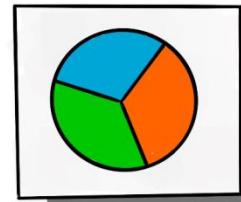
Current Sales - Average Sales

Current year Sales - Previous Year Sales

Current Sales - lowest Sales



WINDOW FUNCTIONS



Part-to-Whole

Proportional Analysis

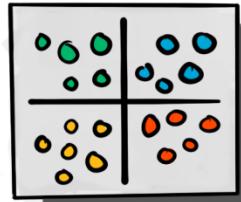
$([\text{Measure}] / \text{Total [Measure]}) * 100$ By [Dimension]

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

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

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





Data Segmentation

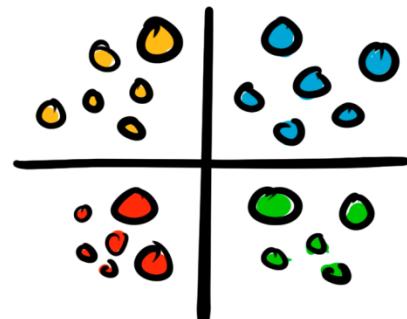
[Measure] By [Measure]

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