



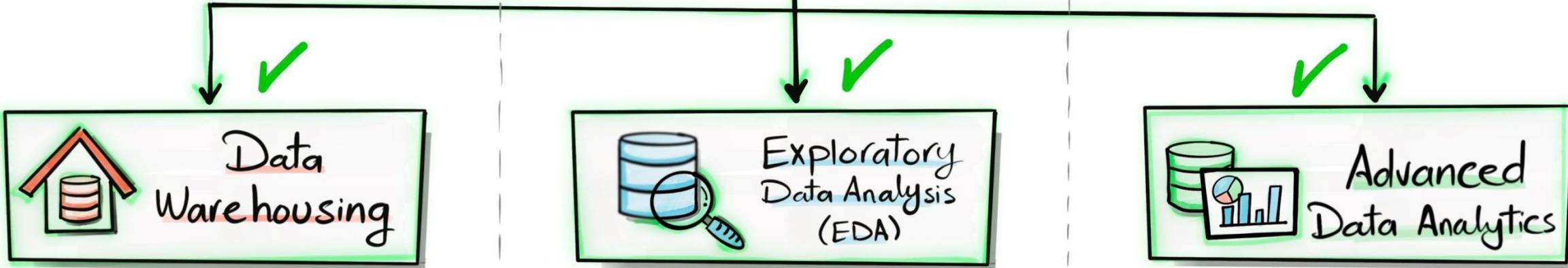
# SQL DATA WARHOUESE

Project





## SQL Projects



Organize, Structure, Prepare

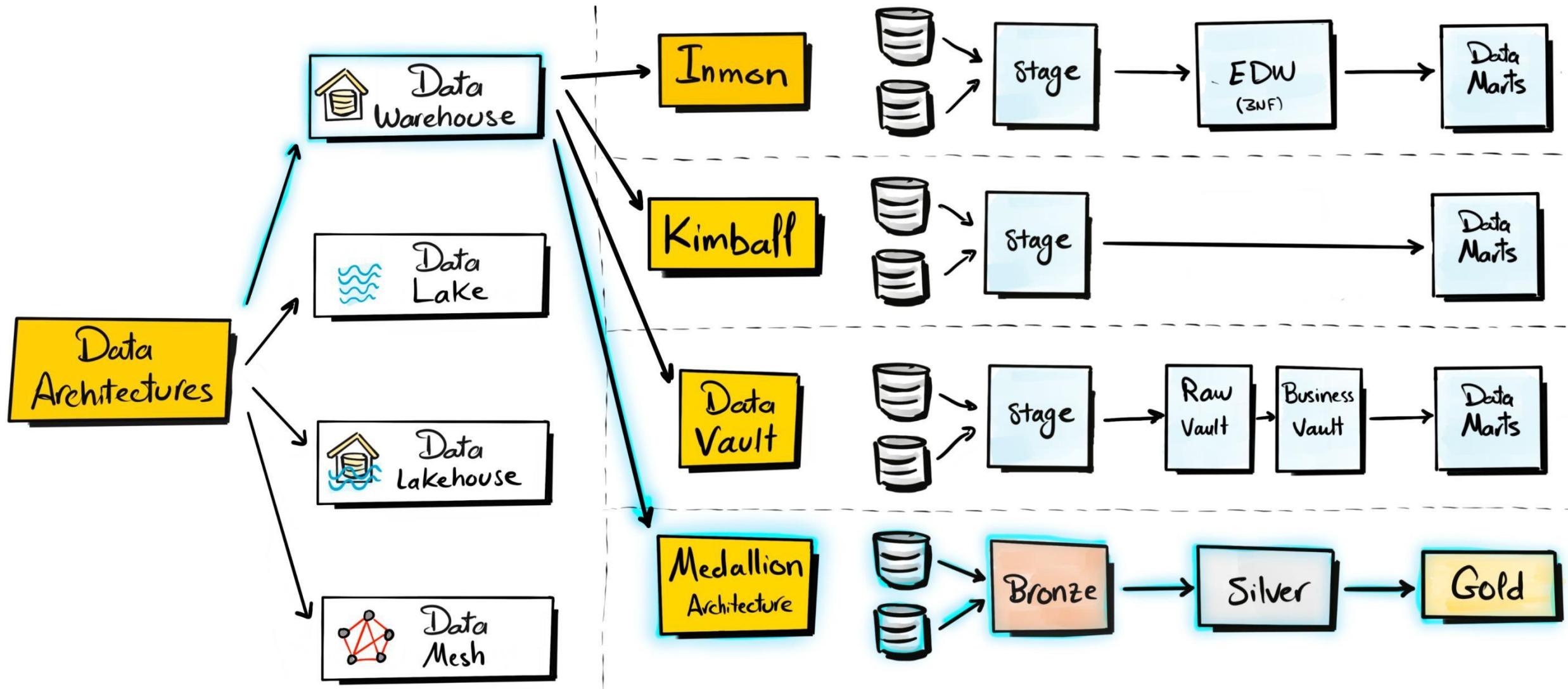
- ETL/ELT Processing
- Data Architecture
- Data Integration
- Data Cleansing
- Data Load
- Data Modeling

Understand Data

- Basic Queries
- Data Profiling
- Simple Aggregations
- Subquery

Answer Business Questions

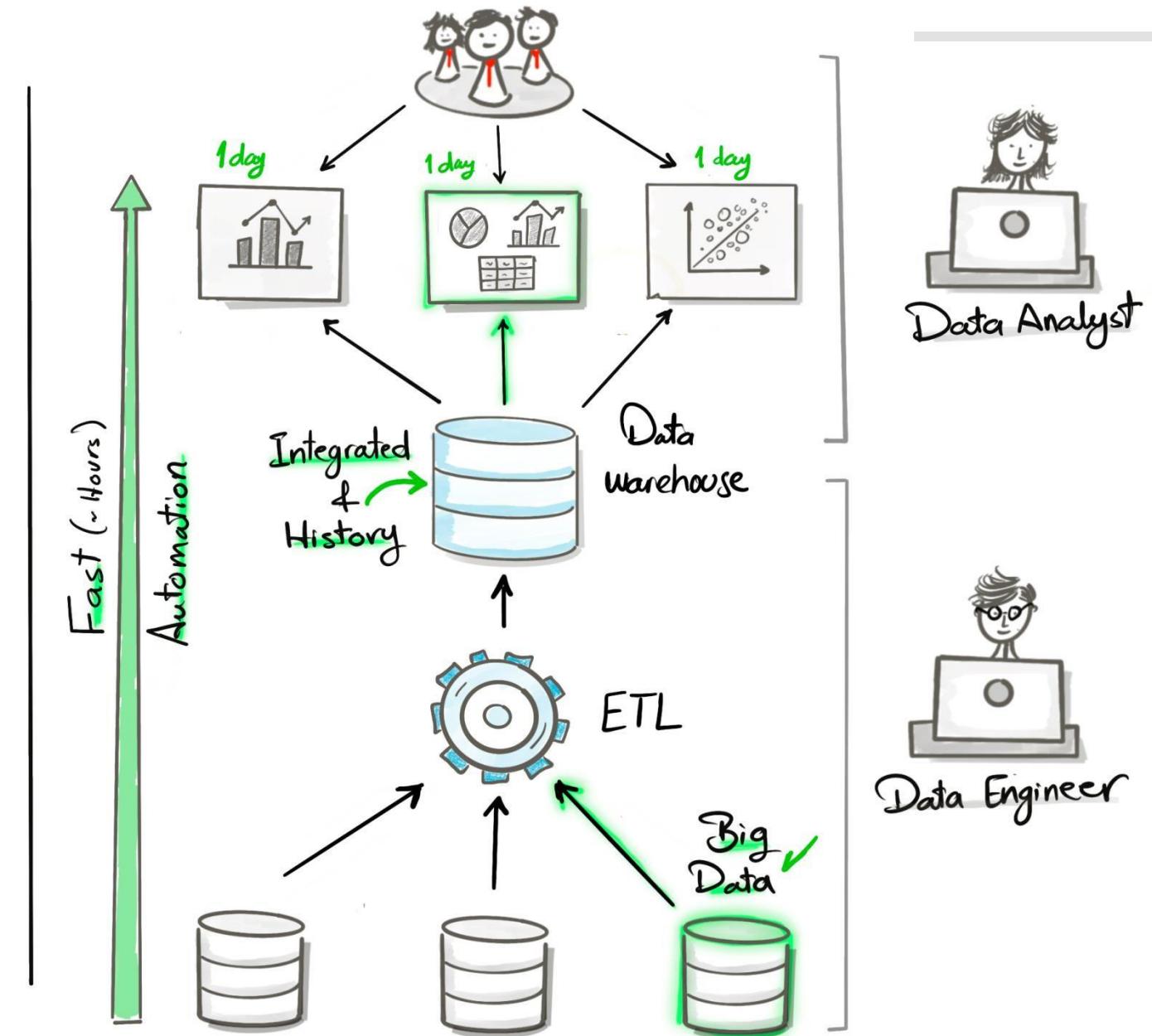
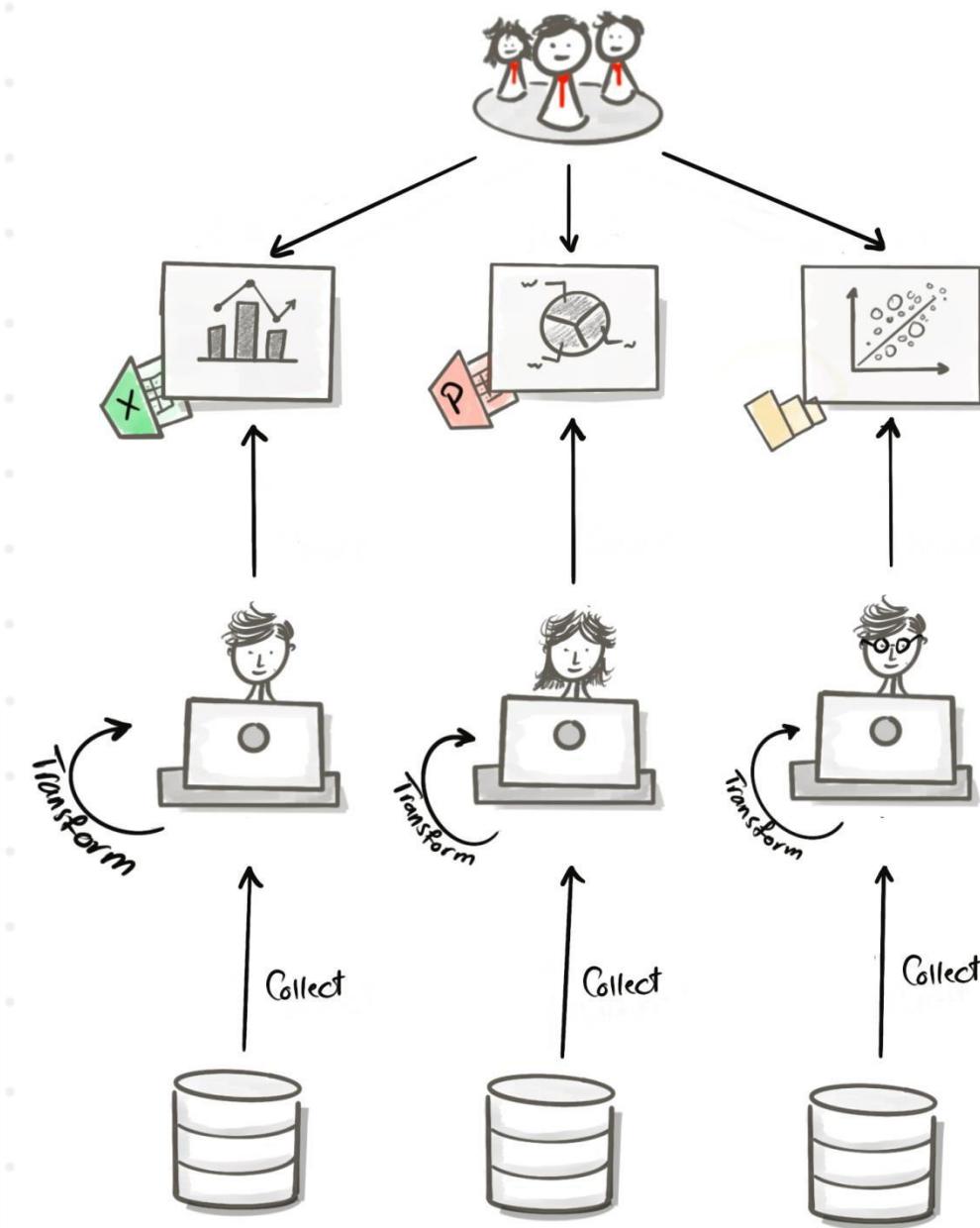
- Complex Queries
- Window Functions
- CTE
- Subqueries
- Reports

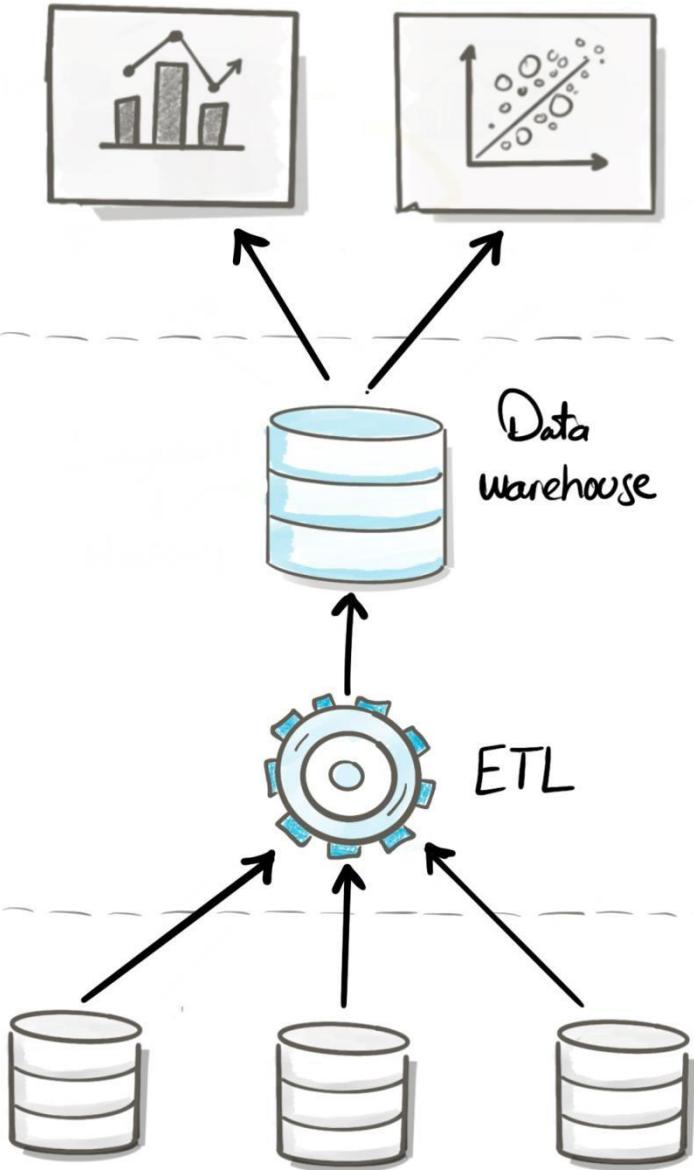




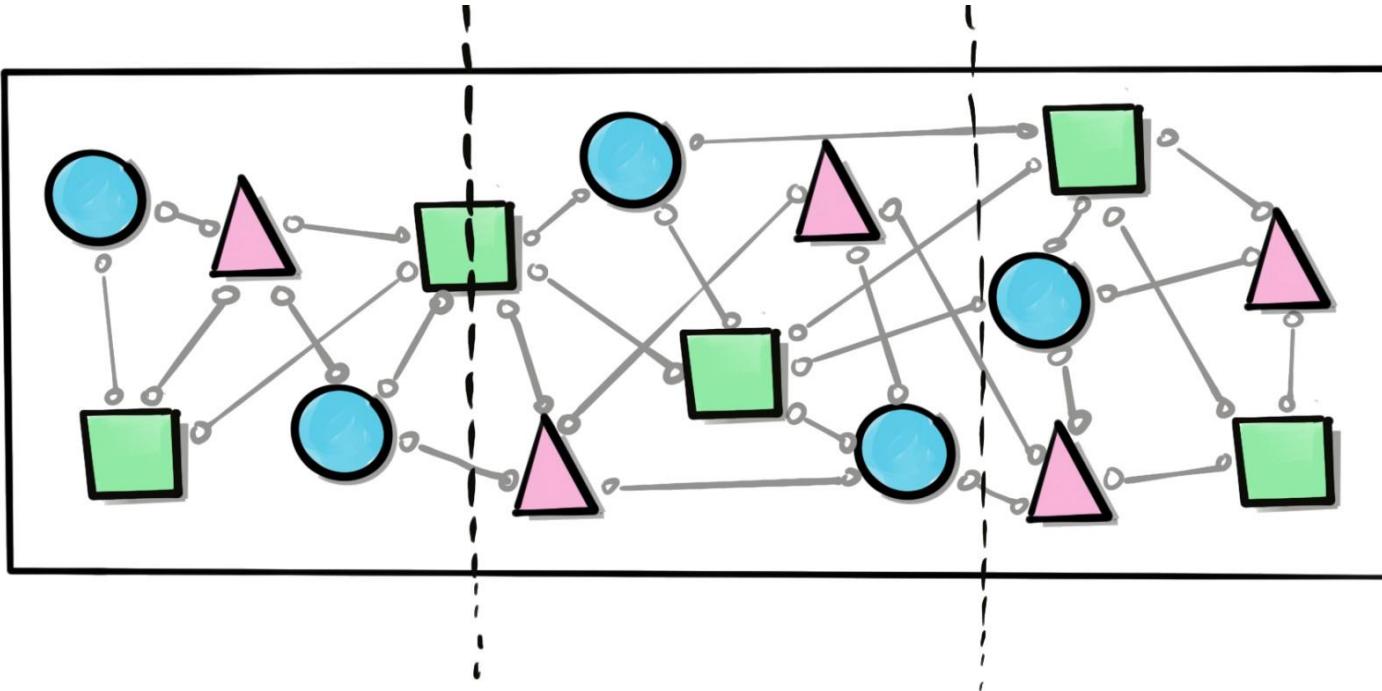
## Bronze Layer

Definition	Raw, unprocessed data as-is from sources	Clean & standardized data	Business-Ready data
Objective	Traceability & Debugging	(Intermediate Layer) Prepare Data for Analysis	Provide data to be consumed for reporting & Analytics
Object Type	Tables	Tables	Views
Load Method	Full Load (Truncate & Insert)	Full Load (Truncate & Insert)	None
Data Transformation	None (as-is)	<ul style="list-style-type: none"><li>- Data Cleaning</li><li>- Data Standardization</li><li>- Data Normalization</li><li>- Derived Columns</li><li>- Data Enrichment</li></ul>	<ul style="list-style-type: none"><li>- Data Integration</li><li>- Data Aggregation</li><li>- Business Logic &amp; Rules</li></ul>
Data Modeling	None (as-is)	None (as-is)	<ul style="list-style-type: none"><li>- Start Schema</li><li>- Aggregated Objects</li><li>- Flat Tables</li></ul>
Target Audience	- Data Engineers	<ul style="list-style-type: none"><li>- Data Analysts</li><li>- Data Engineers</li></ul>	<ul style="list-style-type: none"><li>- Data Analysts</li><li>- Business Users</li></ul>

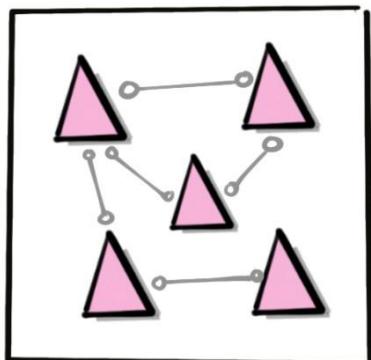




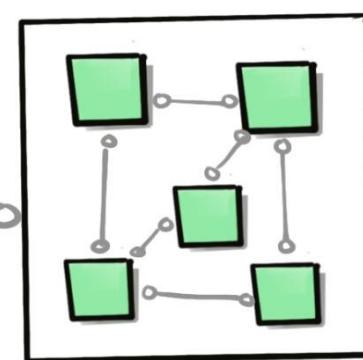
Without  
SOC



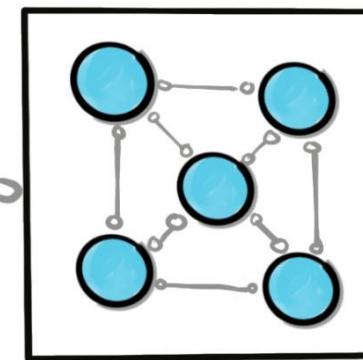
with  
SOC



Module A



Module B

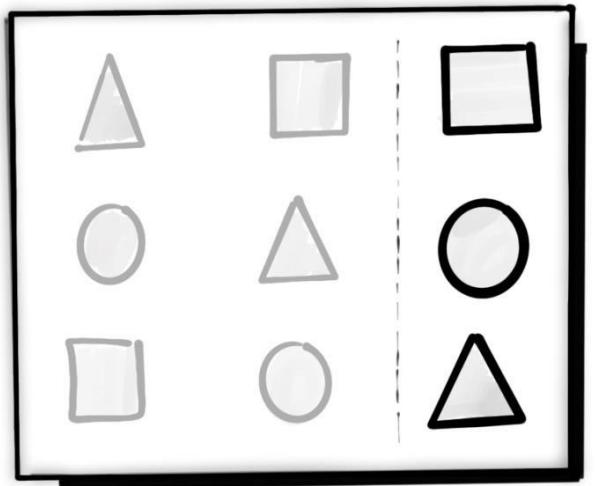


Module C

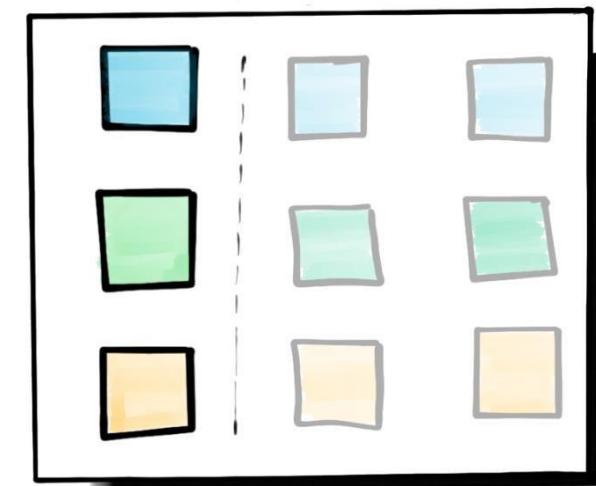
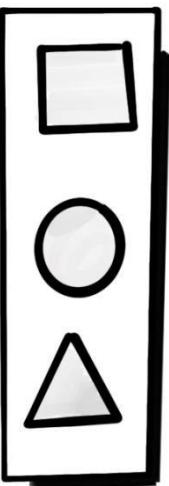
**E**  
EXTRACT

**T**  
TRANSFORM

**L**  
LOAD

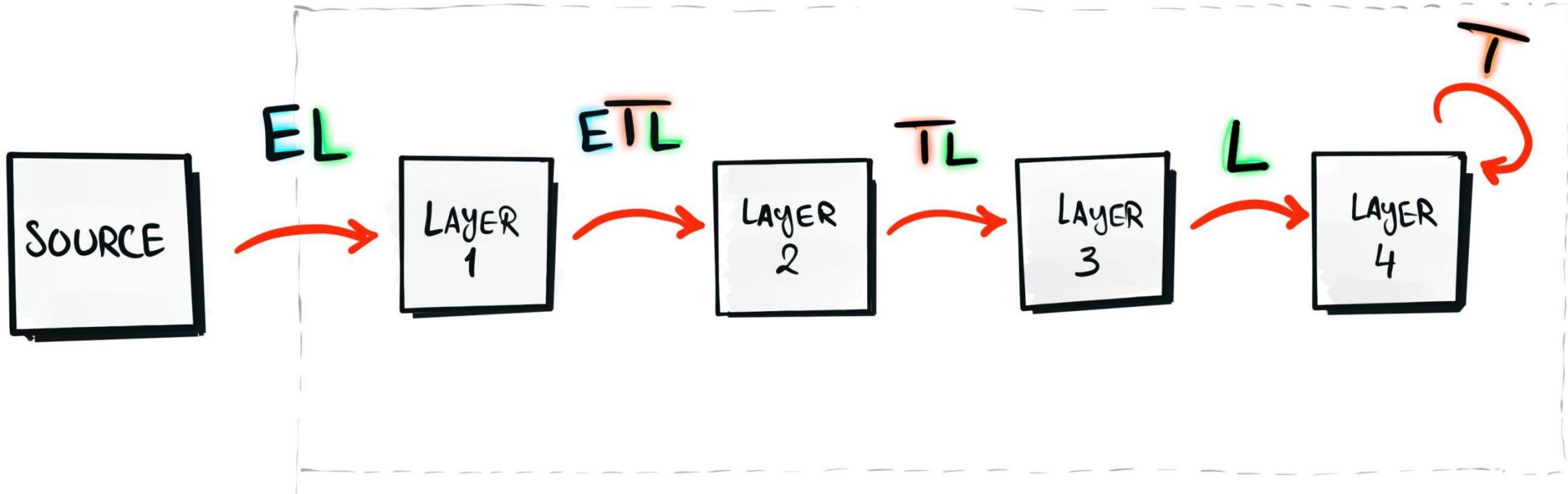


SOURCE

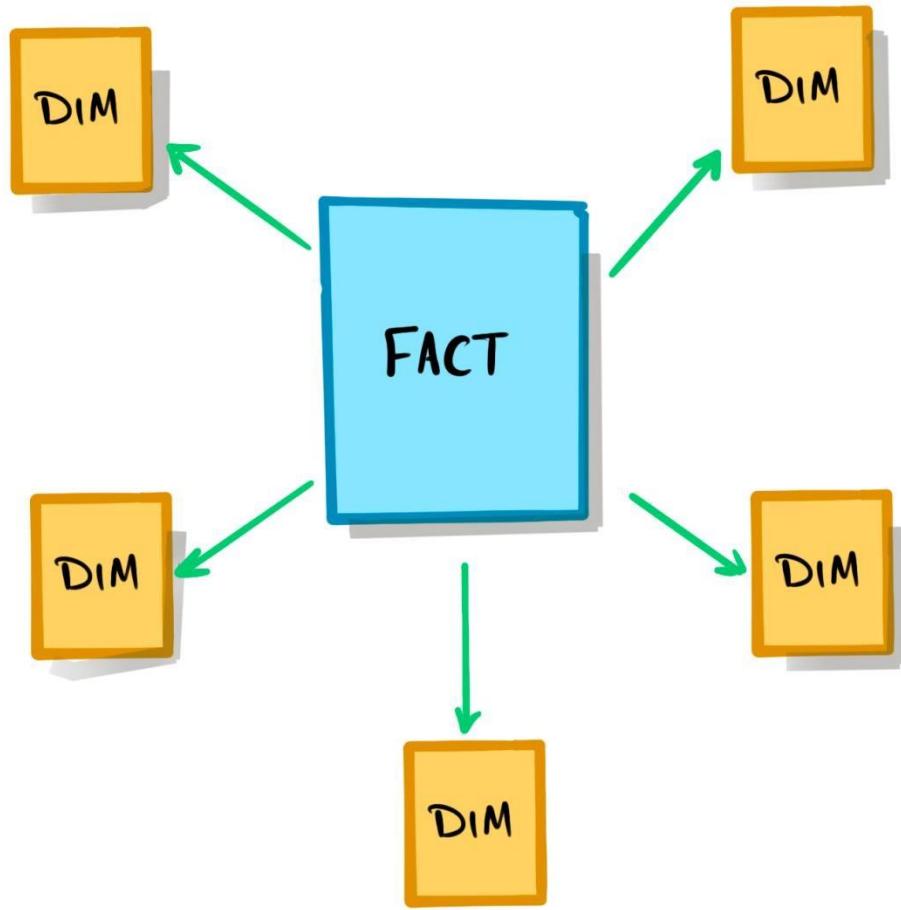


TARGET

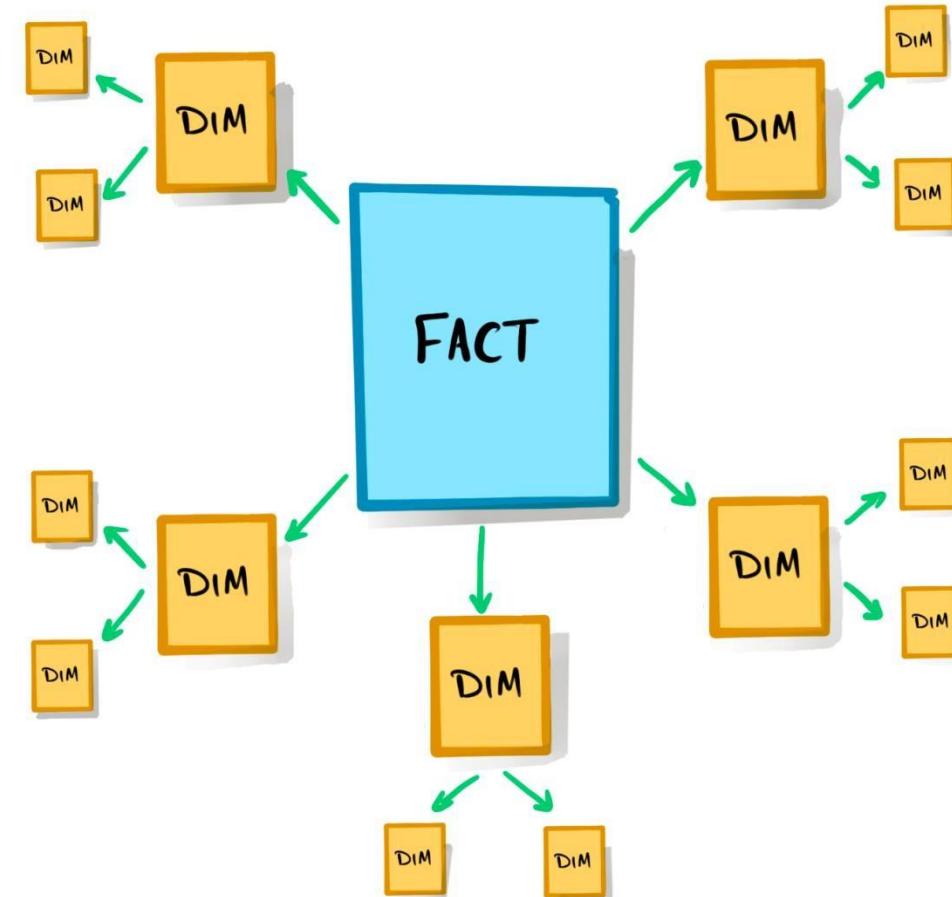
## Data Architecture



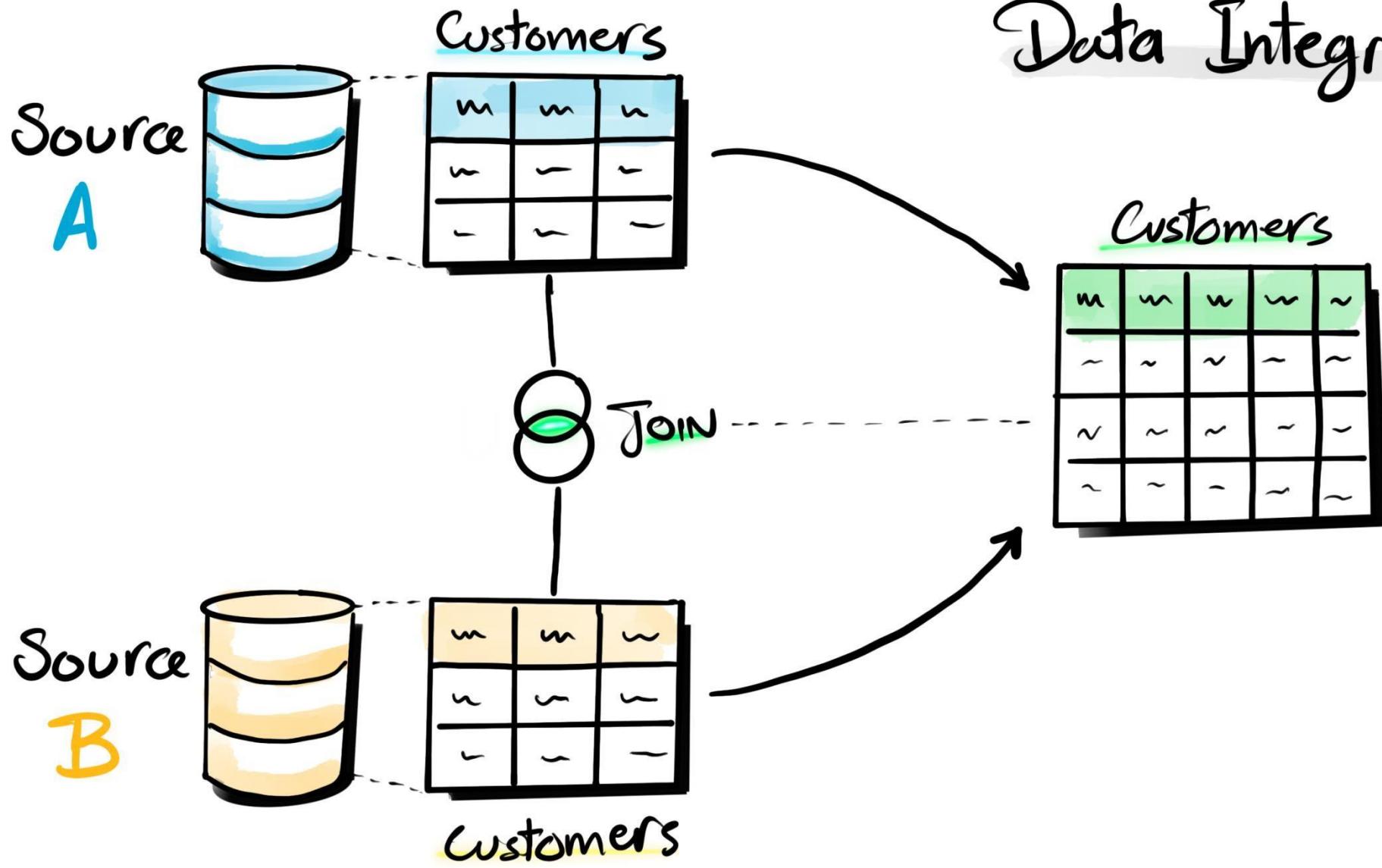
## STAR SCHEMA

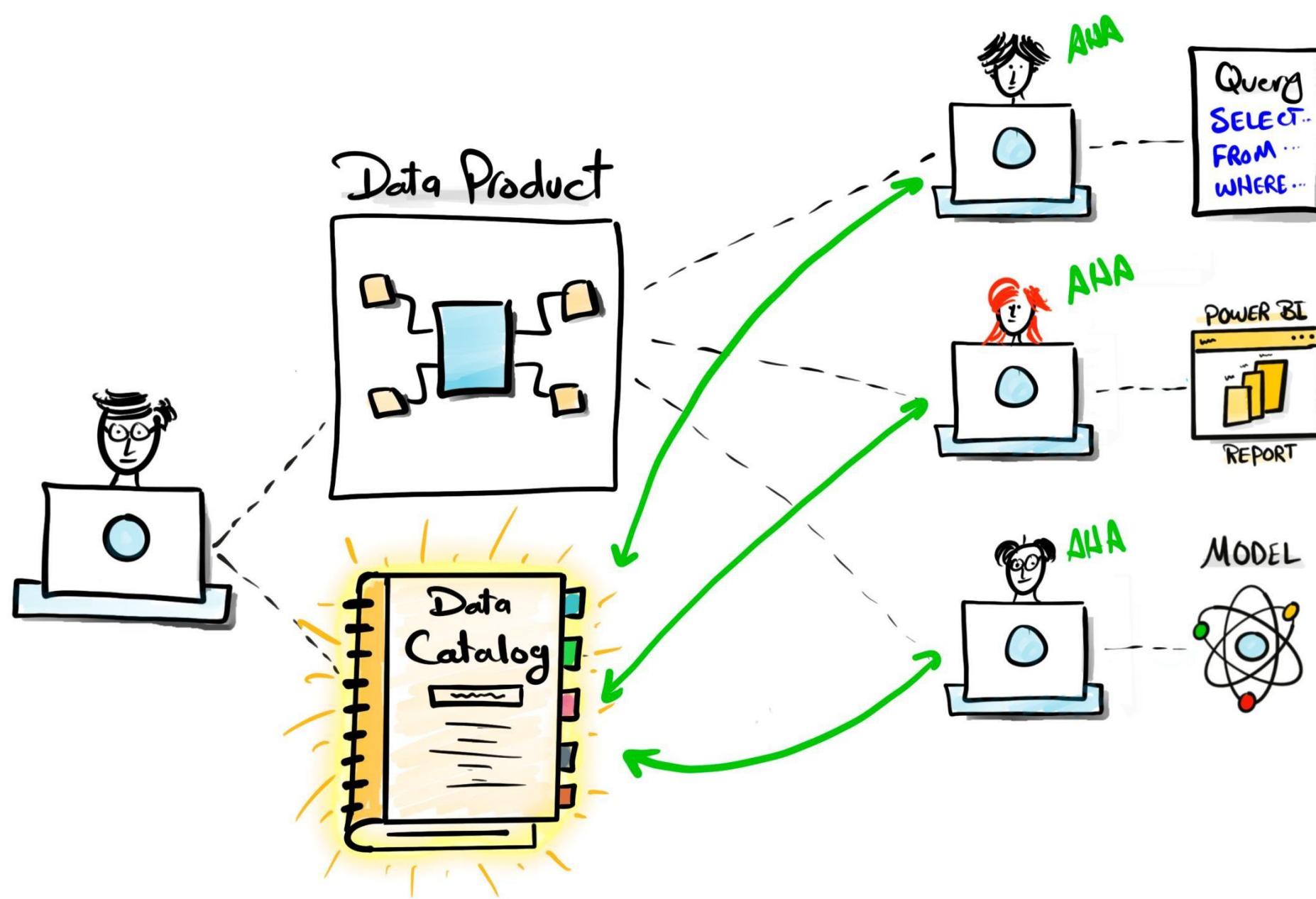


## SNOWFLAKE SCHEMA



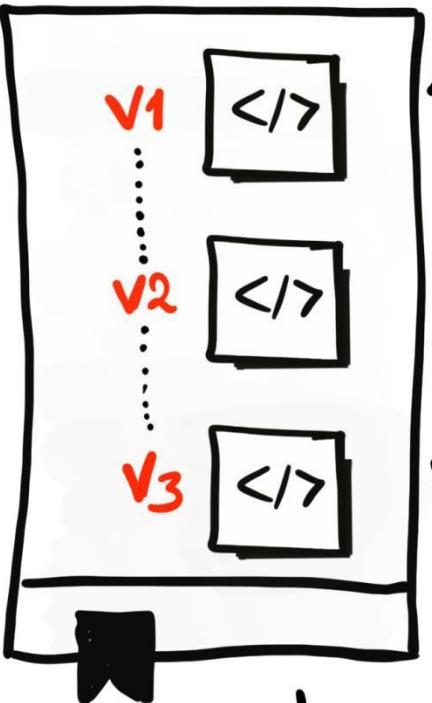
# Data Integration





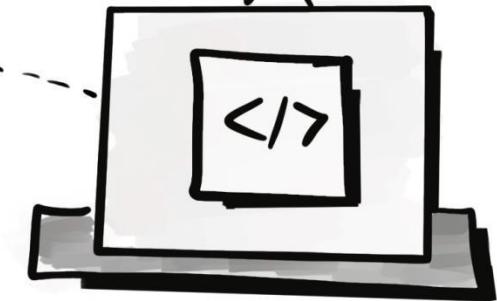


# Repository

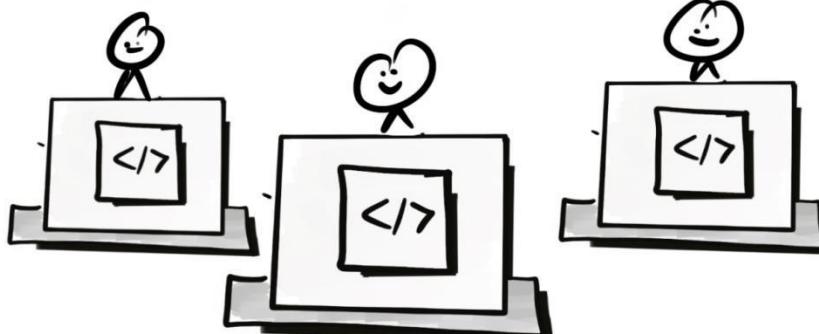


Push

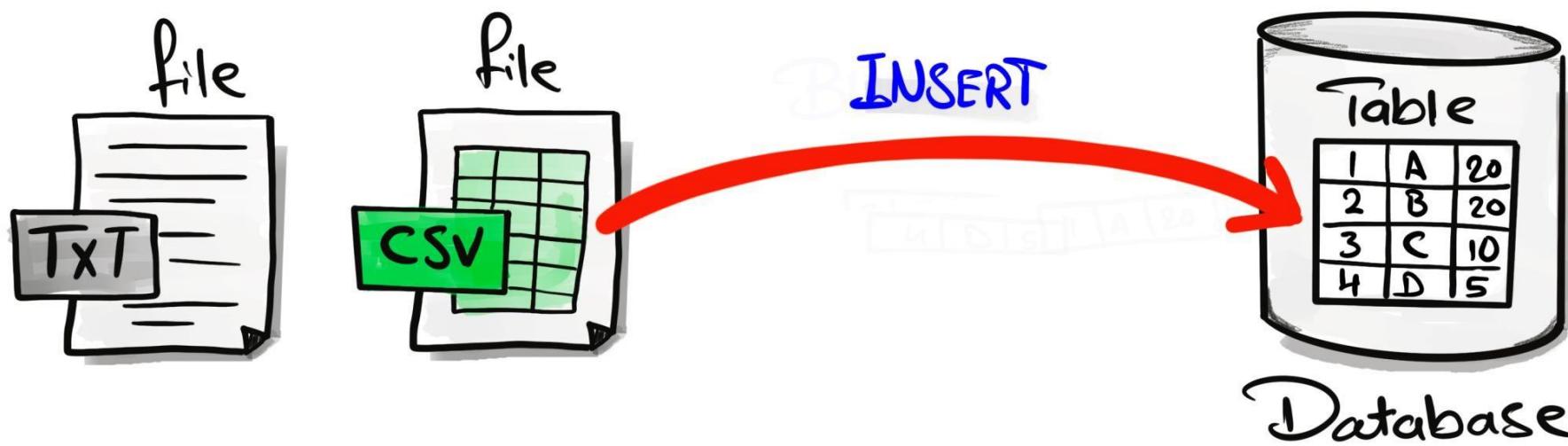
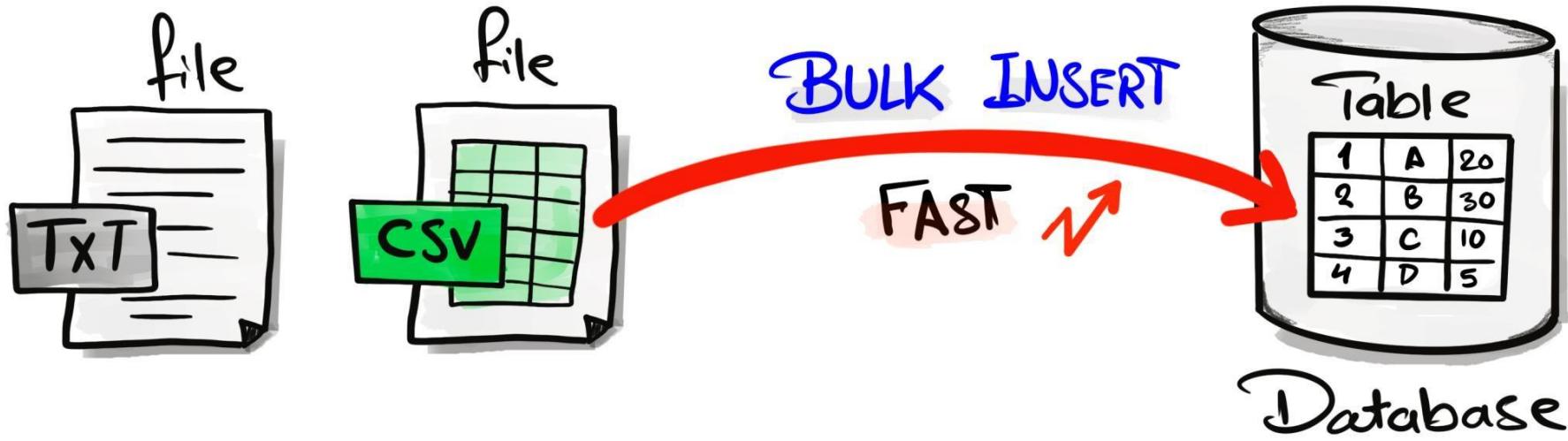
you



Push



Push

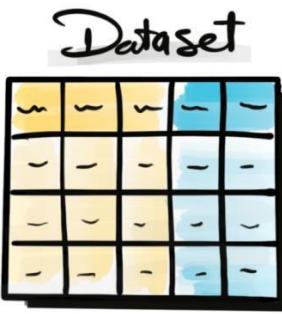




# SQL DATA Analytics

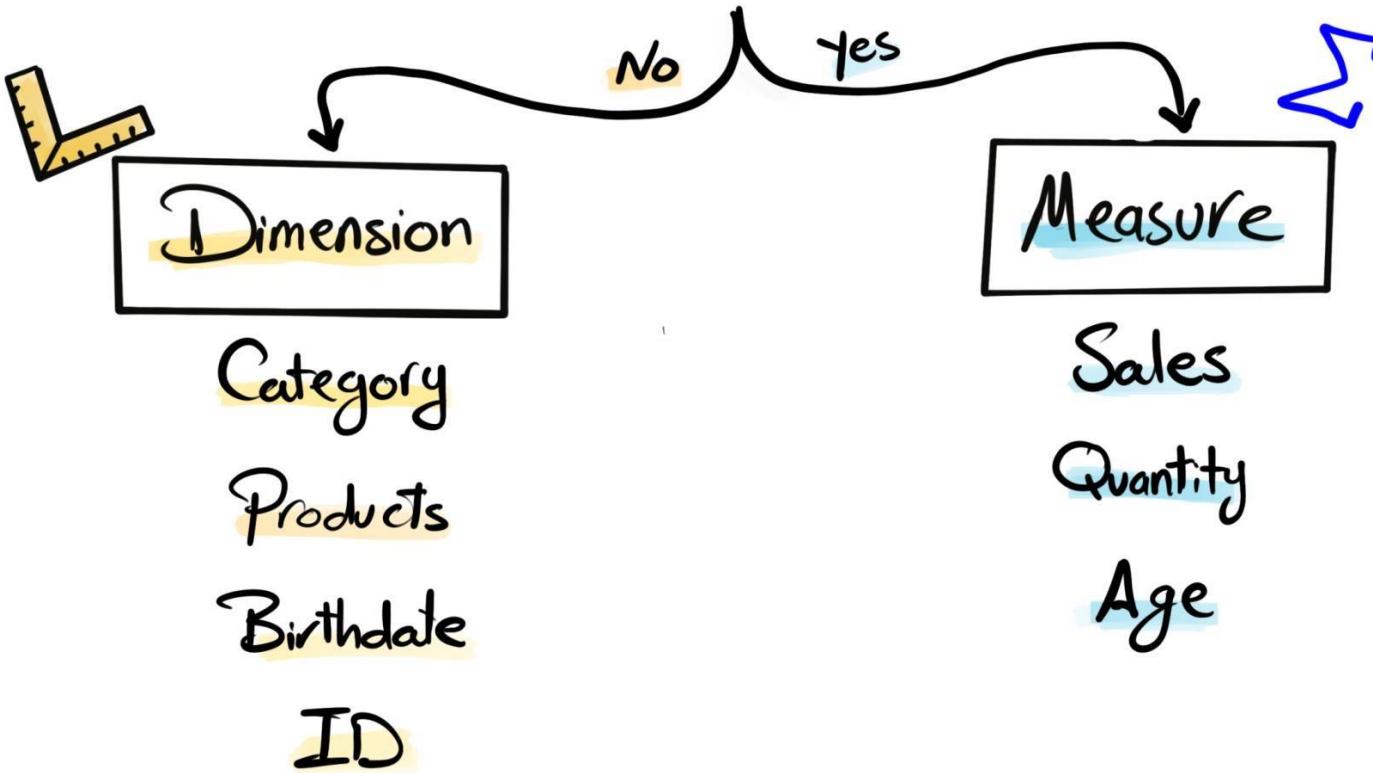
## Project





Is it Numeric ?

& Does it make Sense to aggregate ?



A  
C  
B  
D

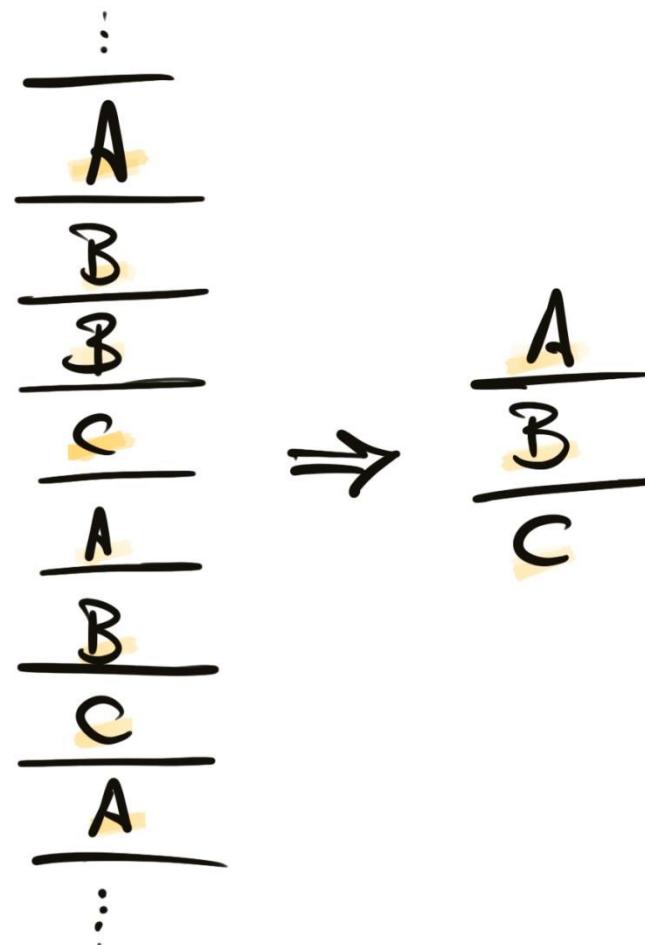
## Dimensions Exploration

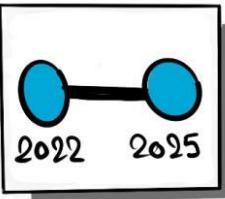
DISTINCT [Dimension]

DISTINCT Country

DISTINCT Category

DISTINCT Product





## Date Exploration

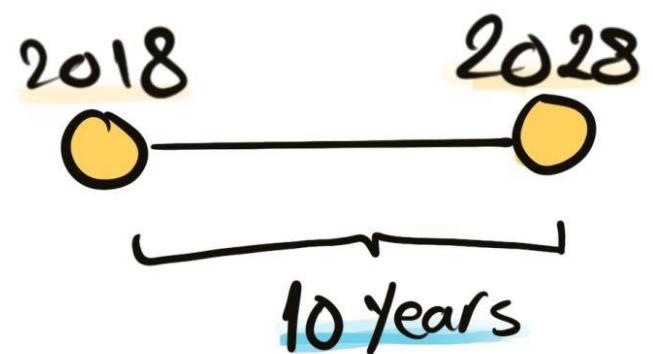
### MIN/MAX [Date Dimension]

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)

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



240

BIG Number

Key Metric



## Magnitude

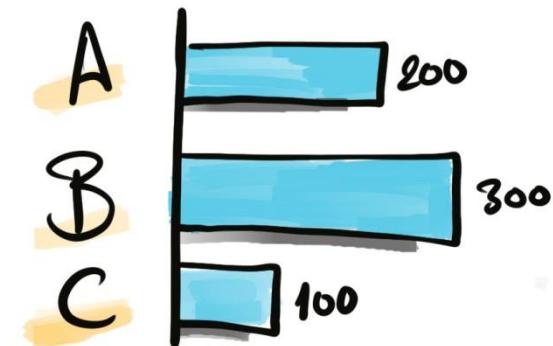
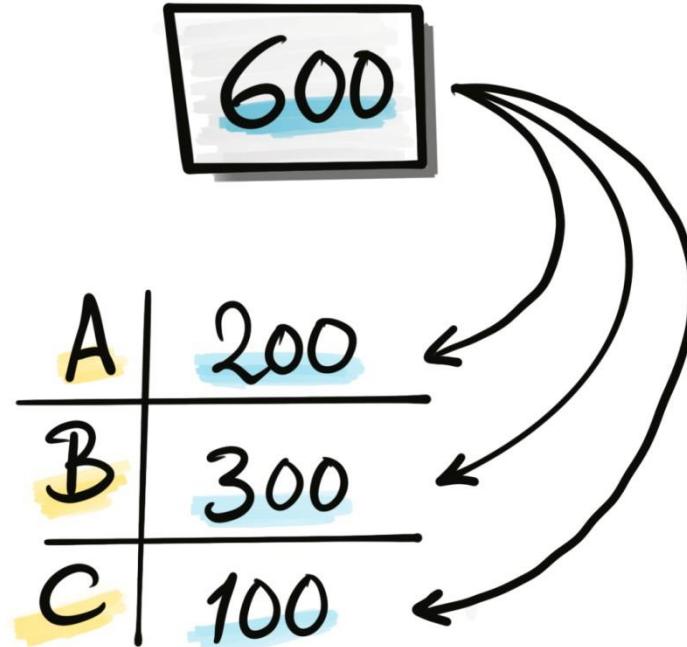
$\sum$  [Measure] By [Dimension]

Total Sales By Country

Total Quantity By Category

Average Price By Product

Total Orders By Customer





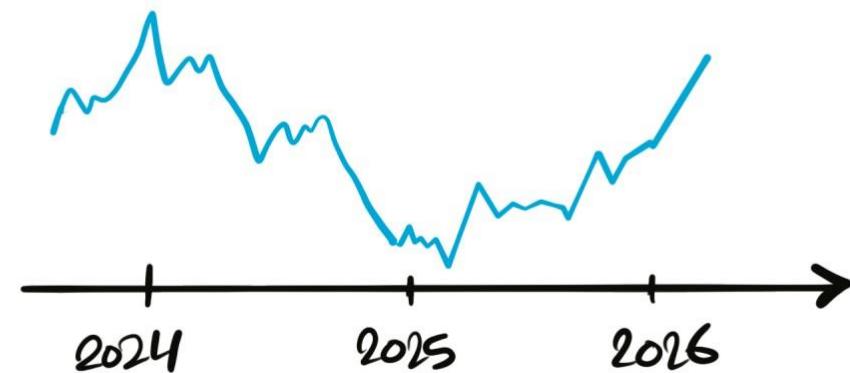
## Change - Over - Time Trends

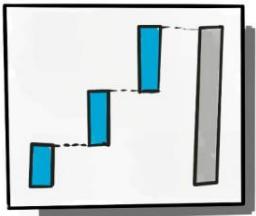
$\sum$  [Measure] By [Date Dimension]

Total Sales By Year

Average Cost By Month

2024	300
2025	100
2026	200



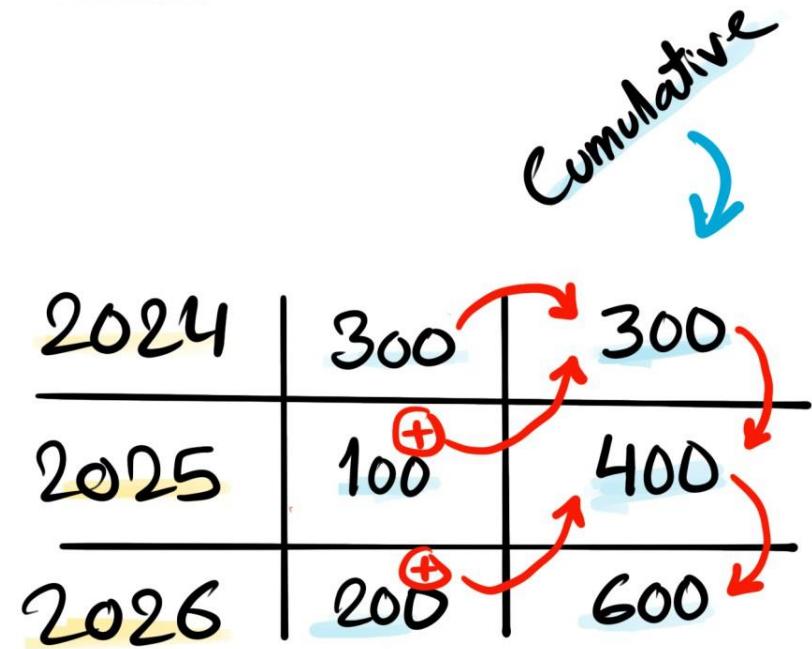


## Cumulative Analysis

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

Running Total Sales By Year

Moving Average of Sales By Month



## WINDOW FUNCTIONS





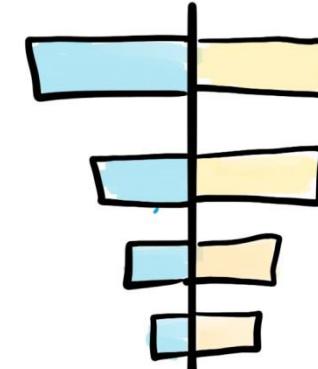
## Performance Analysis

Current [Measure] - Target [Measure]

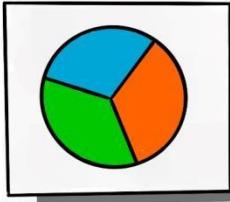
Current Sales - Average Sales

Current year Sales - Previous year Sales

Current Sales - lowest Sales



## WINDOW FUNCTIONS



## Part-to-Whole

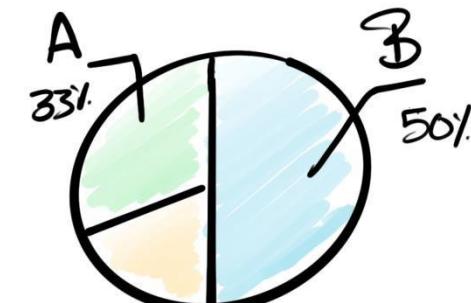
Proportional Analysis

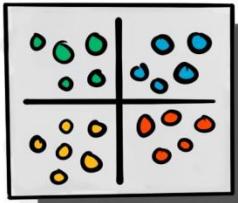
$([\text{Measure}] / \text{Total} [\text{Measure}]) * 100$  By [Dimension]

$(\text{Sales} / \text{Total Sales}) * 100$  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	Low	7
4	100		
5	150	Medium	6
1	200		
10	250	Large	15
5	300		

CASE WHEN STATEMENT

