



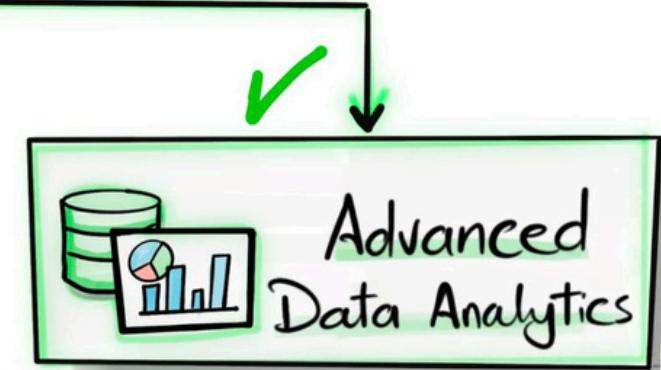
SQL DATA WARHOUSE

Project





SQL Projects



"Organize, Structure, Prepare"

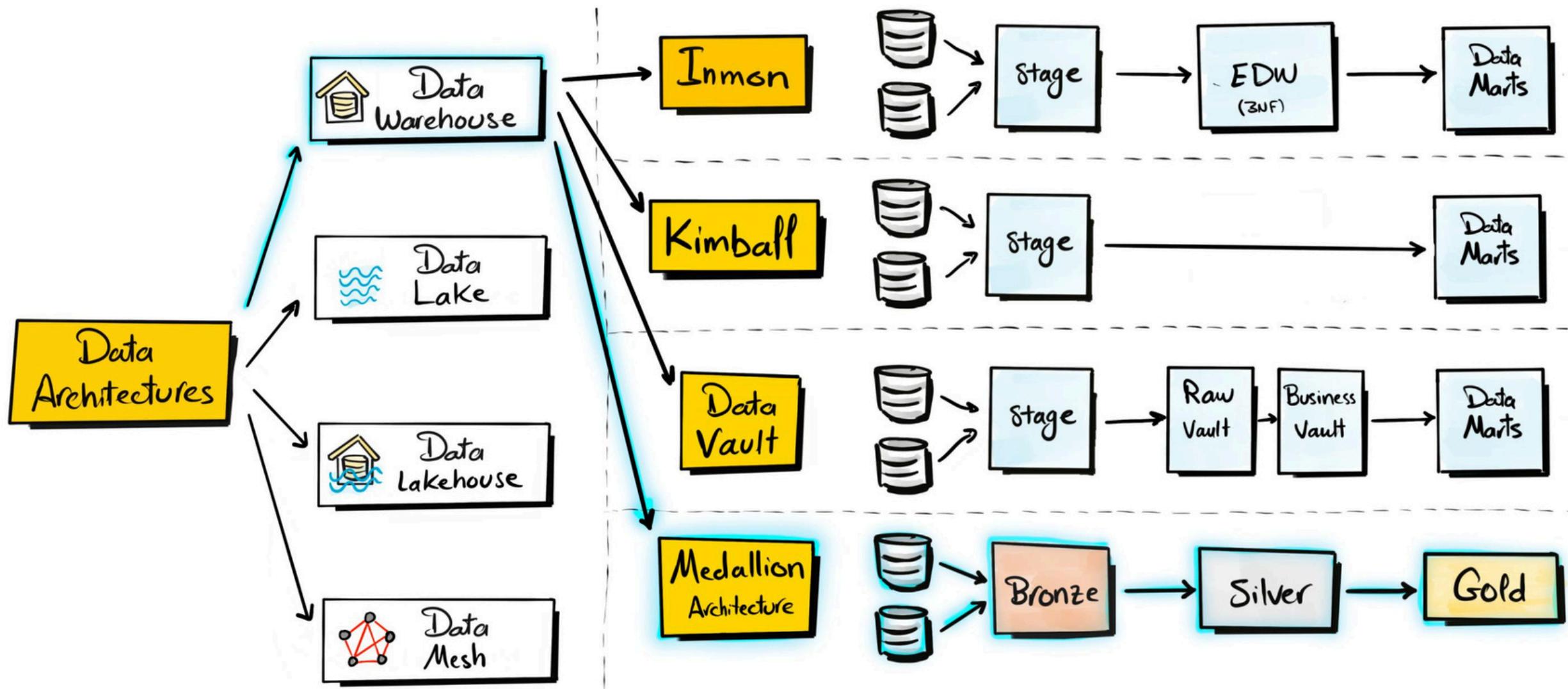
- ETL/ELT Processing
- Data Architecture
- Data Integration
- Data Cleansing
- Data Load
- Data Modeling

"Understand Data"

- Basic Queries
- Data Profiling
- Simple Aggregations
- Subquery

"Answer Business Questions."

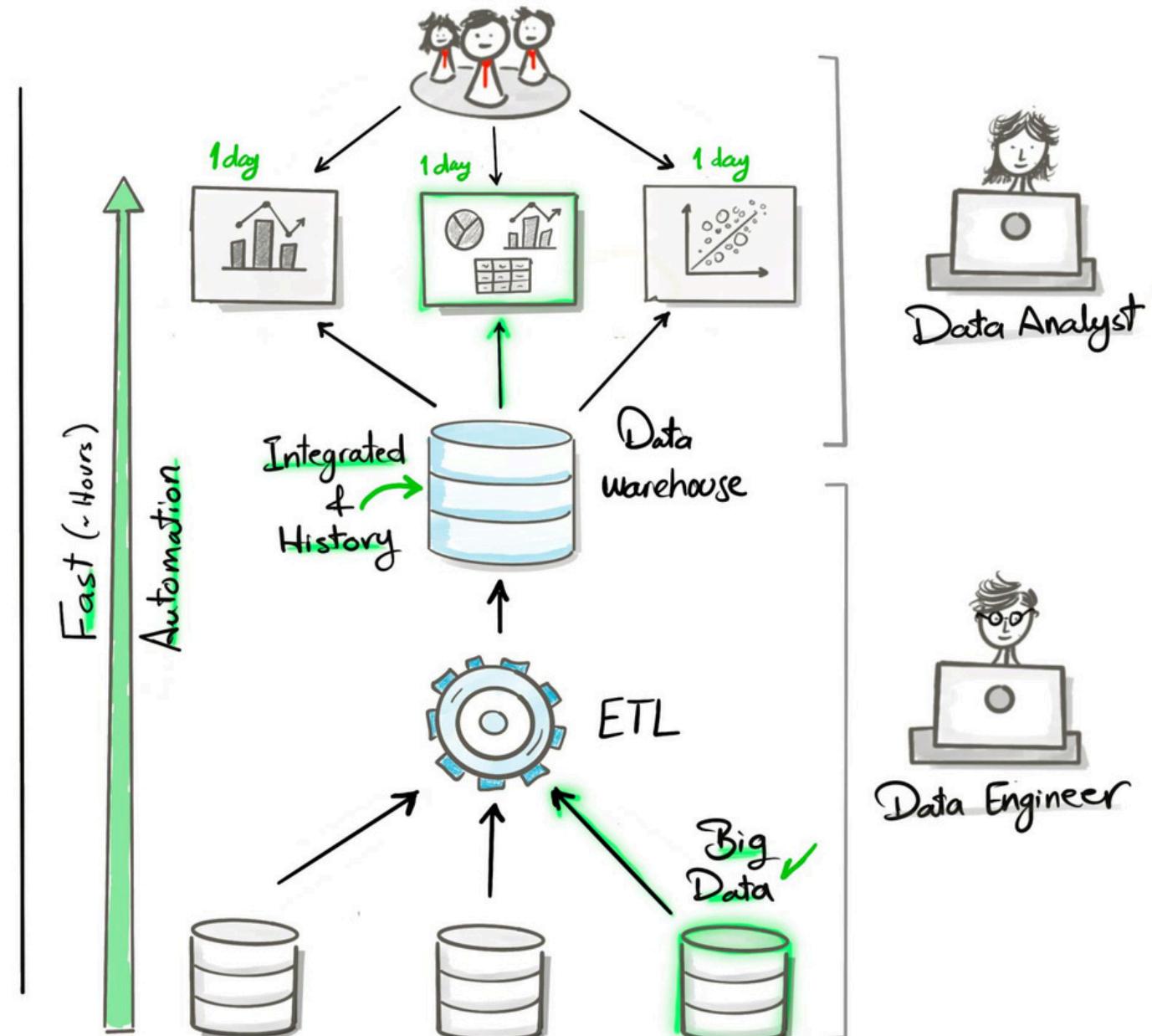
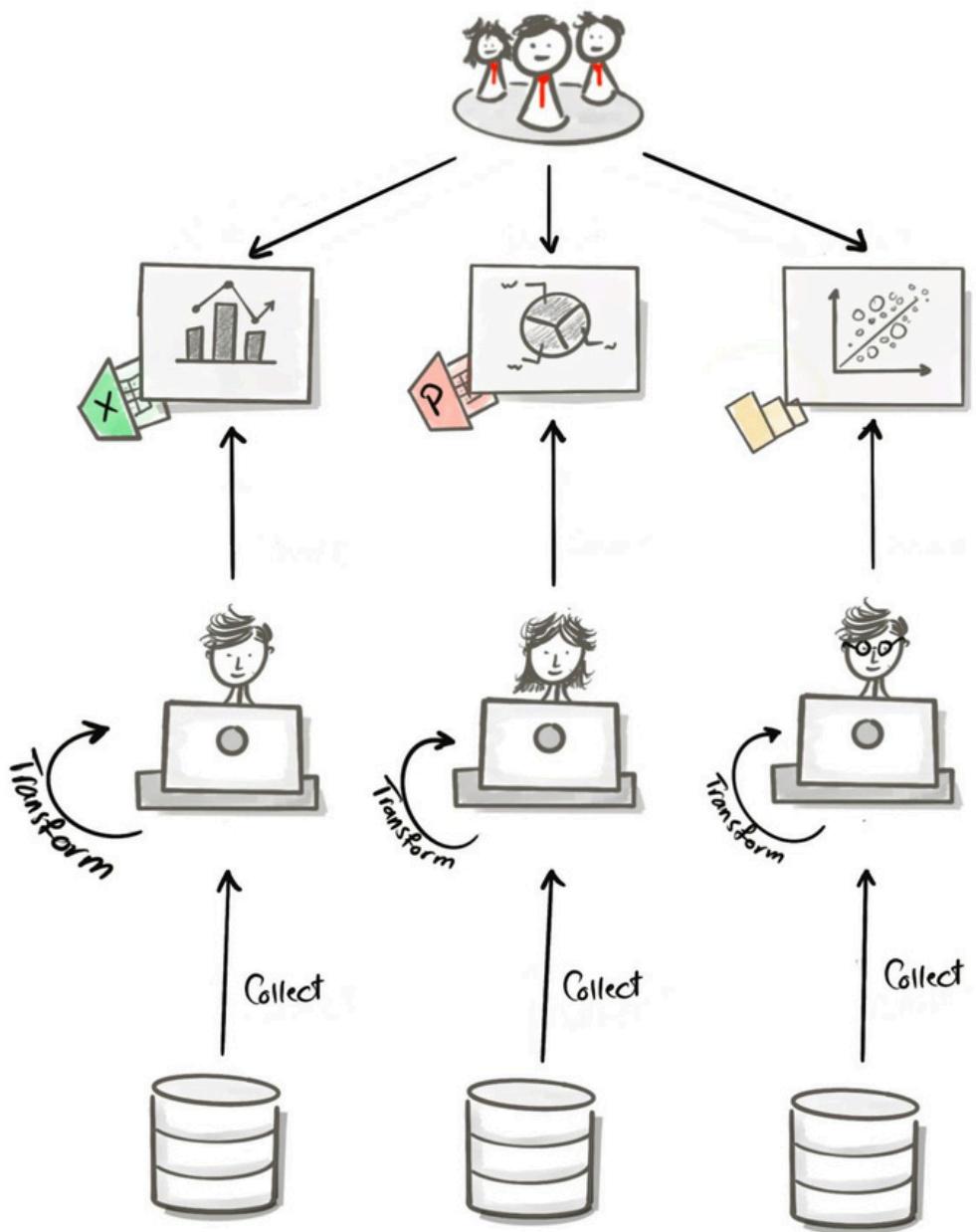
- Complex Queries
- Window Functions
- CTE
- Subqueries
- Reports

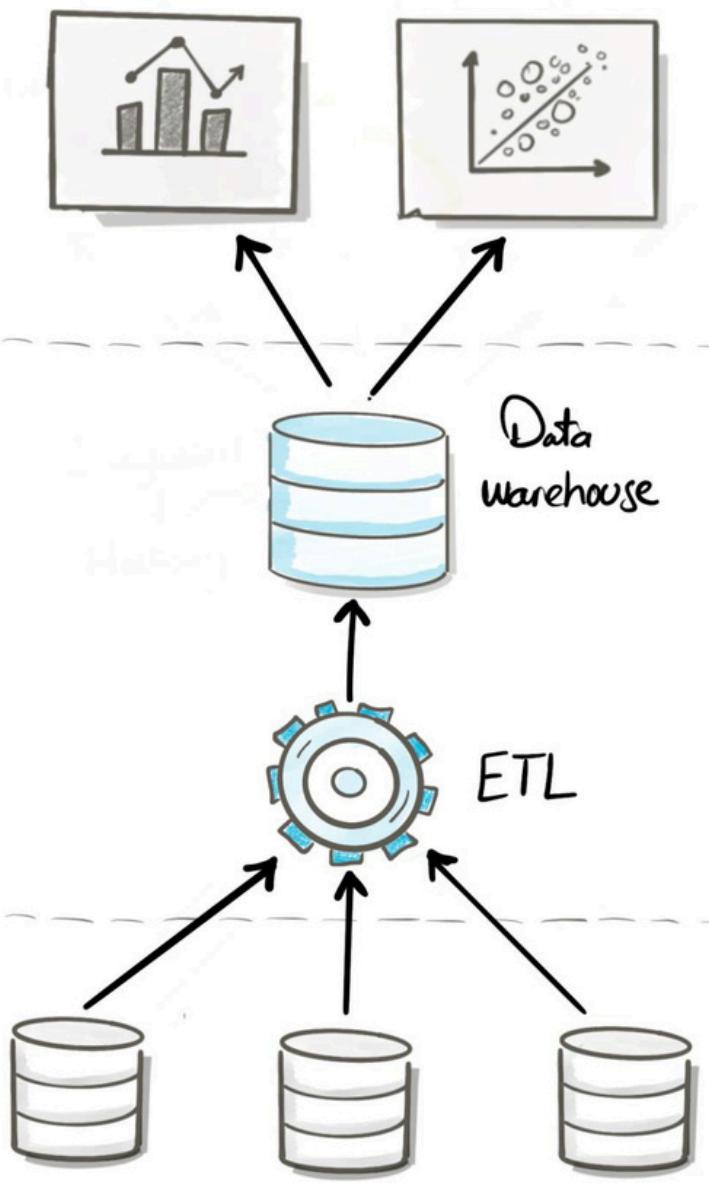




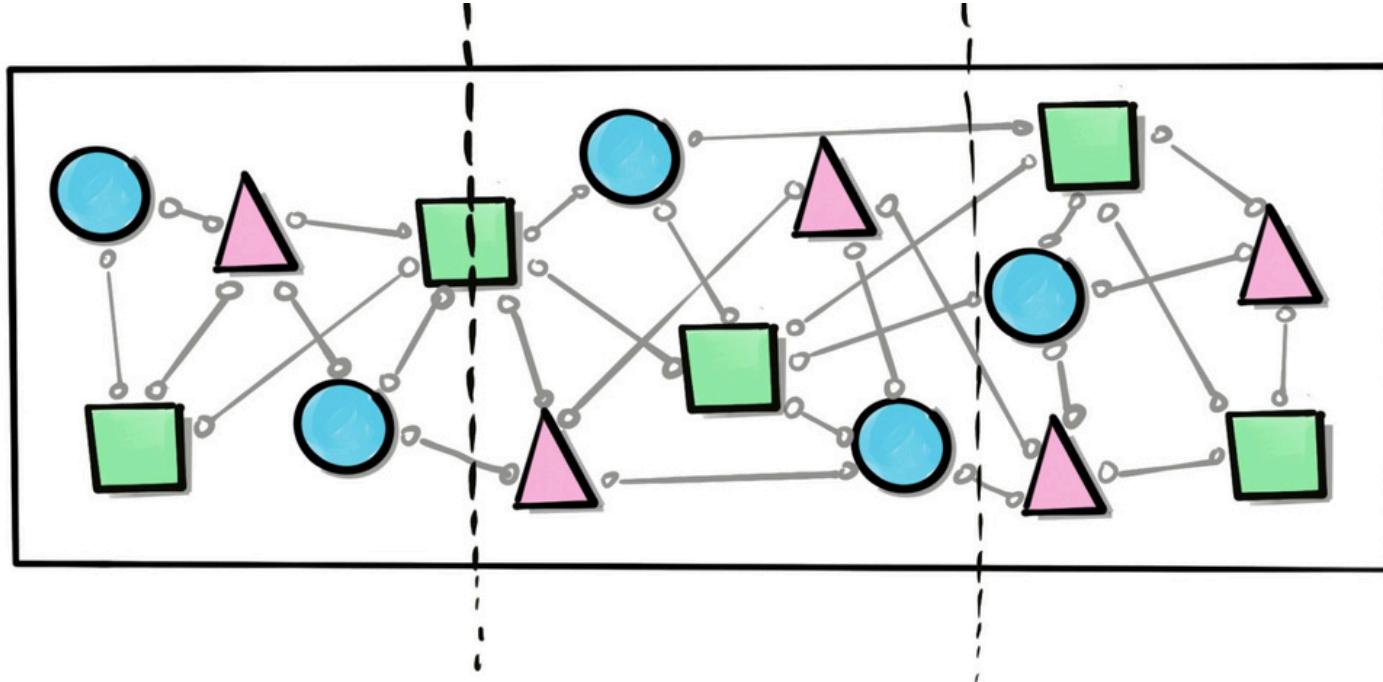
Bronze Layer

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">- Data Cleaning- Data Standardization- Data Normalization- Derived Columns- Data Enrichment	<ul style="list-style-type: none">- Data Integration- Data Aggregation- Business Logic & Rules
Data Modeling	None (as-is)	None (as-is)	<ul style="list-style-type: none">- Start Schema- Aggregated Objects- Flat Tables
Target Audience	- Data Engineers	<ul style="list-style-type: none">- Data Analysts- Data Engineers	<ul style="list-style-type: none">- Data Analysts- Business Users

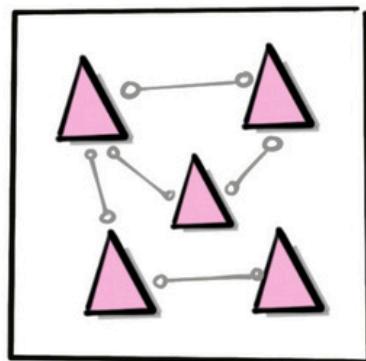




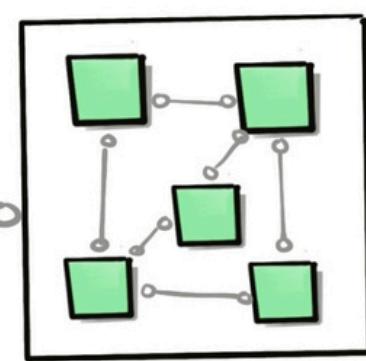
Without
SOC



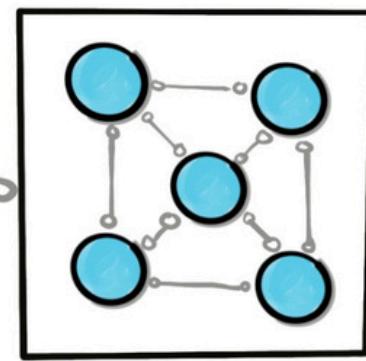
with
SOC



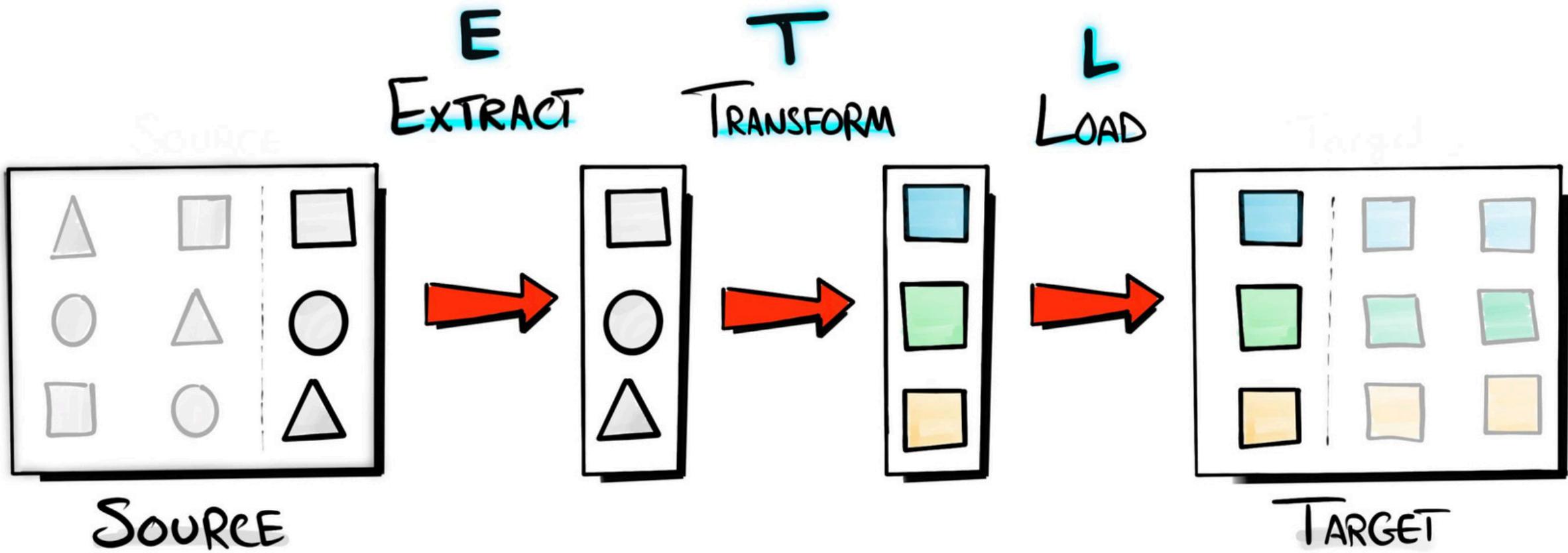
Module A



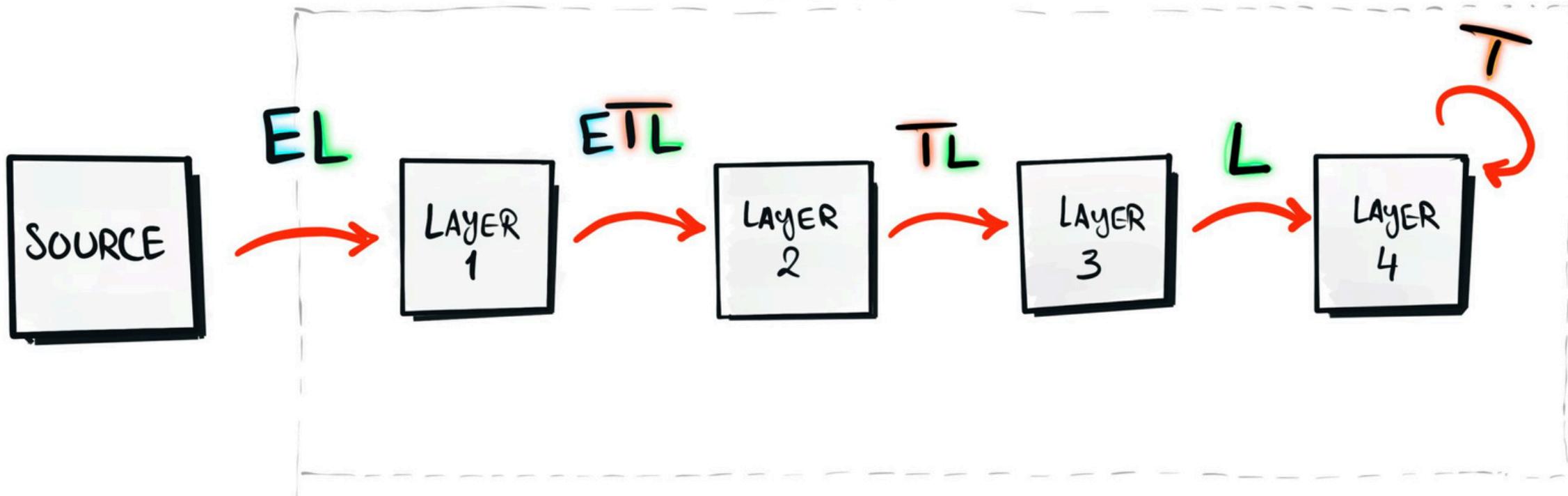
Module B



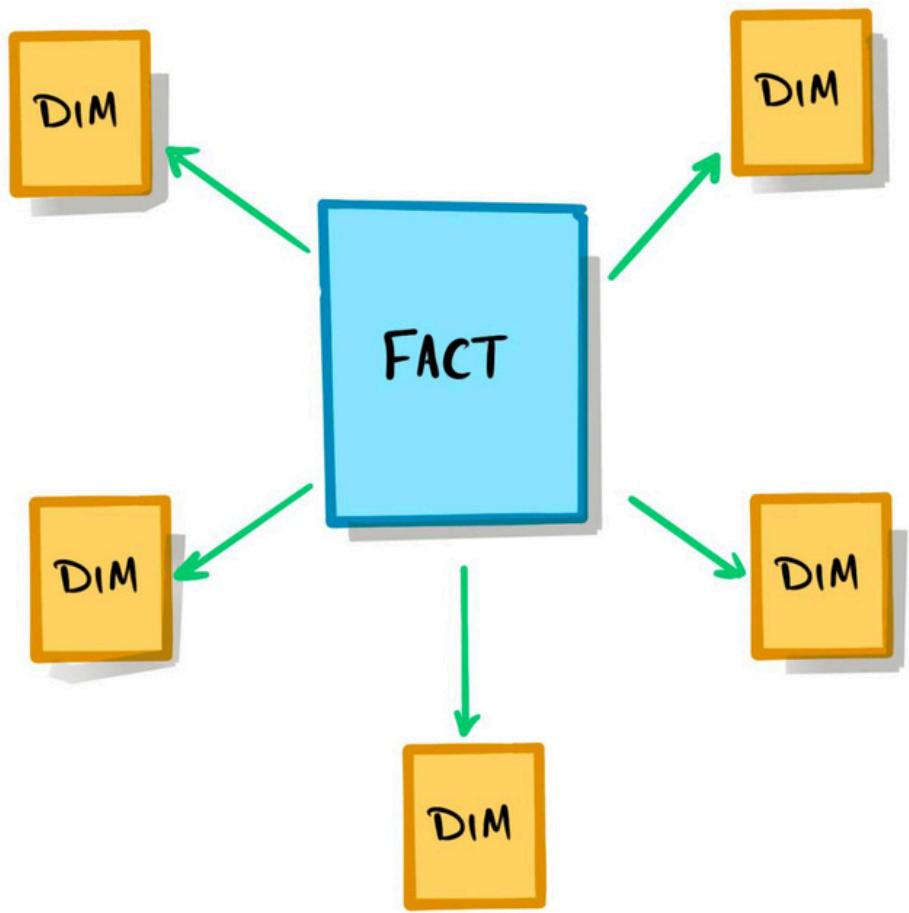
Module C



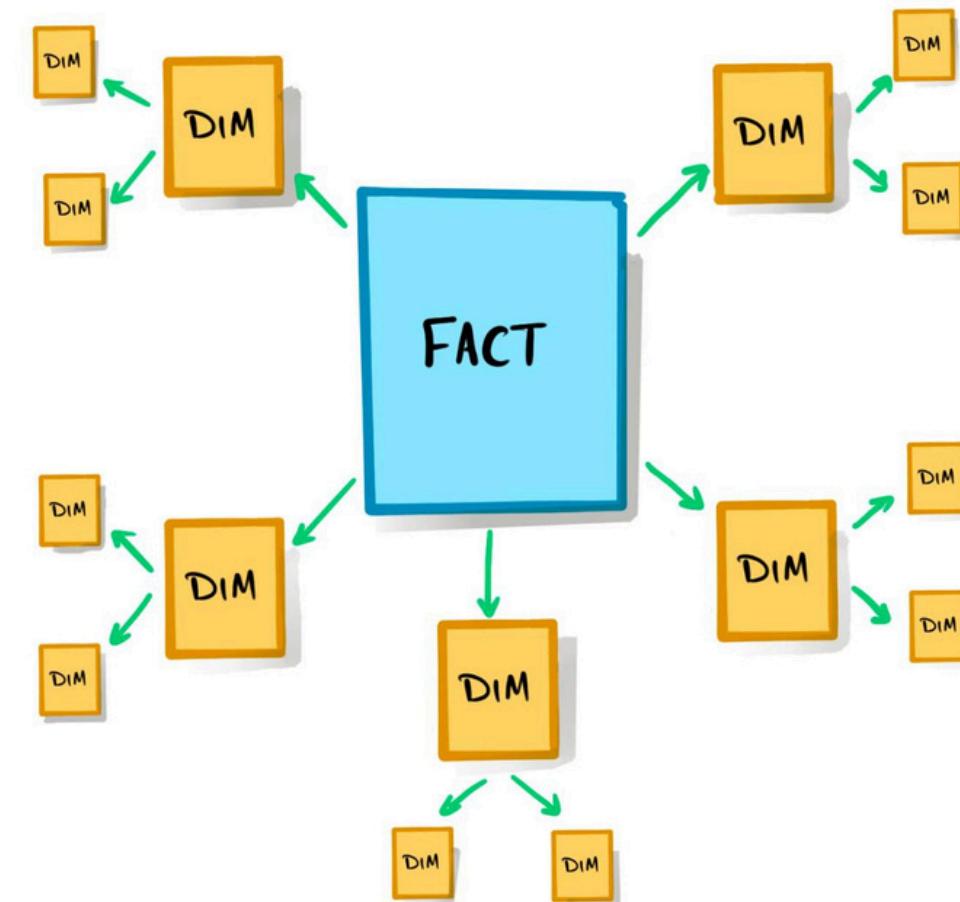
Data Architecture

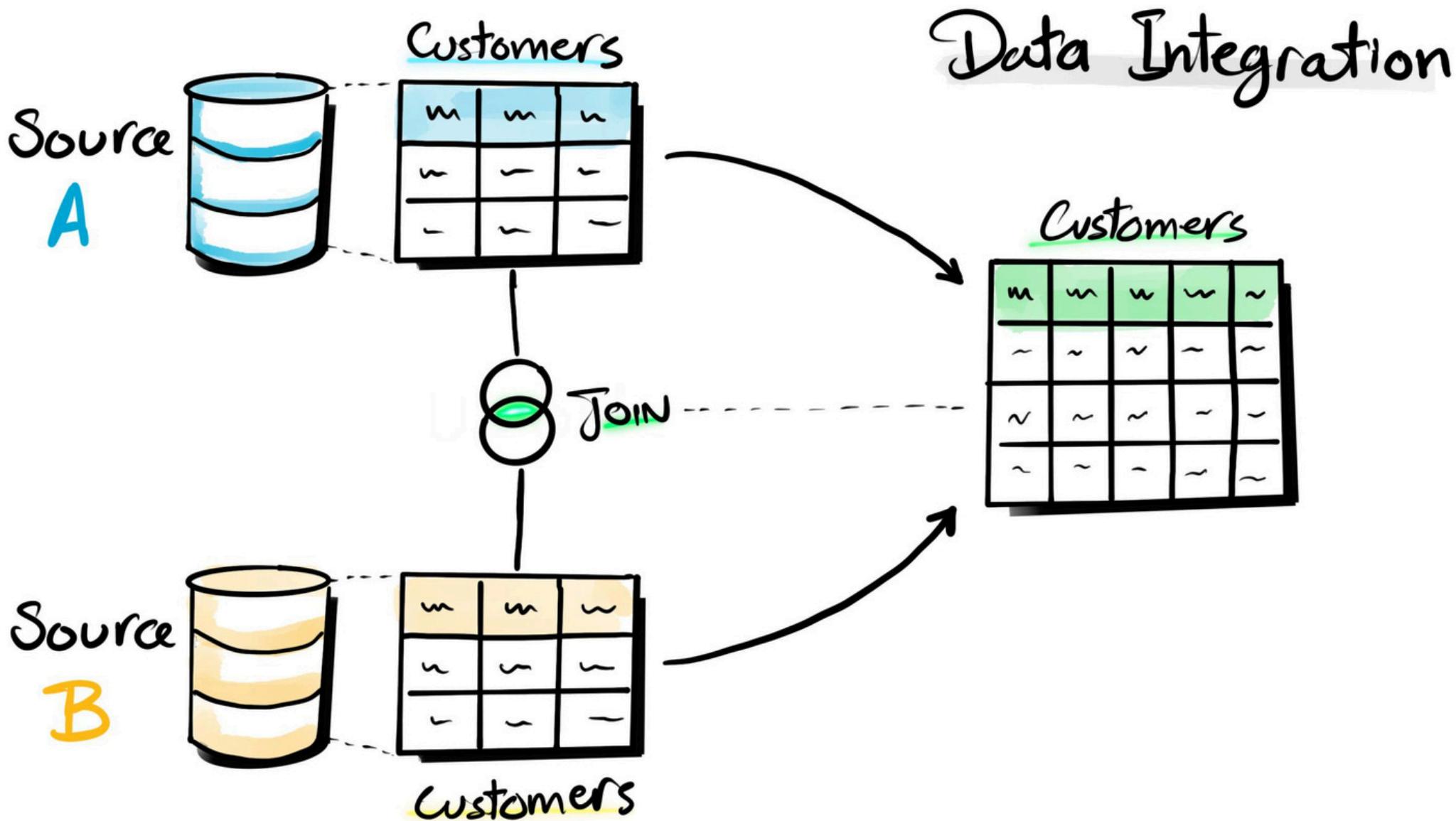


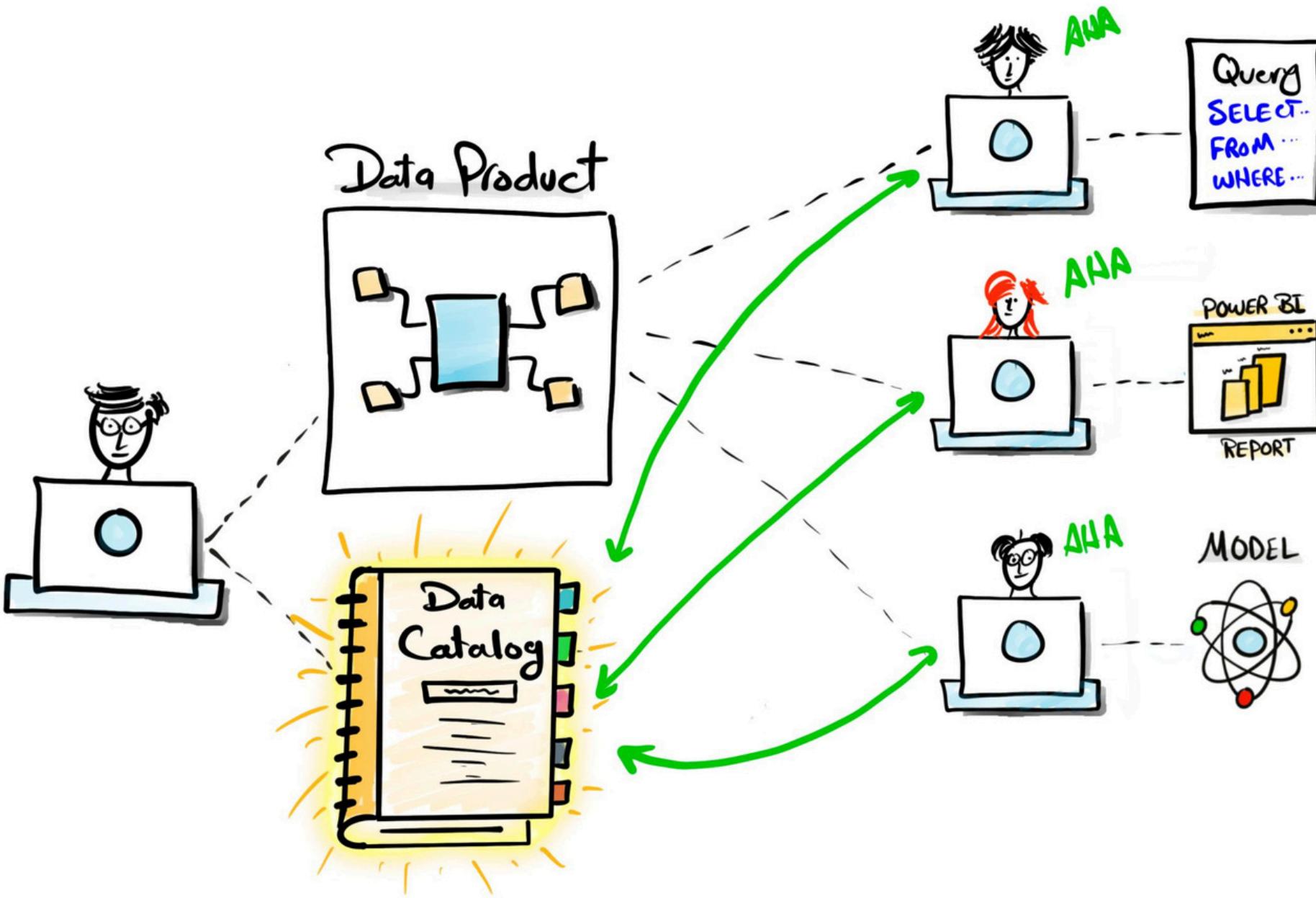
STAR SCHEMA

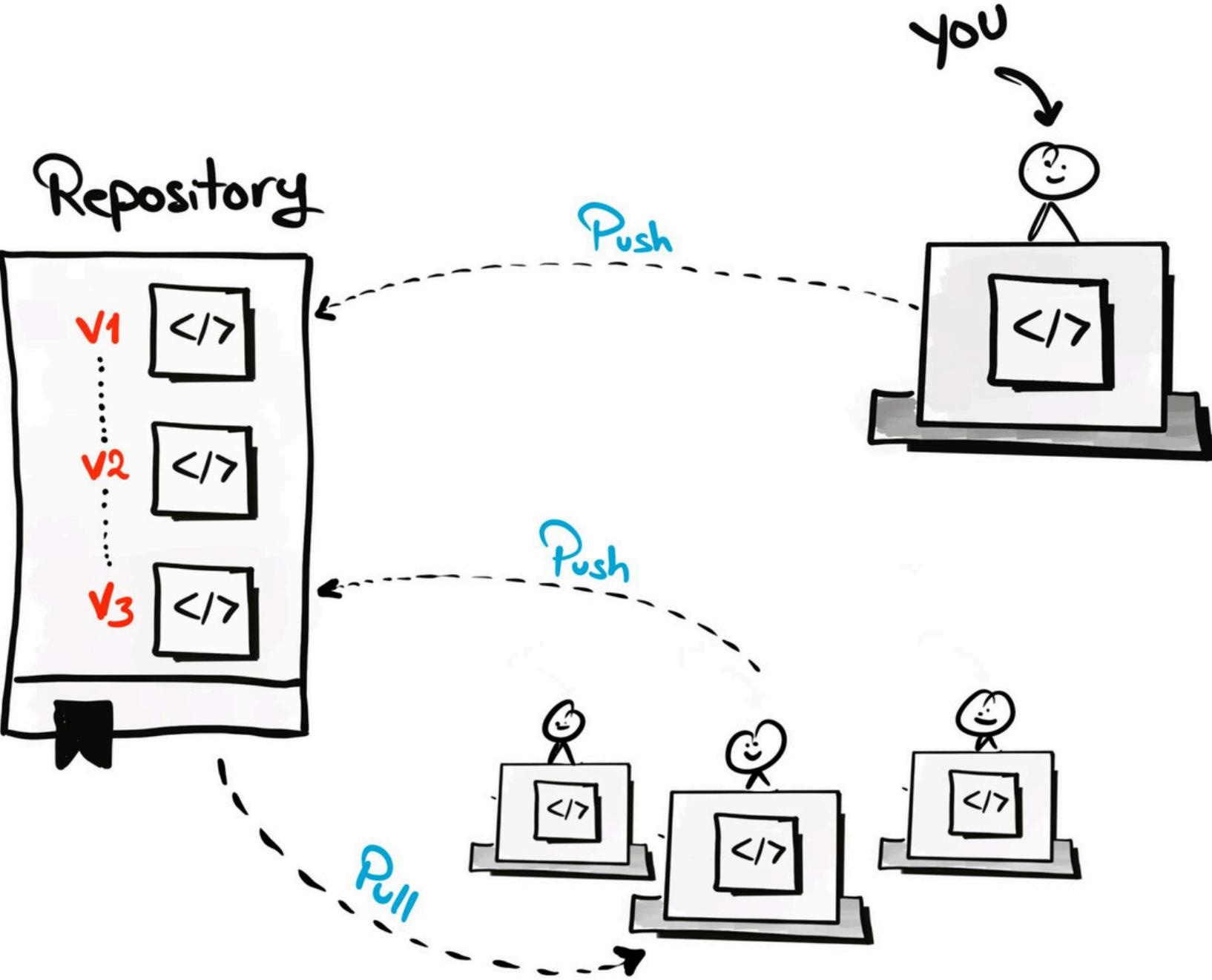


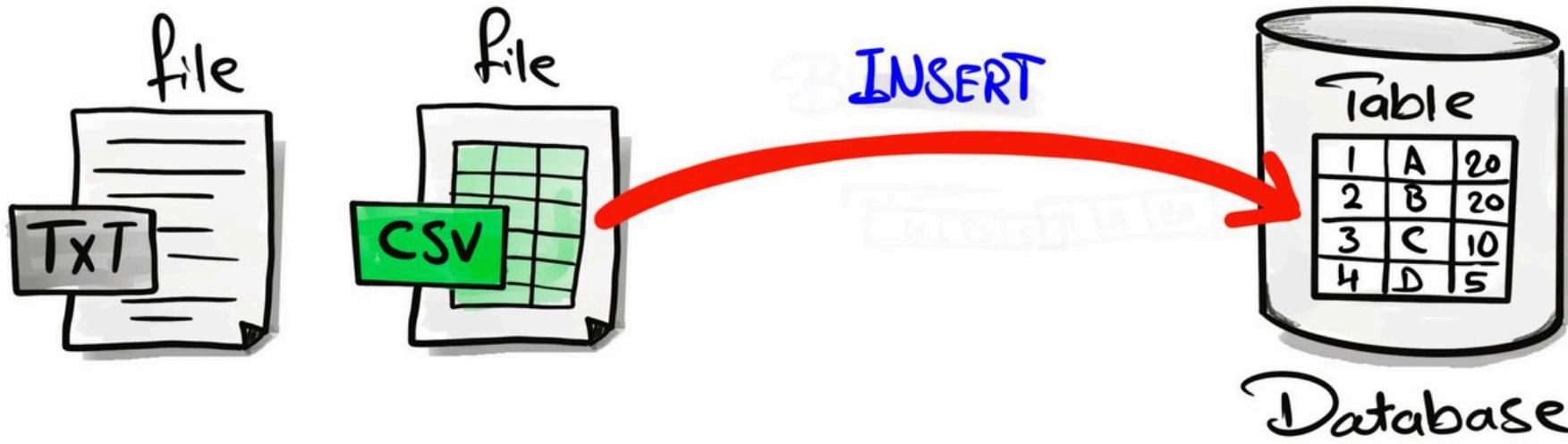
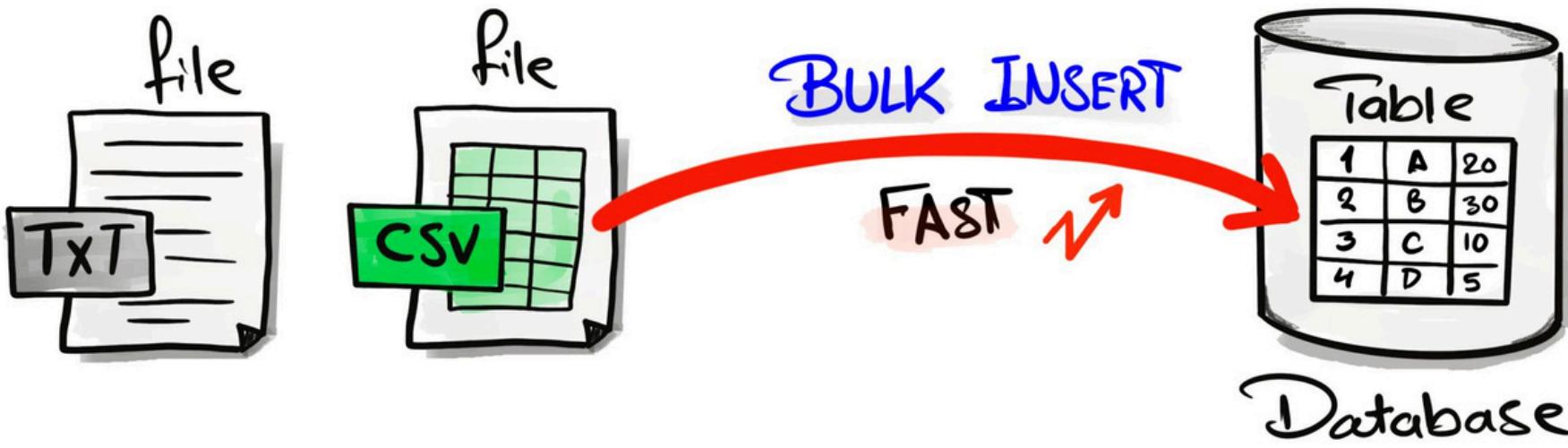
SNOWFLAKE SCHEMA











SQL DATA Analytics

Project

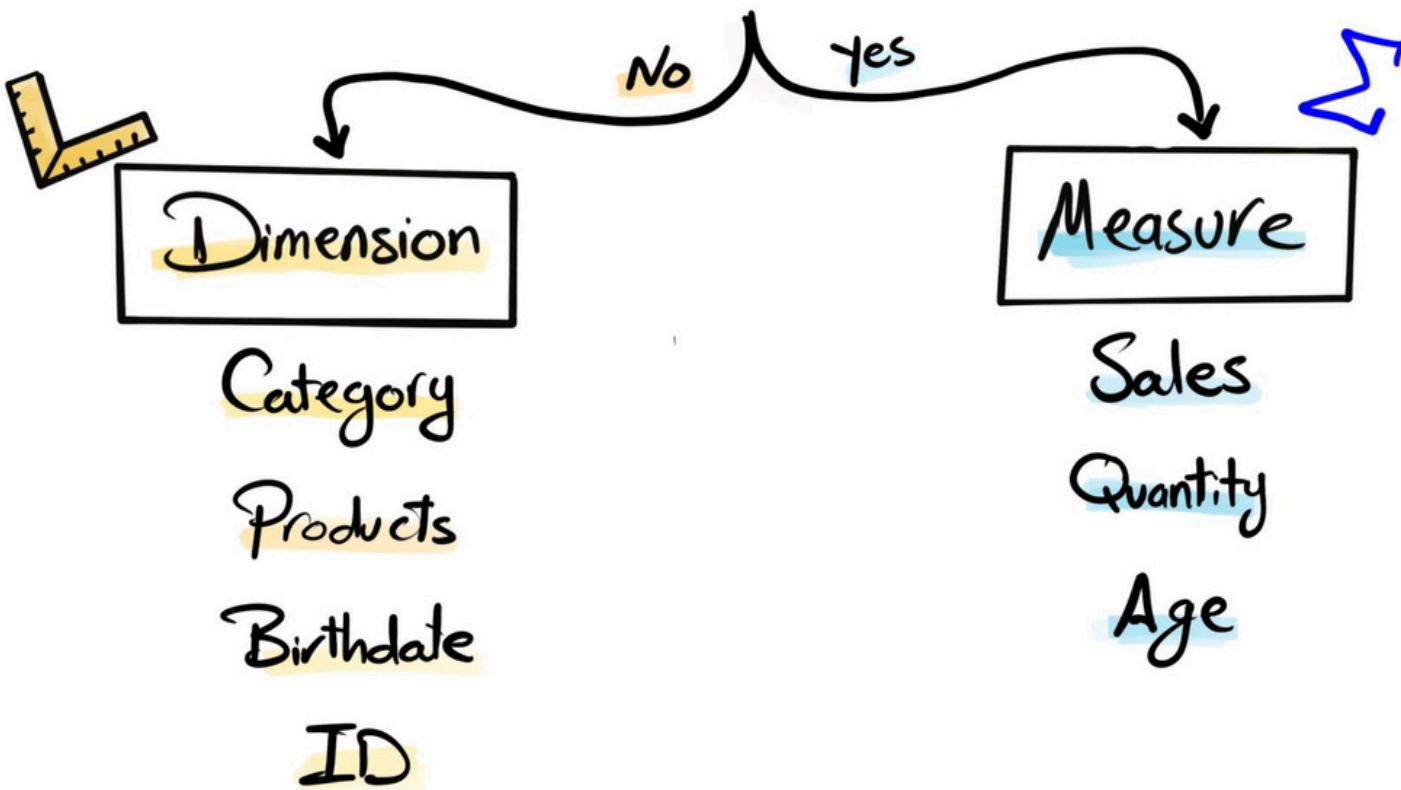


Dataset

-	-	-	-	-
-	-	-	-	-
-	-	-	-	-
-	-	-	-	-
-	-	-	-	-

Is it Numeric ?

& Does it make Sense to aggregate?



A C
B D

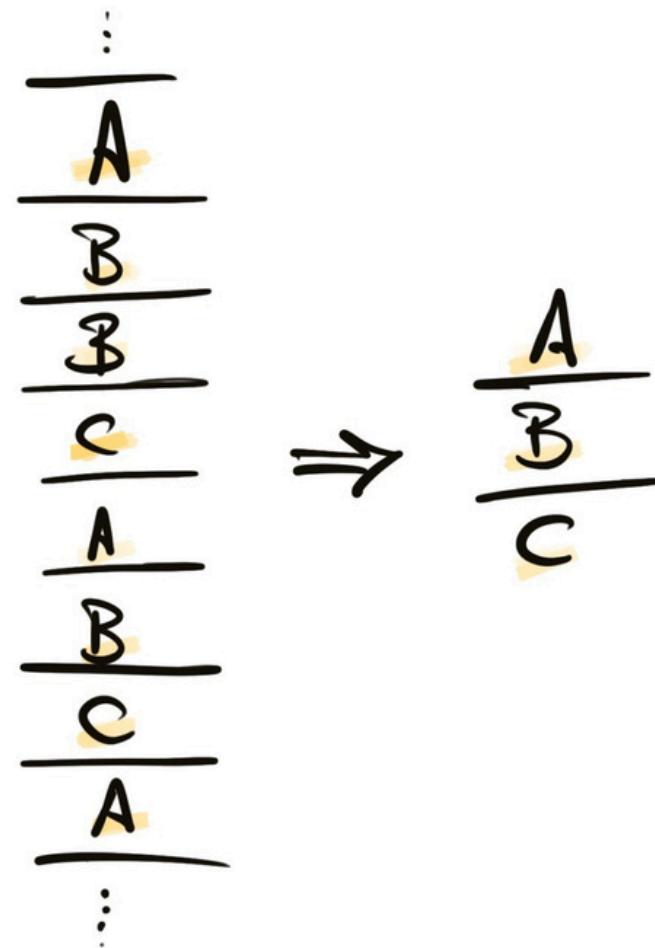
Dimensions Exploration

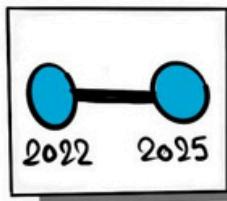
DISTINCT [Dimension]

DISTINCT Country

DISTINCT Category

DISTINCT Product





Date Exploration

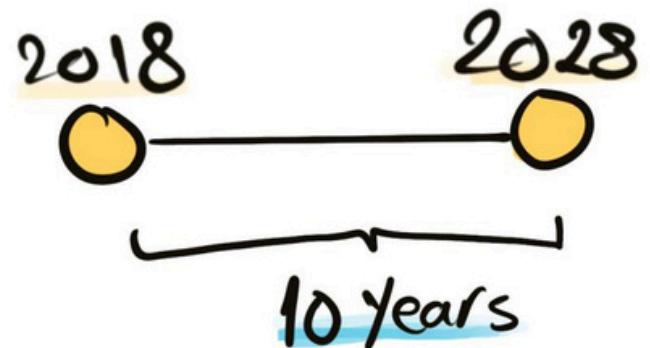
MIN/MAX [Date Dimension]

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)

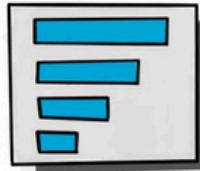
$$\begin{array}{r} 10 \\ \hline 20 \\ 50 \\ \hline 30 \\ 10 \\ \hline 80 \\ 30 \\ \hline 10 \end{array}$$



240

BIG Number

↑
Key Metric



Magnitude

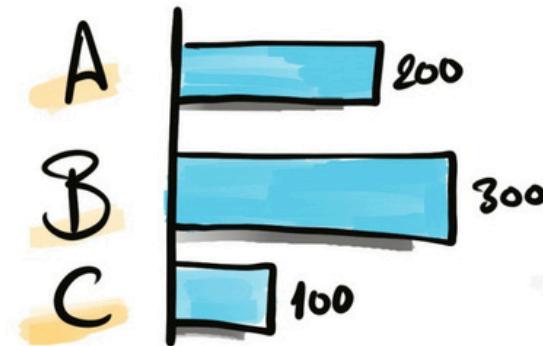
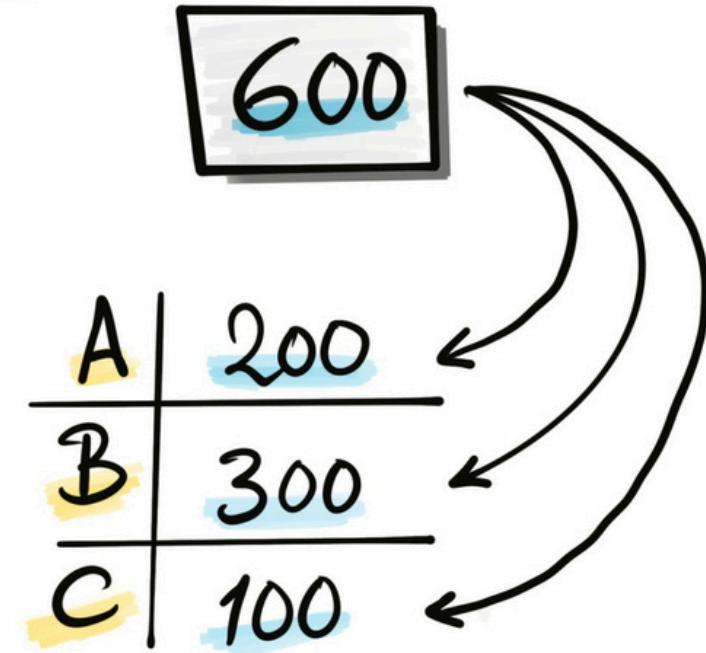
Σ [Measure] By [Dimension]

Total Sales By Country

Total Quantity By Category

Average Price By Product

Total Orders By Customer





Change - Over - Time

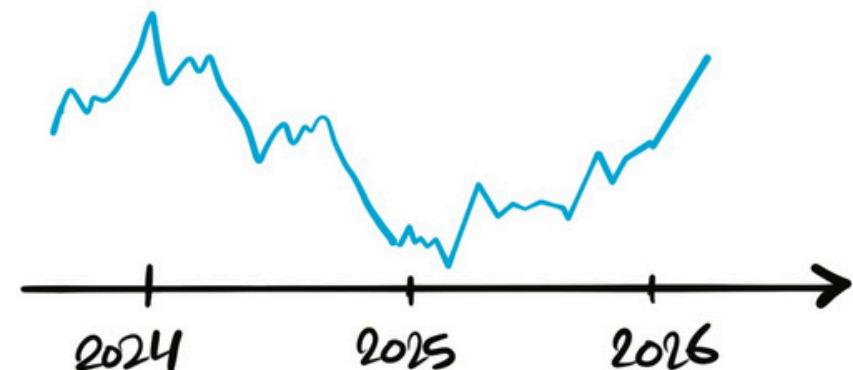
Trends~

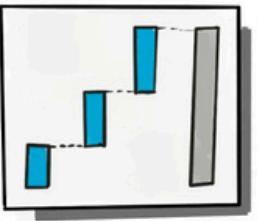
\sum [Measure] By [Date Dimension]

Total Sales By Year

Average Cost By Month

2024	300
<hr/>	
2025	100
<hr/>	
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 handwritten note with a blue arrow labeled "Cumulative" points to the value 300 in the first row, indicating it is the running total for the year 2024.

Red arrows show the addition of values from one year to the next: 300 + 100 = 400, and 400 + 200 = 600.



WINDOW FUNCTIONS



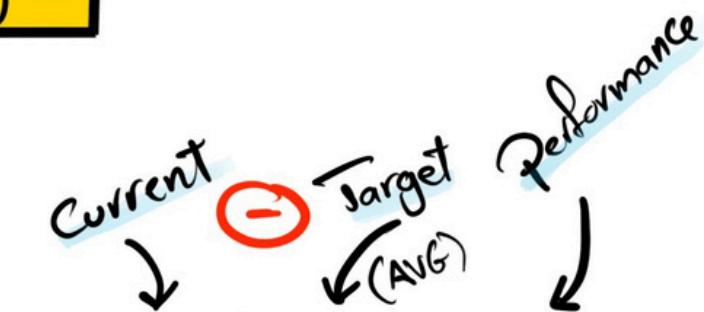
Performance Analysis

Current [Measure] - Target [Measure]

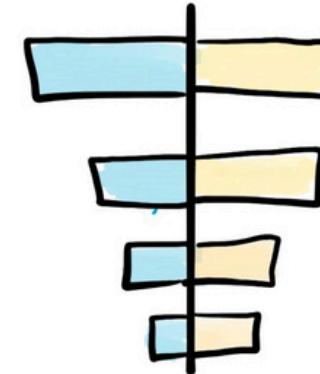
Current Sales - Average Sales

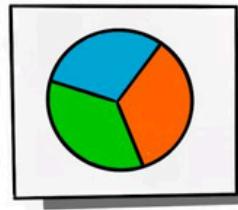
Current Year Sales - Previous Year Sales

Current Sales - lowest Sales



WINDOW FUNCTIONS





Part-to-Whole

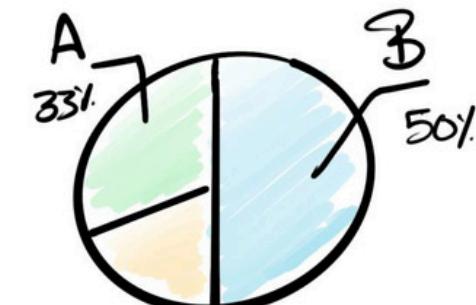
Proportional Analysis

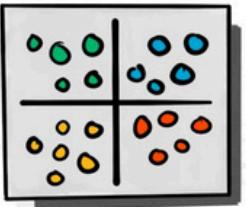
$([\text{Measure}] / \text{Total} [\text{Measure}]) * 100$ By [Dimension]

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

