# ASSIGNMENT-11

**September 16, 2025**

## DATA MODELLING:

### NORMALIZATION:

Dividing single table into multiple tables with some reference columns.

Example: customer data

| CID | CN | CP | CE | PN | PQ | PID | PP |
|---|---|---|---|---|---|---|---|
| 1 | A | 291 | xy@gmail.com | Milk | 1 L | P1 | 52 |
| 2 | B | . | . | Rice | 1 KG | P2 | 60 |
| 3 | C | . | . | . | . | P1 | . |
| . | . | . | . | . | . | . | . |
| 100 | ABC | 892 | . | . | . | . | . |

- It is the process of splitting the database into multiple tables so that we can reduce redundancy and improve data integrity.
- In powerBI, fact and dimension tables are two types of tables used to build the data model.

**Fact**: fact tables will have measurable or quantitative data / Numerical data.

**Dimension**: Dimension table will contain unique categorical data.

**Data Model creation**: Cardinality is the relationship between two tables in the data model.

It is defined by 4 types:

1. One to one
2. One to many
3. Many to one
4. Many to many

Why data modelling?

- To remove unnecessary columns and rows.
- To perform group by and summarize
- Optimise column and data types

- Use custom columns.

**Schema:**

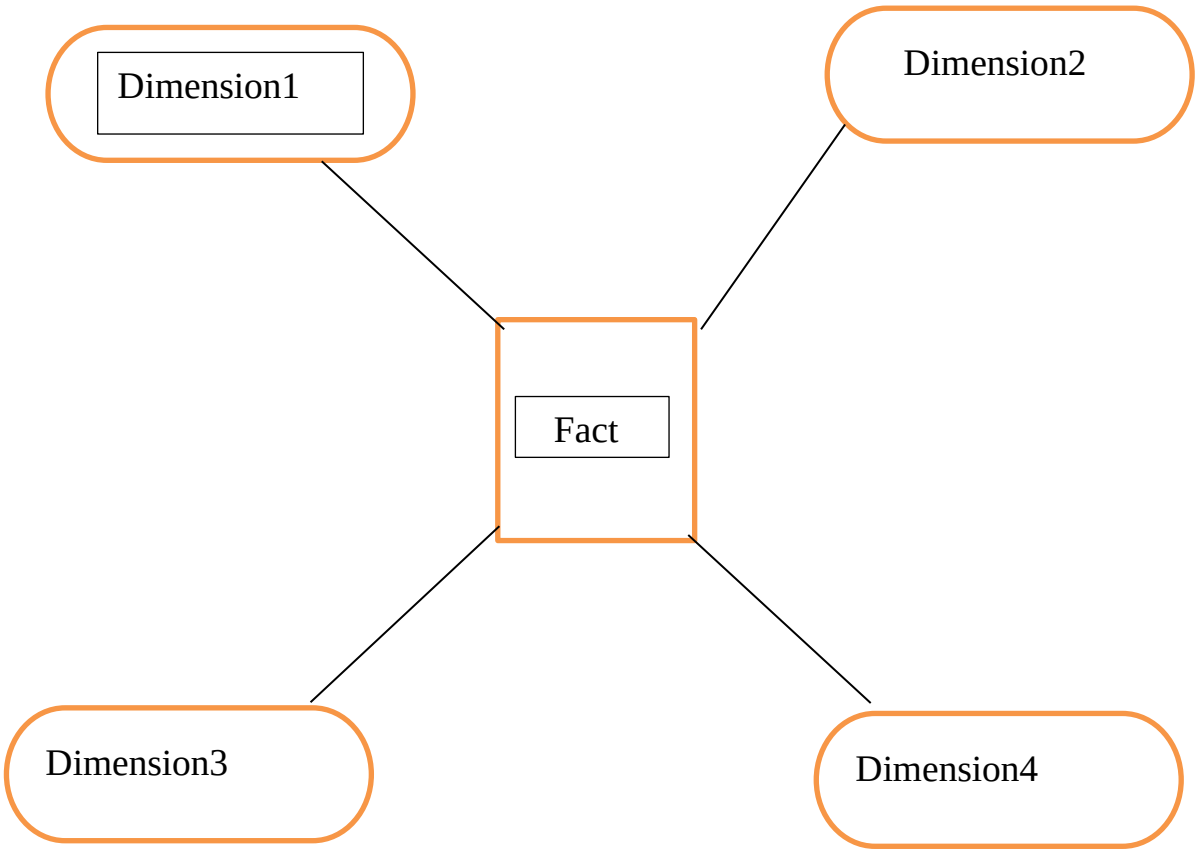
It is the structure of data model that defines how the data is connected and organized.

There are 3 types:

1. Star schema
2. Snow Flake Schema
3. Galaxy schema

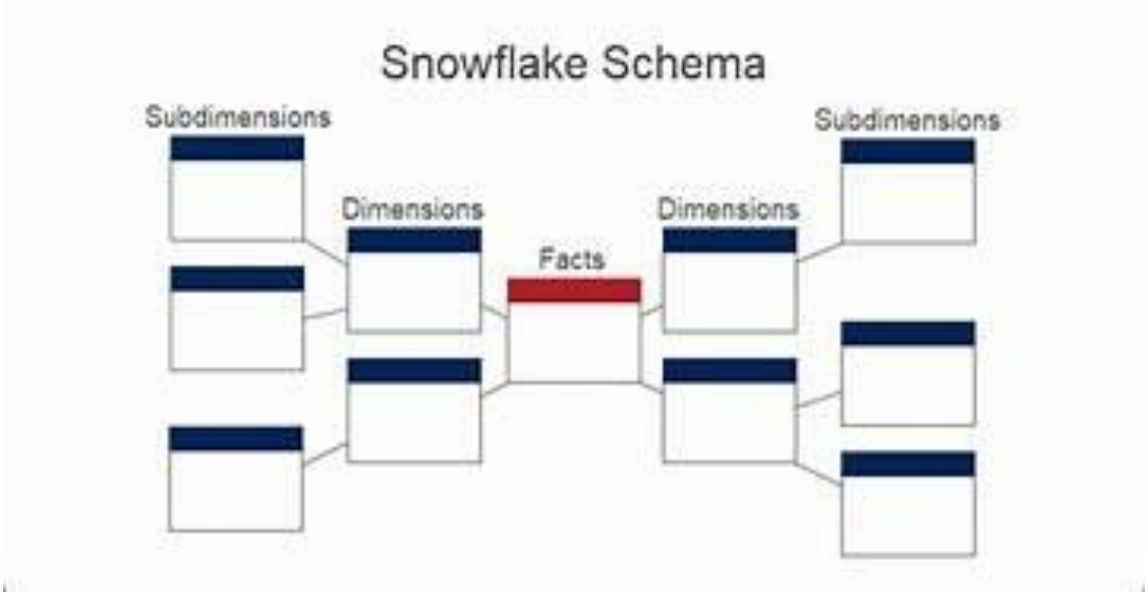
1.Star Schema:

- One fact table to this will connect all dimension table
- Dimension table in a star schema align with fact giving it a star shape.



2.Snow-Flake Schema:

- Dimension table have sub-division table. Snowflake schema use sub-division to represent additional joins in queries.




- It is not compulsory that all the dimensions should have sub-dimensions.

3.Galaxy Schema:

- This schema contains more than one fact table linked to dimension tables.