Star Schema

In this project, **Sales_Fact** is used as the central fact table and is directly connected to **Customer_Dim, Product_Dim, Region_Dim, and Date_Dim**.

- Simple structure shaped like a star
- One-to-Many relationships
- Easy to understand and better performance
  Used as the **primary data model** for sales analysis.

Snowflake Schema

In a snowflake schema, dimension tables are further **normalized into multiple related tables**.

- More complex structure with additional joins
- Improves data organization but reduces simplicity
- In this project, **Returns_Fact linked with Sales_Fact** demonstrates a **snowflake-like structure** and helps handle inactive relationships.

Used to demonstrate **advanced modeling and relationship handling**.

In short:

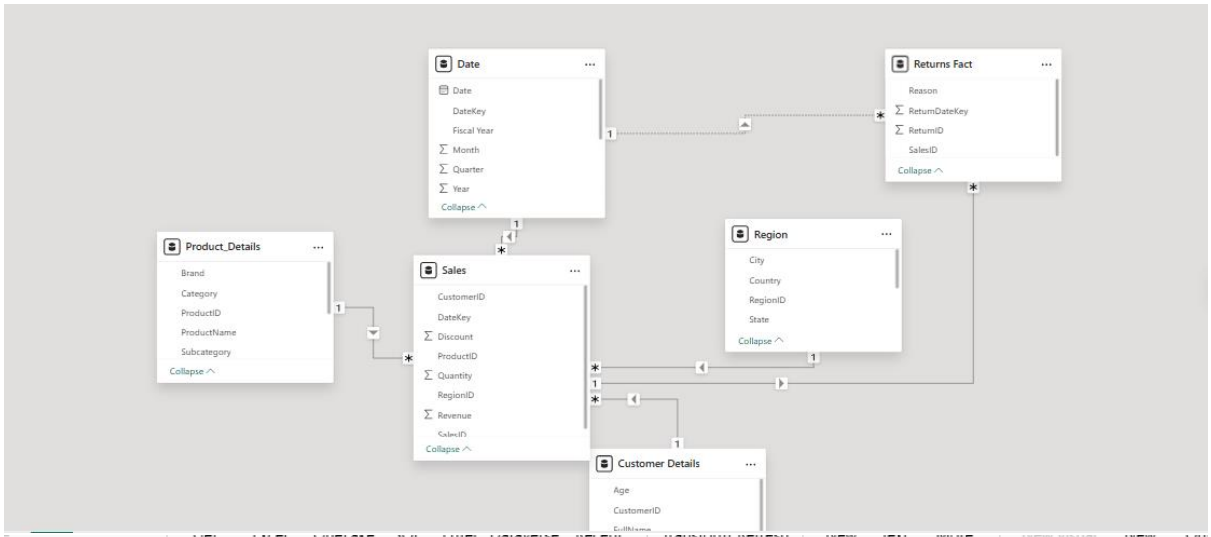
- *Star Schema* → Simple, fast, and user-friendly
- *Snowflake Schema* → Normalized, structured, and complex

Relationship ambiguity:
Multiple date relationships between *Sales_Fact* and *Returns_Fact* caused ambiguity.
Resolved by creating an **inactive relationship** for ReturnDateKey and managing it carefully.

Incorrect cardinality risk:
There was a possibility of incorrect many-to-many relationships between fact and dimension tables.
Resolved by properly defining **Primary Keys and Foreign Keys** and enforcing **1-to-Many** cardinality.

Filter direction issues:
Bi-directional filters initially produced unexpected results.
Resolved by using **single-direction filters** and enabling bi-directional filters only where justified.

Data quality issues:
Some columns contained blank values or incorrect data types.
Resolved by cleaning and transforming data in **Power Query** (removing blanks and correcting data types).



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Data

Transform data | Refresh

Queries

New visual | Text box | More visuals

Insert

New visual calculation | New measure | Qu

Calculations

Segment	Sum of Revenue
Gold	95597
Platinum	93893
Silver	97436
Total	**286926**

ProductID	ProductName	Subcategory
1	Product 1	Shirt
2	Product 2	Mobile
3	Product 3	Jeans
4	Product 4	Sofa
5	Product 5	Mobile
6	Product 6	Laptop
7	Product 7	Table
8	Product 8	Table
9	Product 9	Laptop
10	Product 10	Sofa
11	Product 11	Laptop
12	Product 12	Table

Reason	FY2022	FY2023	Total
Damaged	15	19	**34**
Not Needed	17	18	**35**
Wrong Item	15	16	**31**
Total	**47**	**53**	**100**

Year	Quarter	Month	Date
2022	1	1	01 January 2022
2022	1	1	02 January 2022
2022	1	1	03 January 2022
2022	1	1	04 January 2022
2022	1	1	05 January 2022
2022	1	1	06 January 2022
2022	1	1	07 January 2022
2022	1	1	08 January 2022
2022	1	1	09 January 2022
2022	1	1	10 January 2022
2022	1	1	11 January 2022
2022	1	1	12 January 2022

Country	State	City
Germany	BW	City 10
Germany	BW	City 18
Germany	BW	City 23
Germany	BW	City 33
Germany	CA	City 31
Germany	CA	City 49
Germany	DL	City 20
Germany	DL	City 25
Germany	MH	City 21
Germany	MH	City 32
Germany	MH	City 42
Germany	MH	City 7