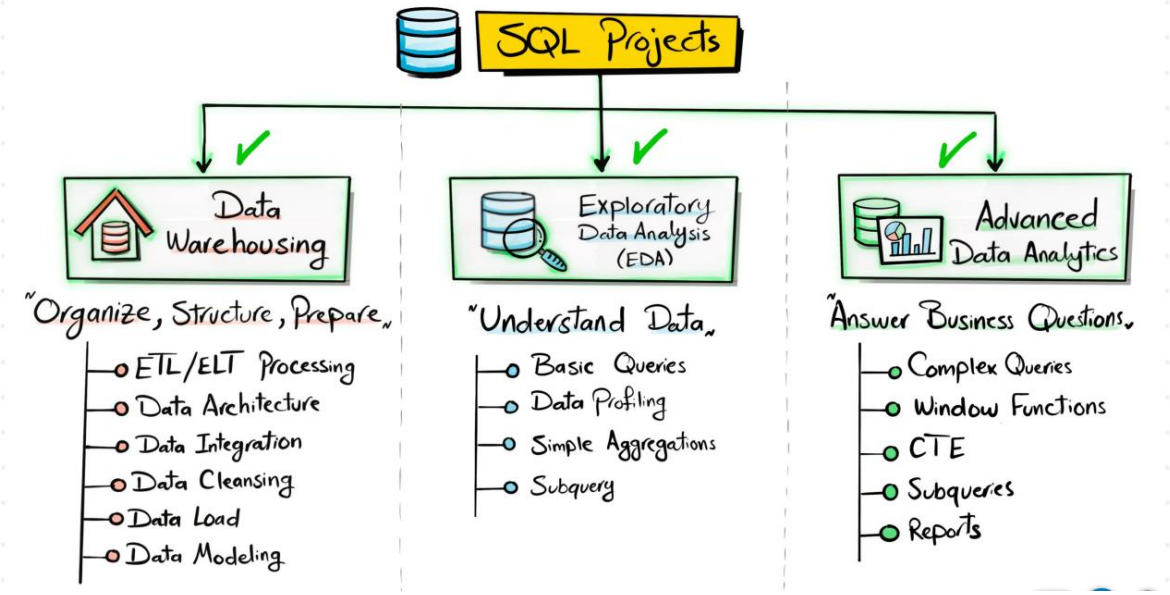
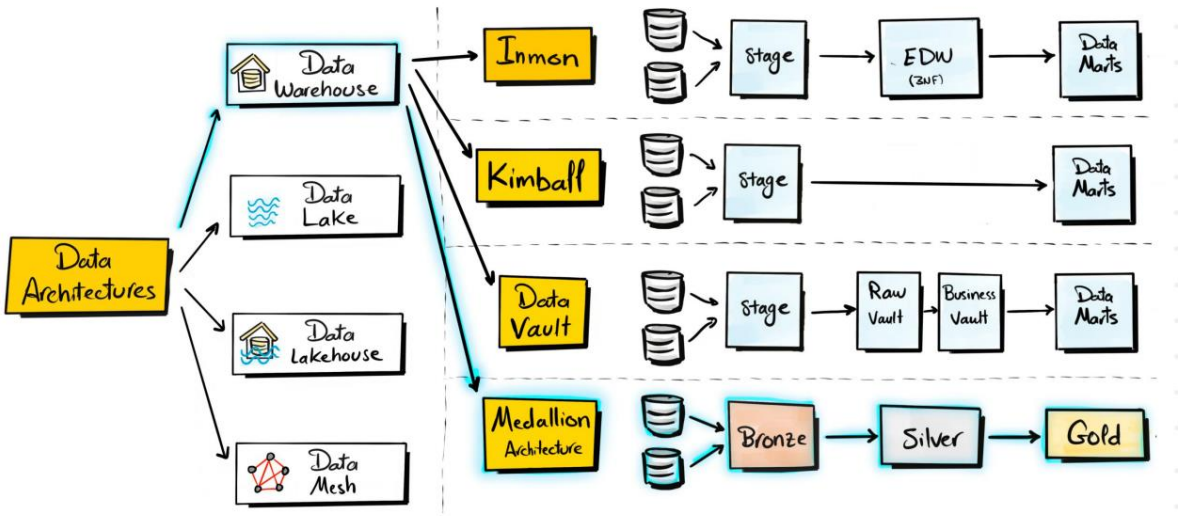
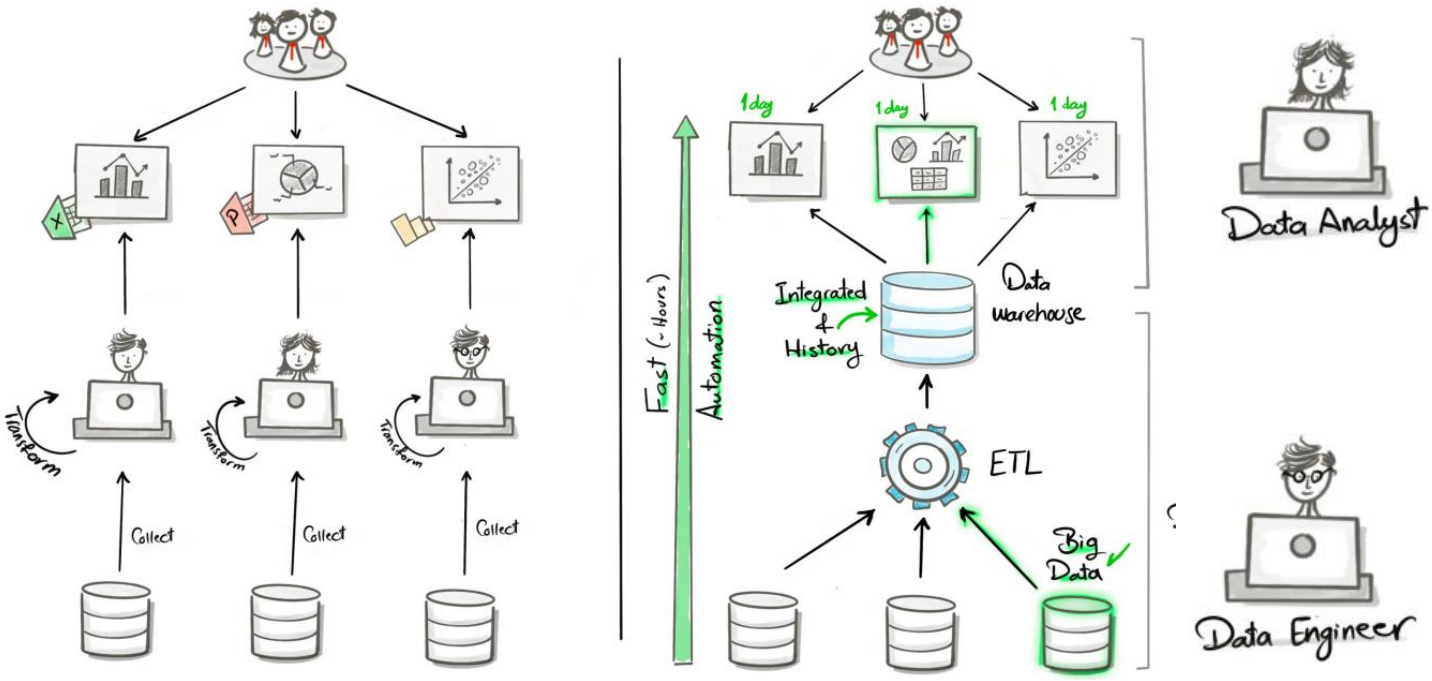
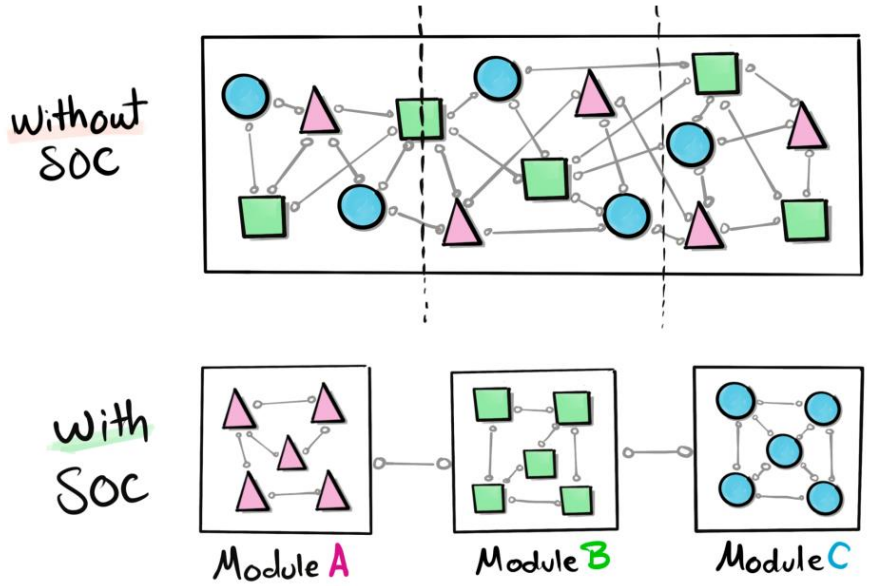
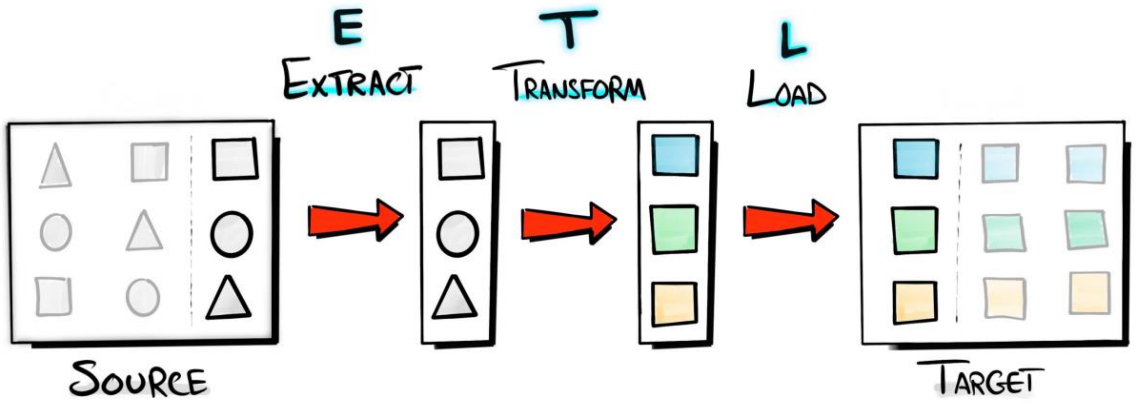
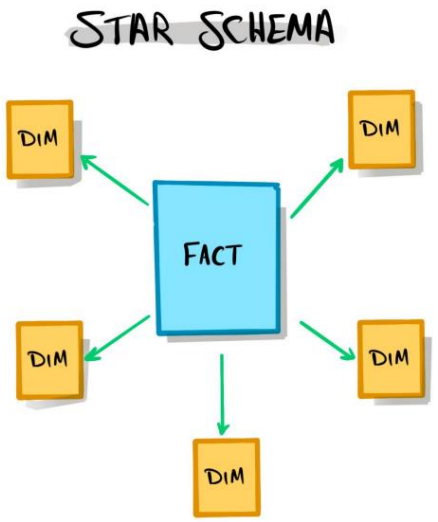

SQL Projects
Data Warehousing
Exploratory Data Analysis (EDA)
Advanced Data Analytics
"Organize, Structure, Prepare"
ETL/ELT Processing
Data Architecture
Data Integration
Data Cleansing
Data Load
Data Modeling
"Understand Data"
Basic Queries
Data Profiling
Simple Aggregations
Subquery
"Answer Business Questions"
Complex Queries
Window Functions
CTE
Subqueries
Reports

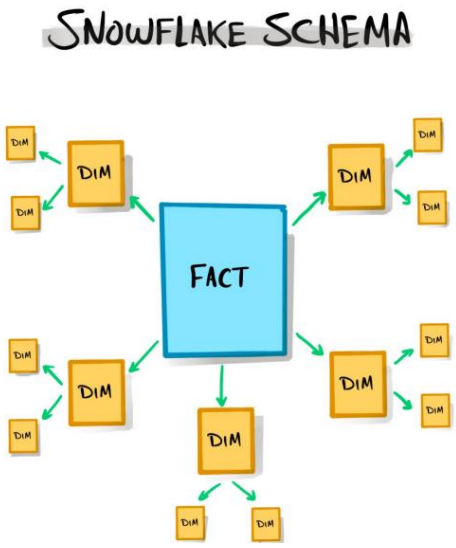

Data Architectures
Data Warehouse
Data Lake
Data Lakehouse
Data Mesh
Inmon
Kimball
Data Vault
Medallion Architecture
Stage
EDW (3NF)
Data Marts
Stage
Data Marts
Stage
Raw Vault
Business Vault
Data Marts
Bronze
Silver
Gold

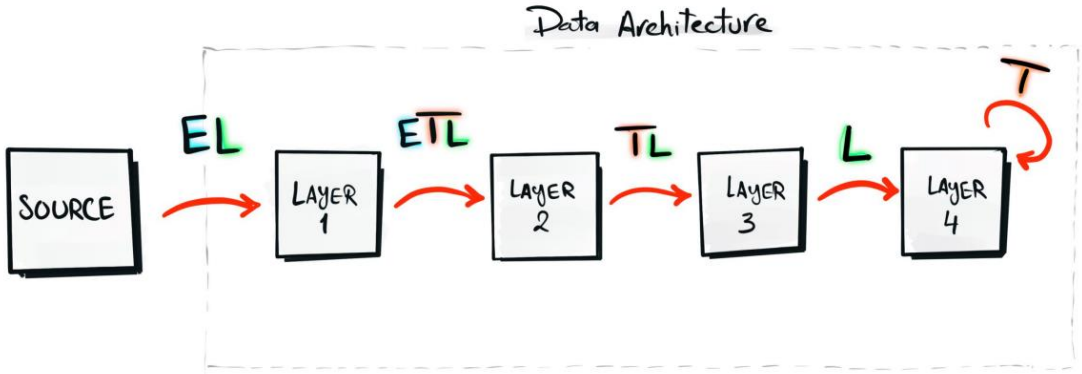

Collect
Collect
Collect
Transform
Transform
Transform
1 day
1 day
1 day
Integrated & History
Data warehouse
ETL
Big Data
Fast (~Hours)
Automation
Data Analyst
Data Engineer

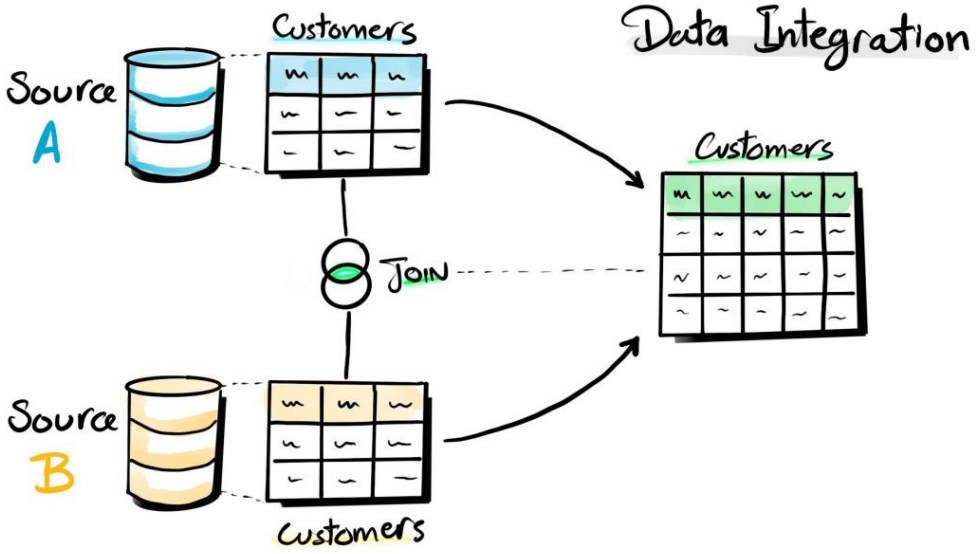

Without SOC
With SOC
Module A
Module B
Module C

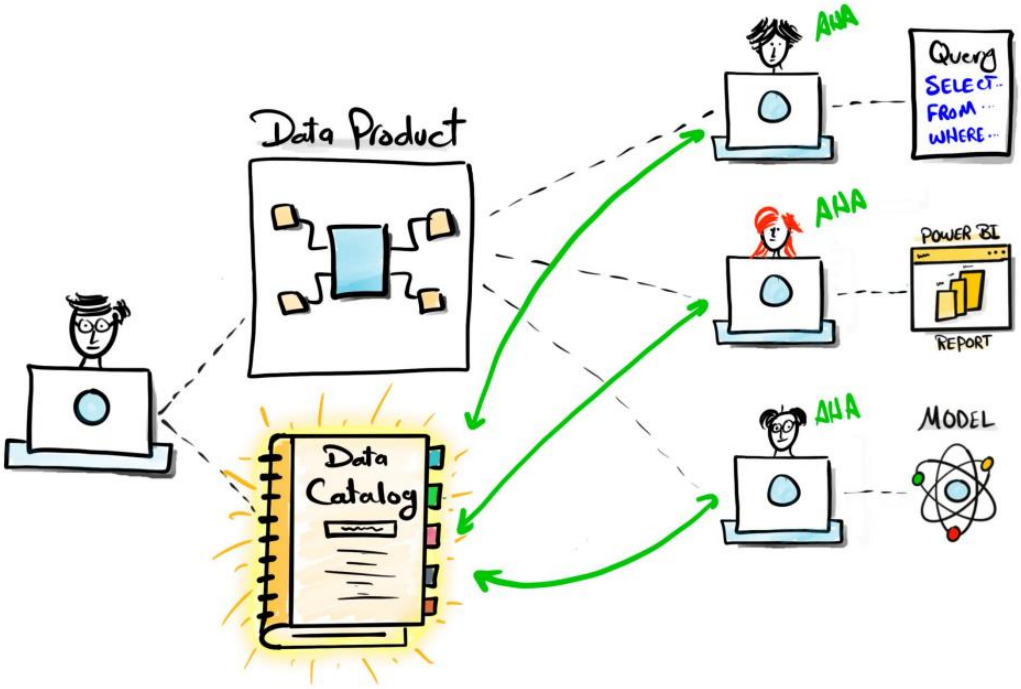

E
EXTRACT
T
TRANSFORM
L
LOAD
SOURCE
TARGET

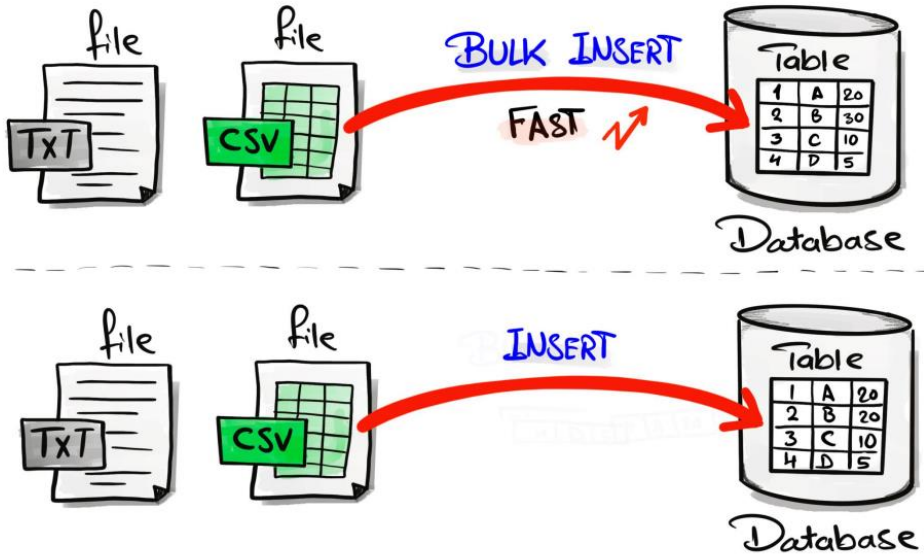

STAR SCHEMA
DIM
DIM
FACT
DIM
DIM
DIM

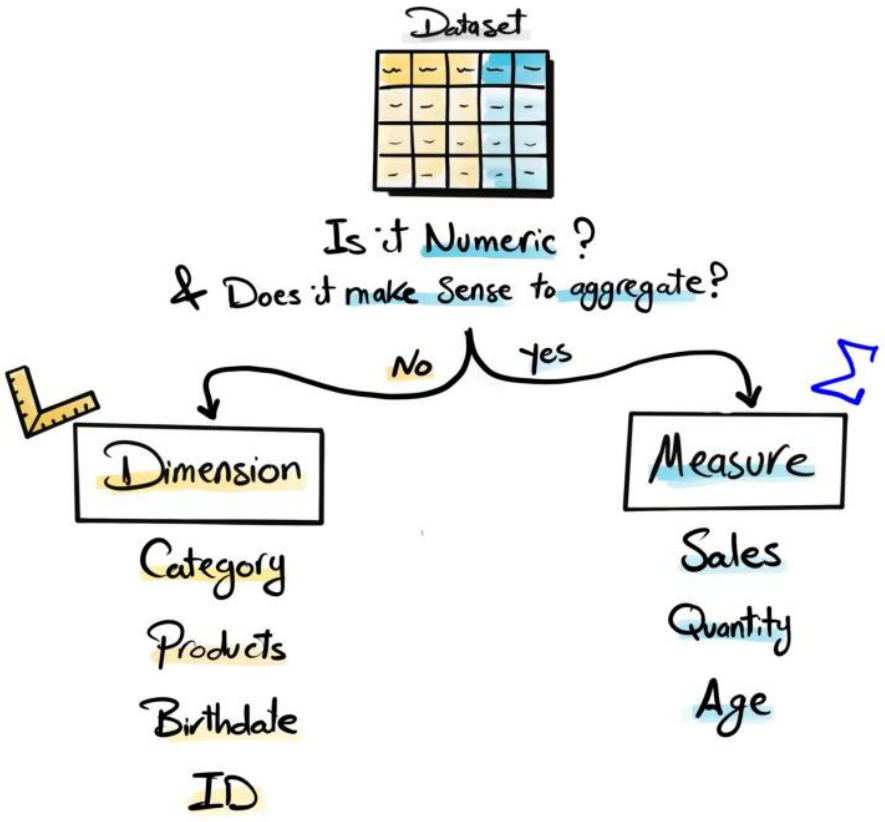

SNOWFLAKE SCHEMA
DIM
FACT


Data Architecture
SOURCE
EL
LAYER 1
ETL
LAYER 2
TL
LAYER 3
L
LAYER 4
T


Data Integration
Source A
Customers
JOIN
Customers
Source B
Customers


Data Product
Data Catalog
AHA
Query
SELECT...
FROM...
WHERE...
AHA
POWER BI
REPORT
AHA
MODEL

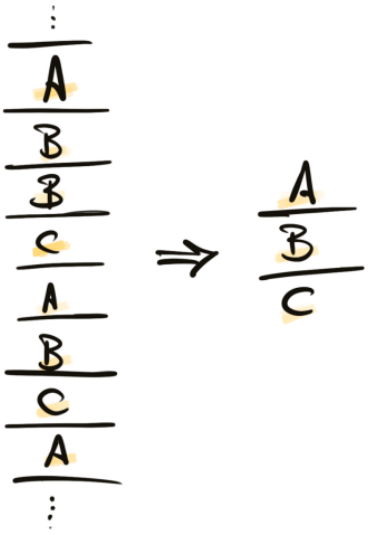

file
TXT
file
CSV
BULK INSERT
FAST
Table
1 A 20
2 B 30
3 C 10
4 D 5
Database
file
TXT
file
CSV
INSERT
Table
1 A 20
2 B 20
3 C 10
4 D 5
Database

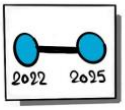


Dimensions Exploration

DISTINCT [Dimension]

DISTINCT Country
DISTINCT Category
DISTINCT Product



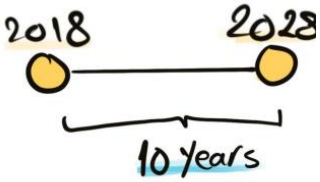


Date Exploration

MIN/MAX [Date Dimension]

MIN Order_date
MAX Create_date
MIN Birthdate

2019
2020
2018
2018
2022
2023
2023
2028
2022



DATEDIFF

Measures Exploration

$\sum$ [Measure]

SUM (Sales)
AVG (Price)
SUM (Quantity)

10
20
50
30
10
80
30
10

⇒ 240

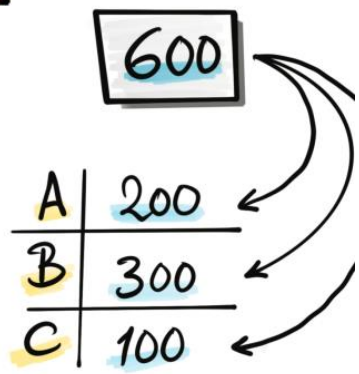
BIG Number

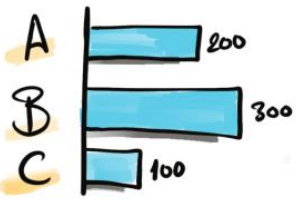
Key Metric

Magnitude

$\sum$ [Measure] By [Dimension]

- Total Sales By Country
- Total Quantity By Category
- Average Price By Product
- Total Orders By Customer



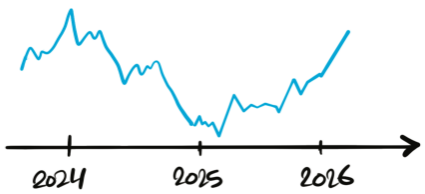


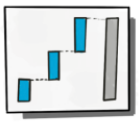
Change-Over-Time "Trends"

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

- Total Sales By Year
- Average Cost By Month

2024	300
2025	100
2026	200



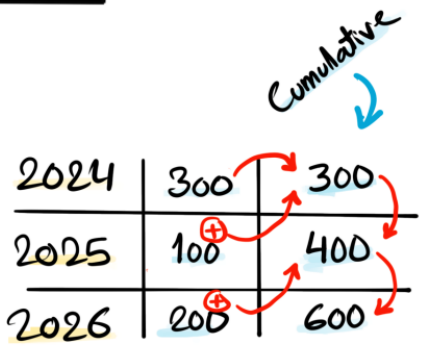


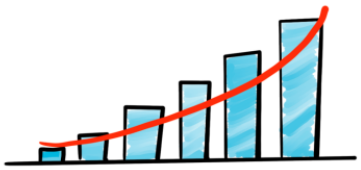
Cumulative Analysis

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

Running Total Sales By Year

Moving Average of Sales By Month





WINDOW FUNCTIONS

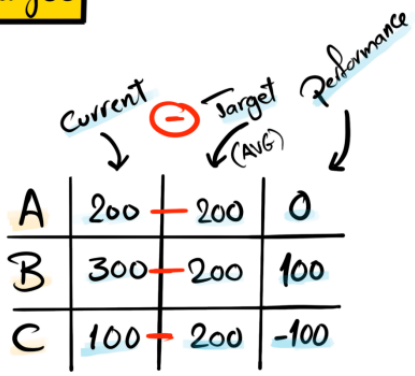
Performance Analysis

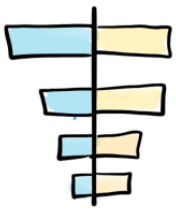
Current [Measure] – Target [Measure]

Current Sales – Average Sales

Current Year Sales – Previous Year Sales

Current Sales – lowest Sales





WINDOW FUNCTIONS

Part-to-Whole

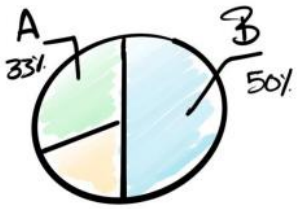
Proportional Analysis

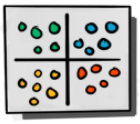
([Measure] / Total [Measure]) * 100 By [Dimension]

(Sales / Total Sales) * 100 By Category

(Quantity / Total Quantity) * 100 By Country

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



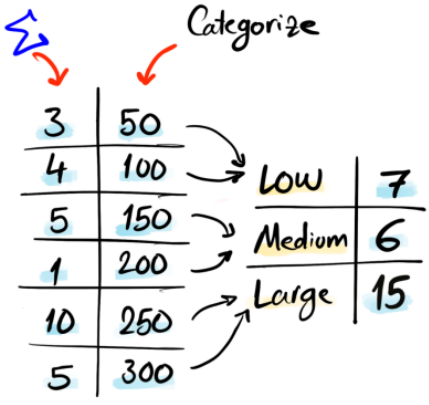


Data Segmentation

[Measure] By [Measure]

Total Products By Sales Range

Total Customers By Age



CASE WHEN STATEMENT