

# Star and snowflake schemas

DATA MODELING IN POWER BI

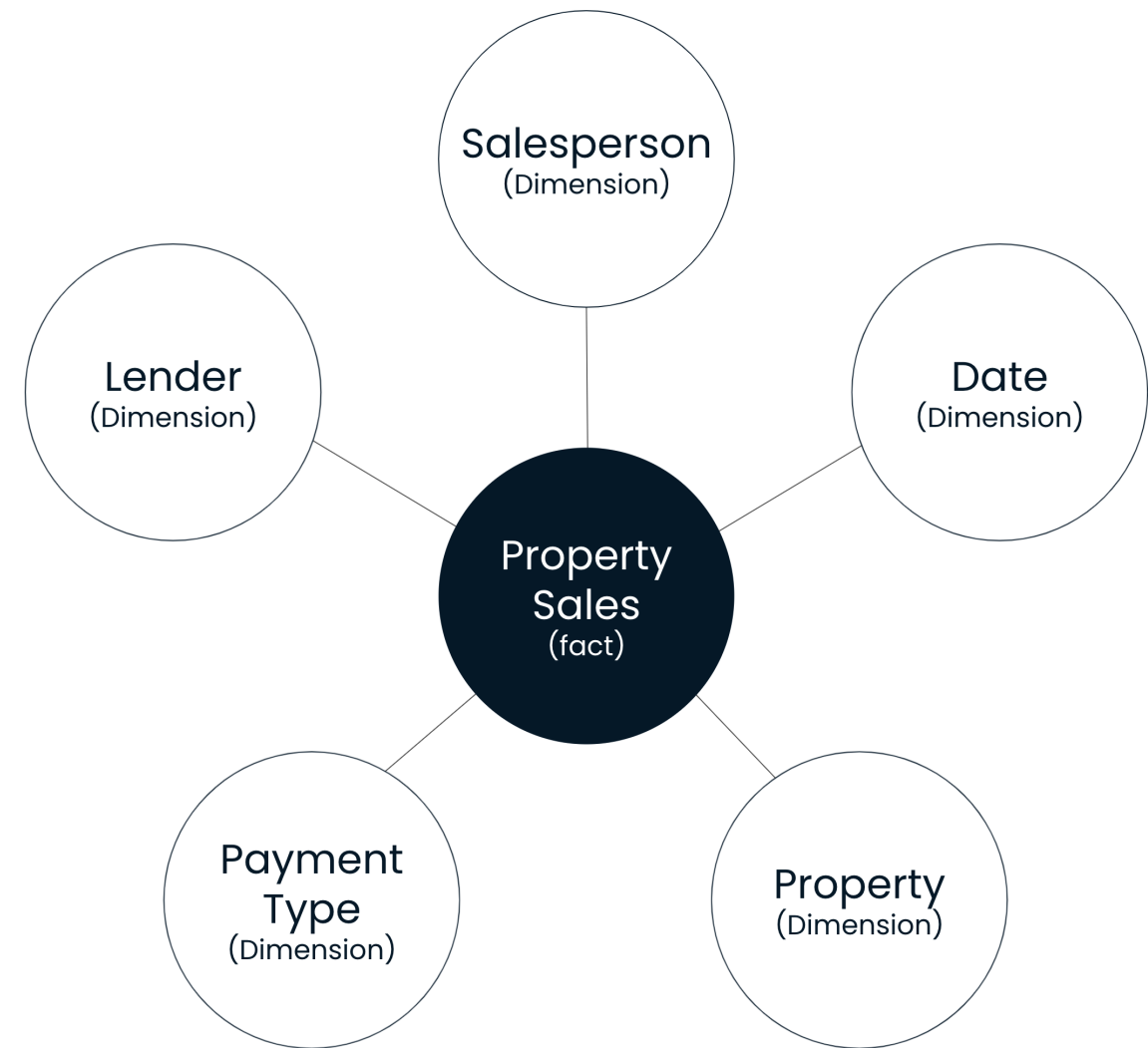


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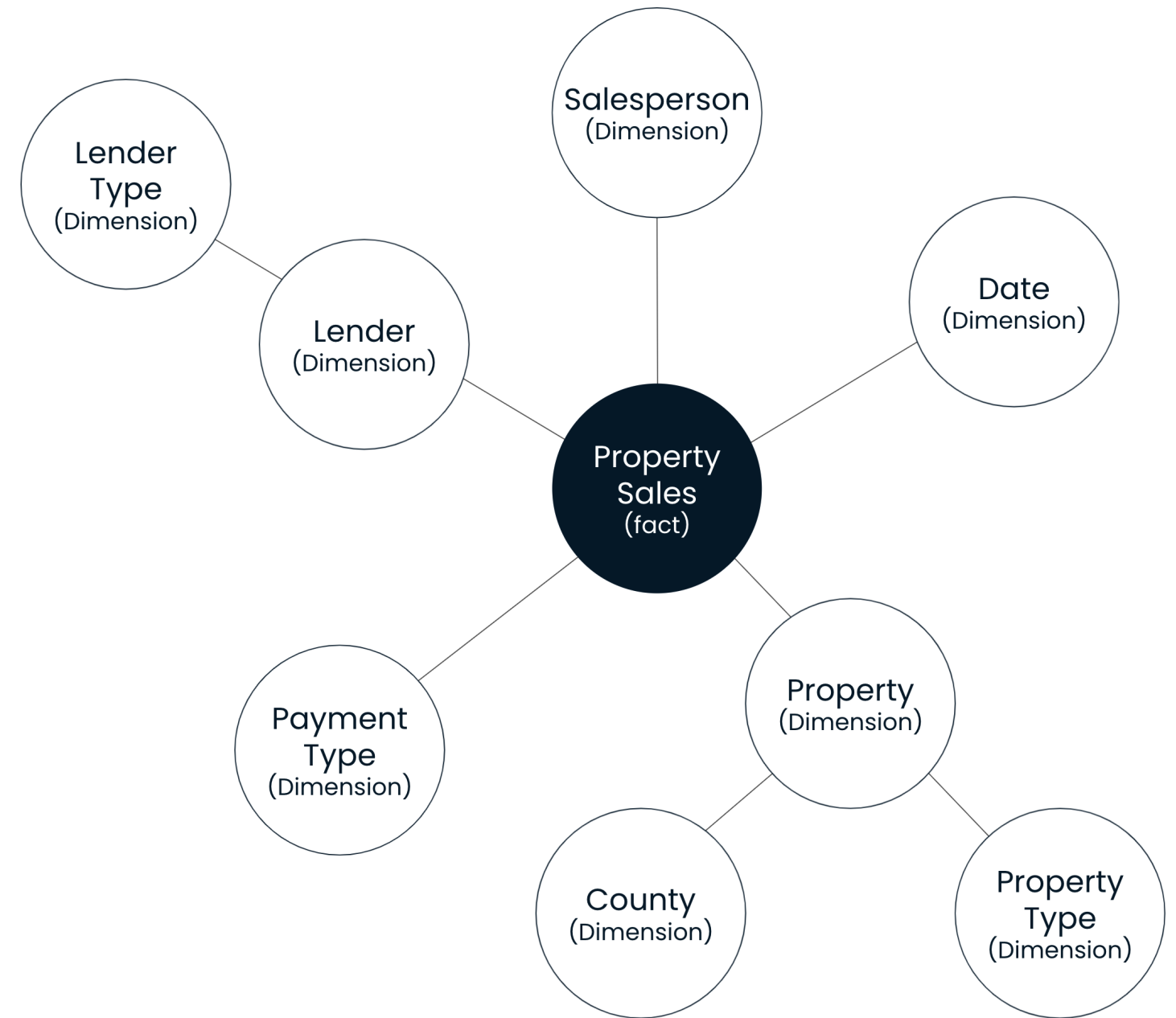
# Star schema

- Fact table(s)
- Surrounded by dimension tables



# Snowflake schema

- Allows relationships between dimensions
- Fact table(s) remain the same



# A closer look

## Star schema

ProductKey	Name	SubCategory	Category
P1	Gloves	Hand	Clothing
P2	Shoes	Foot	Clothing
P3	Laptop	Computers	Electronics
P4	Mittens	Hand	Clothing

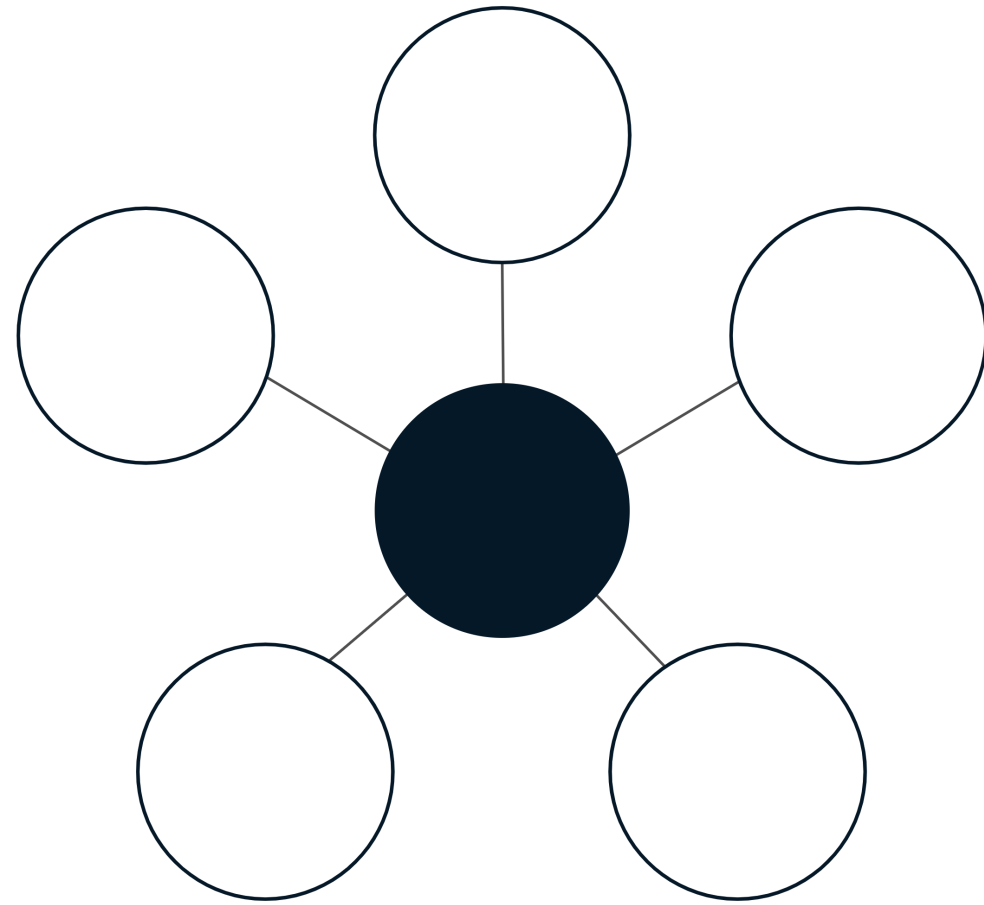
## Snowflake schema

ProductKey	Name	SubCategoryKey
P1	Gloves	S1
P2	Shoes	S2
P3	Laptop	S3
P4	Mittens	S1

SubCategoryKey	SubCategory	CategoryKey
S1	Hand	C1
S2	Foot	C1
S3	Computers	C2

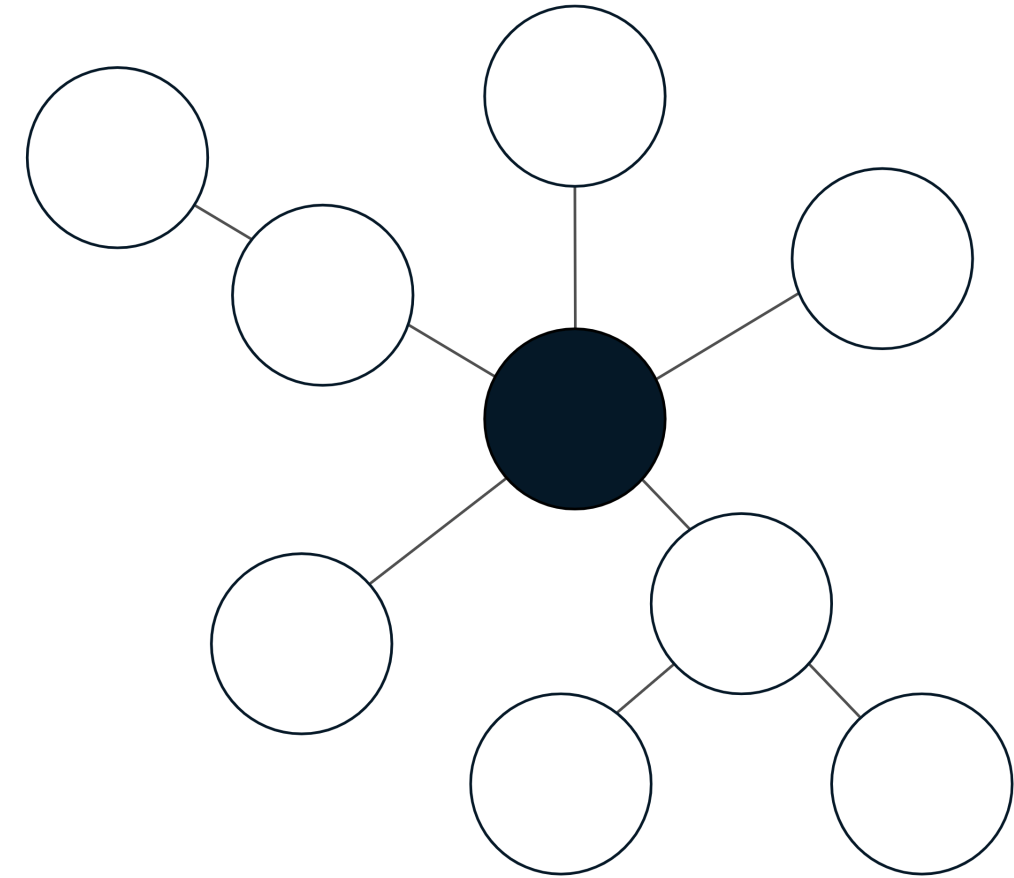
CategoryKey	Category
C1	Clothing
C2	Electronics

## Star schema



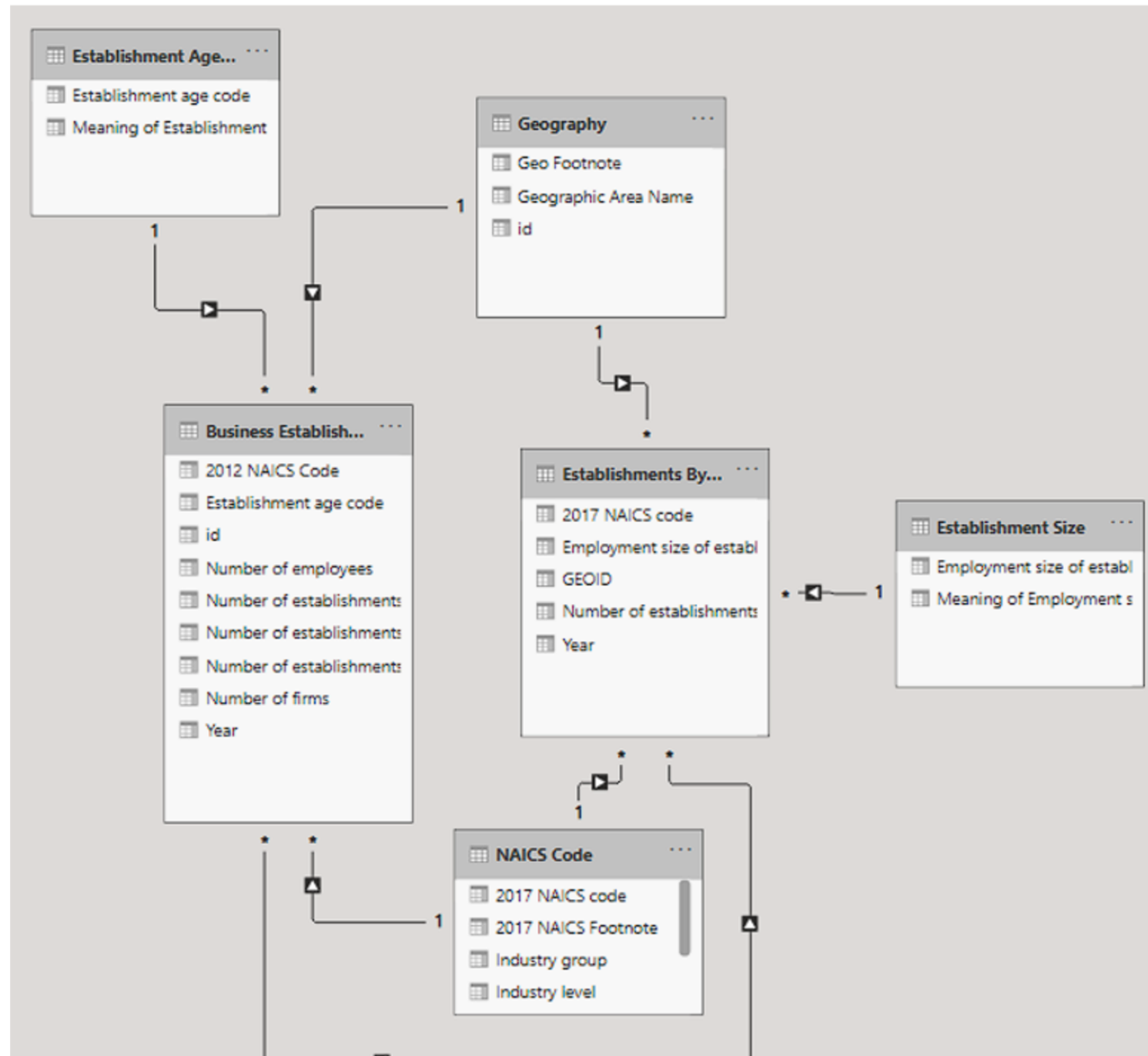
- Preferred approach
- Easy for business users to understand
- Most BI tools optimize for this schema

## Snowflake schema



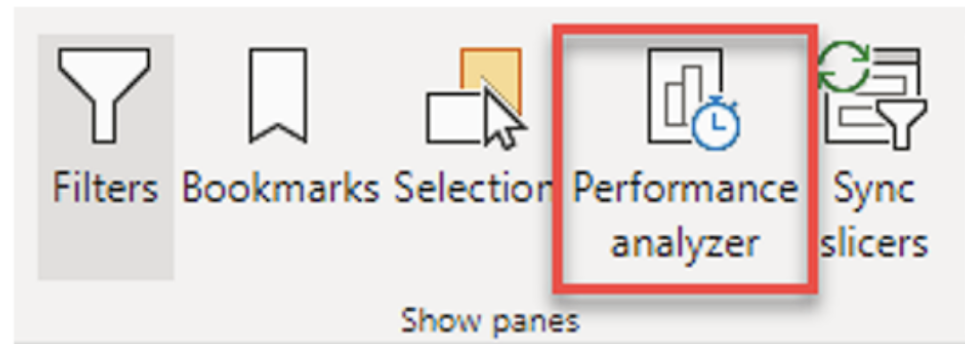
- Used in some data warehouses
- Less duplication
- Updating records is more efficient

# Stars and snowflakes in Power BI



- Both schemas work!
- But Power BI prefers star schemas
  - Easier to understand
  - Performance is less of a concern

# The performance analyzer



- Built-in performance analysis
- Each visual has three components
  - How long did the DAX query take?
  - How long did the visual take to render?
  - How long did everything else take?

Performance analyzer

Start recording Refresh visuals Stop

Clear Export

Name	Duration (ms) ↓
Recording started (4/29/2021 6:58:04 PM)	-
Refreshed visual	-
Number of employees by Meaning of Establishm...	229
Slicer	253
DAX query	13
Visual display	17
Other	224

Copy query

# Performance tuning advice

## DAX Query slowness

- Tune DAX operations
- Improve data loading performance

## Visual display slowness

- Use less complicated visuals
- Show less information on the screen

## Other slowness

- Reduce number of visuals on the page



# Let's practice!

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# Evaluating performance

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**Let's practice!**  
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# Congratulations!

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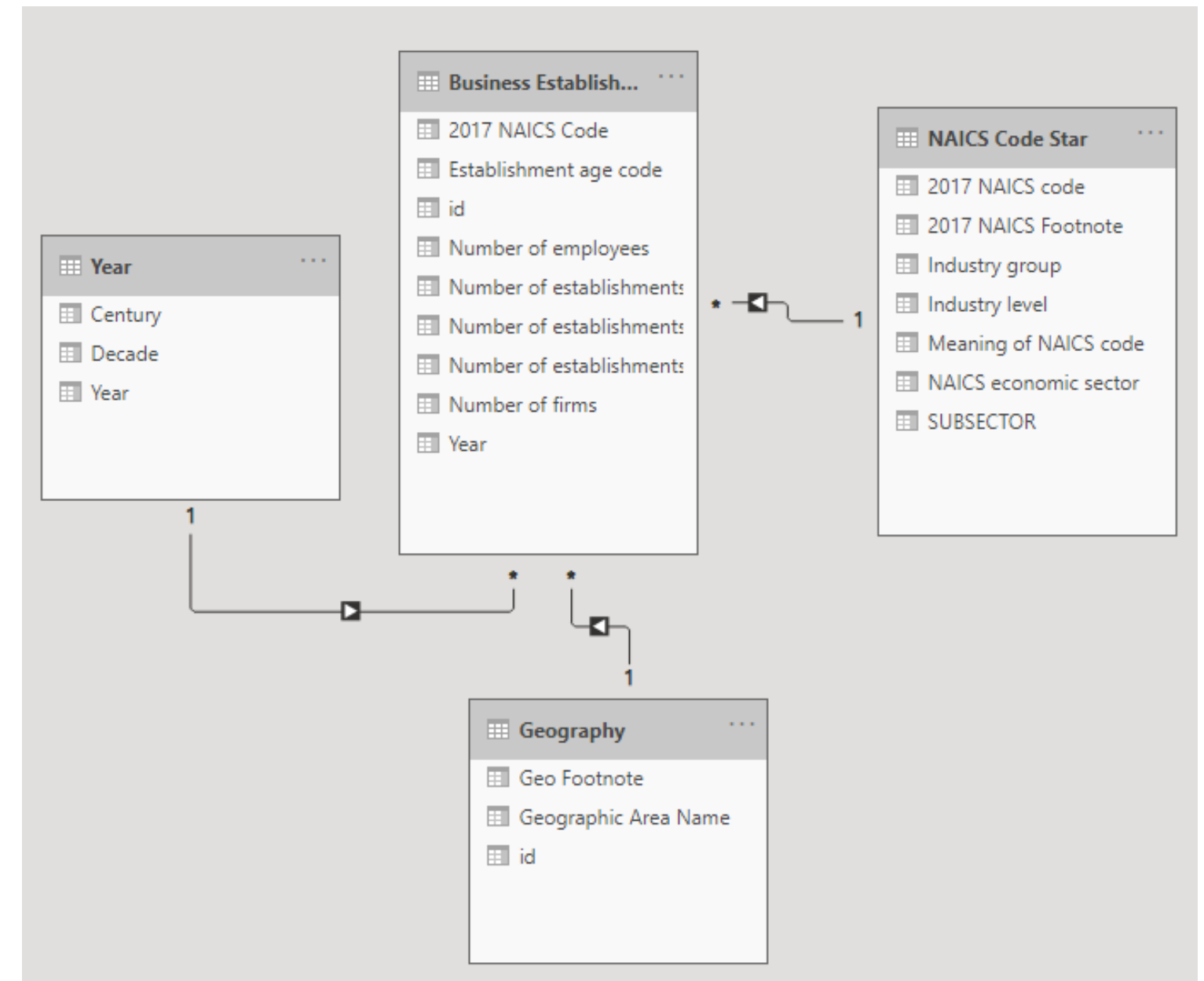


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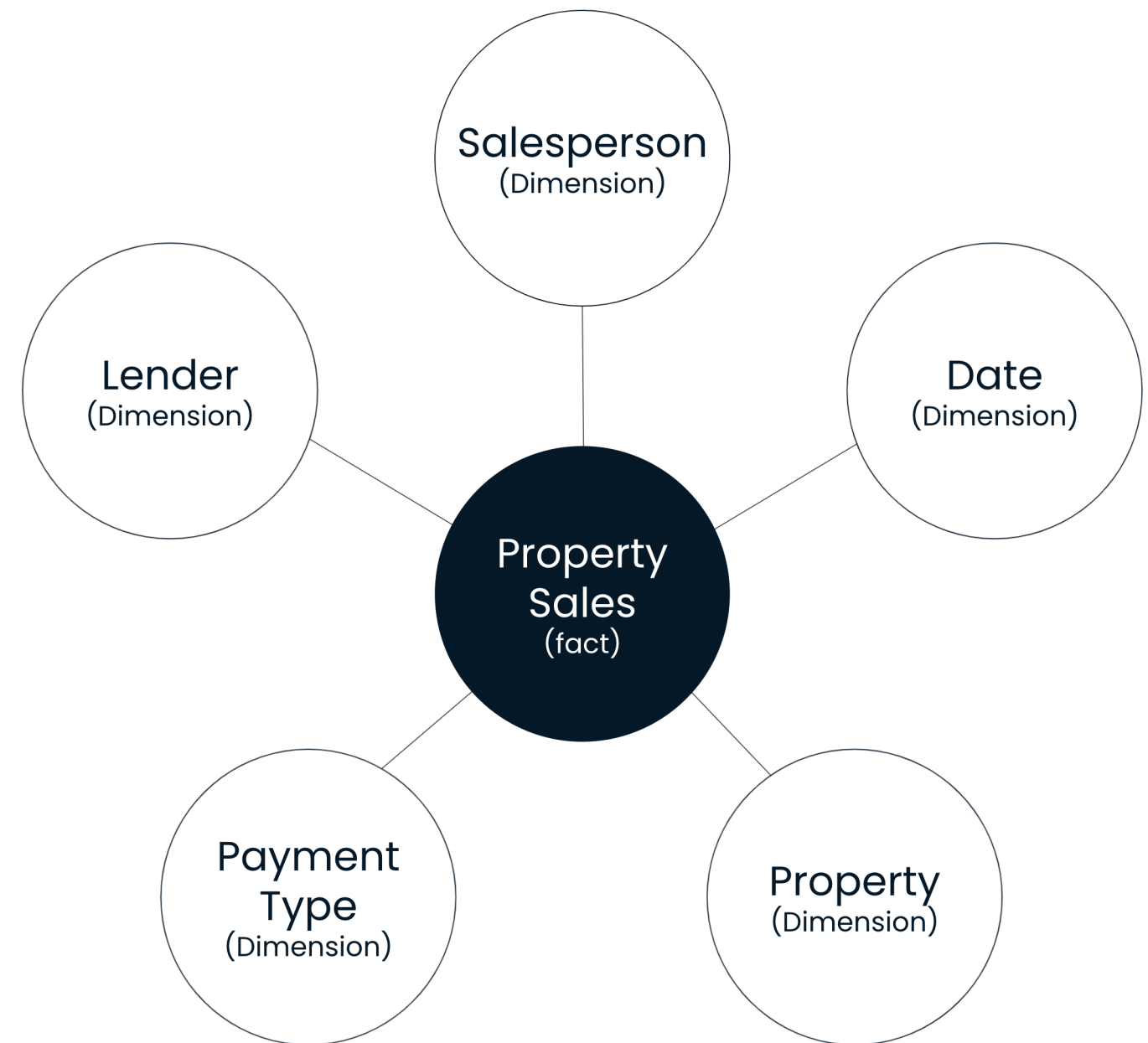
# Defining and shaping tables

- Basic data modeling concepts
- Load and transform data
  - Power BI
  - Power Query
- Merge and append tables



# Dimensional modeling and schemas

- Dimensional modeling (Kimball model)
  - Facts
  - Dimensions
  - Star schemas
  - Snowflake schemas



# Thank you!

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