Working with relationships

INTERMEDIATE DATA MODELING IN POWER BI



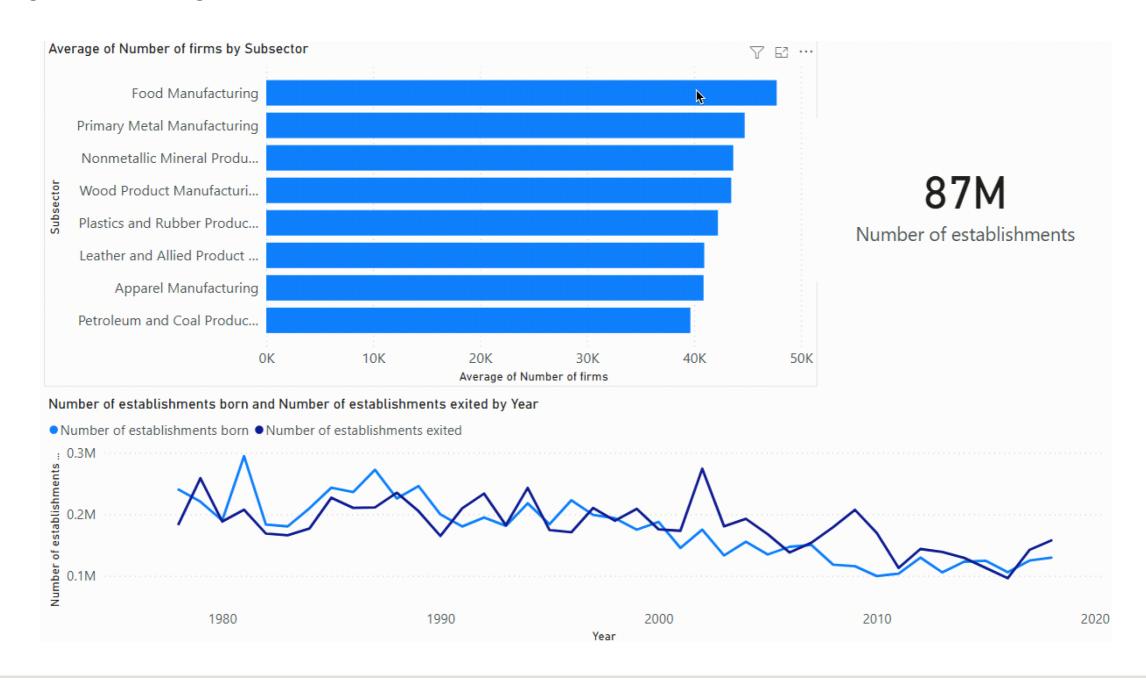
Sara Billen

Curriculum Manager at DataCamp



Cross filtering

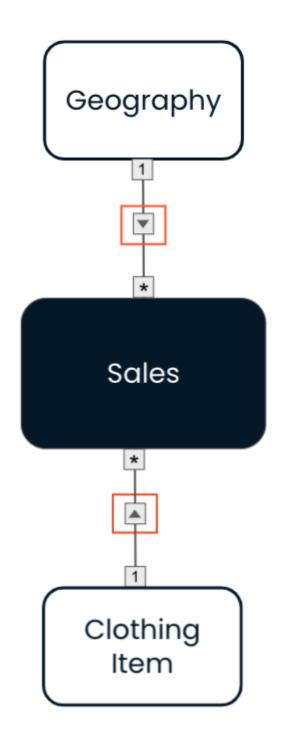
Cross-filtering: Selecting a value in one visual narrows down visible data in other visuals





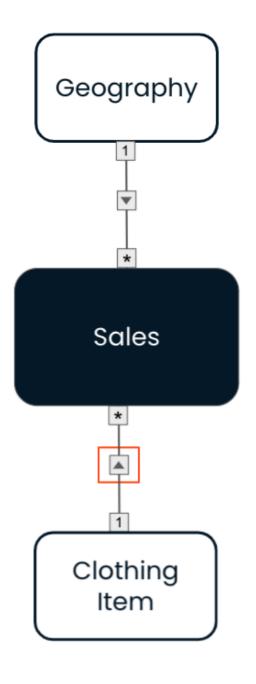
Filter direction

- All relationships have a cross filter direction
- Determines the direction that filters will propagate
- Example:
 - Geography -> Sales
 - Clothing Item -> Sales
- From Dimension to Fact



Filter direction

Data model:



Dimension - Clothing Item

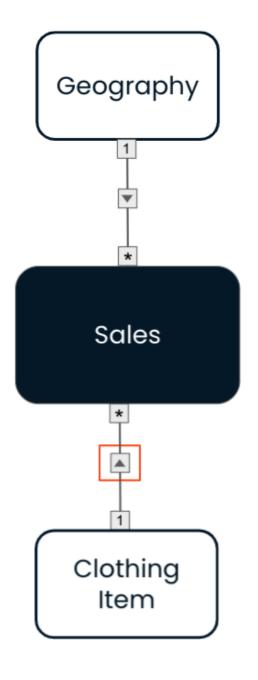
Product Id	Product
C1	T-shirt
C2	Socks
C3	Sweater

Fact - Sales

ld	Units	Amount	Product Id
001	3	60	C2
002	2	10	Cl
003	1	70	C3
004	1	50	C3
005	5	50	C3

Filter direction

Data model:



Dimension - Clothing Item

Product Id	Product	
C1	T-shirt	
C2	Socks	
C3	Sweater	

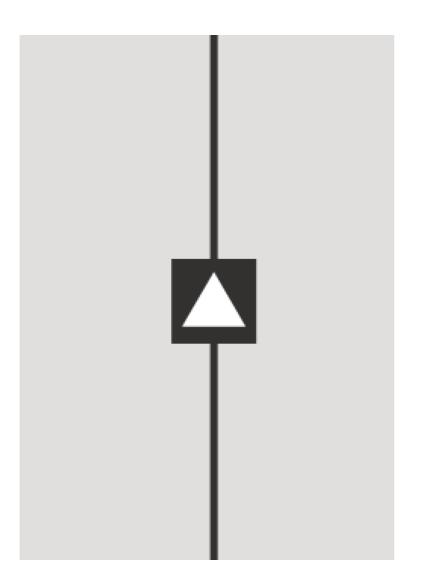
Fact - Sales

Id	Units	Amount	Product Id
001	3	60	C2
002	2	10	C1
003	1	70	C3
004	1	50	C3
005	5	50	C3

Filter direction options

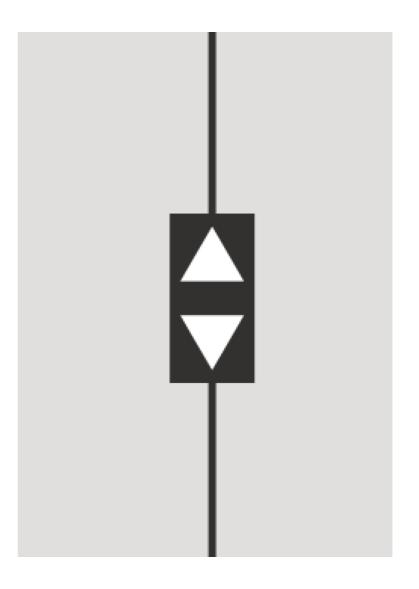
Single direction

Filter in one direction



Bi-directional

Filter in both directions



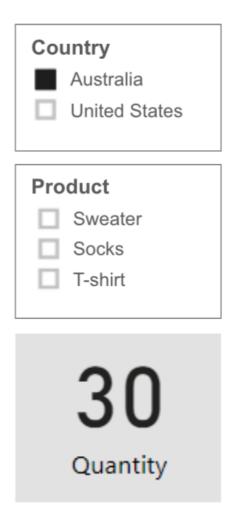
Bi-directional filtering: use case

Show only relevant slicer entries

Data model:

Geography Sales Clothing Item

Report view:



Bi-directional filtering: use case

Only sweaters were sold in Australia

Fact - Sales

Id	Units	Amount	Product Id	Country Id
001	3	60	C2	US
002	2	10	C1	US
003	1	70	C3	AU
004	1	50	C3	AU
005	5	50	C3	AU

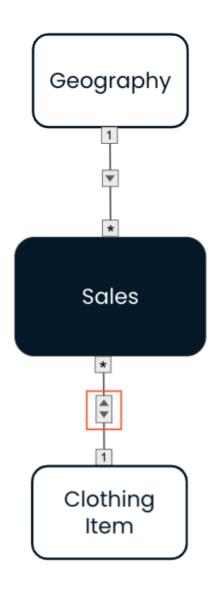


^{*}Product Id: C3 = Sweater, Country Id: AU = Australia

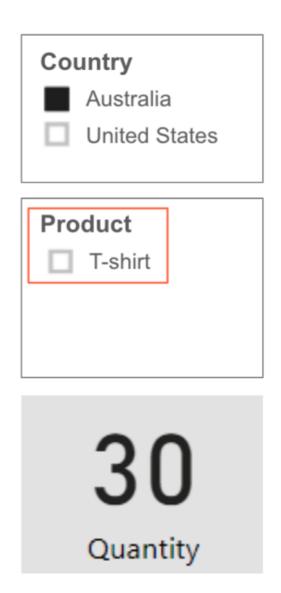
Bi-directional filtering: use case

Show only relevant slicer entries

Data model:

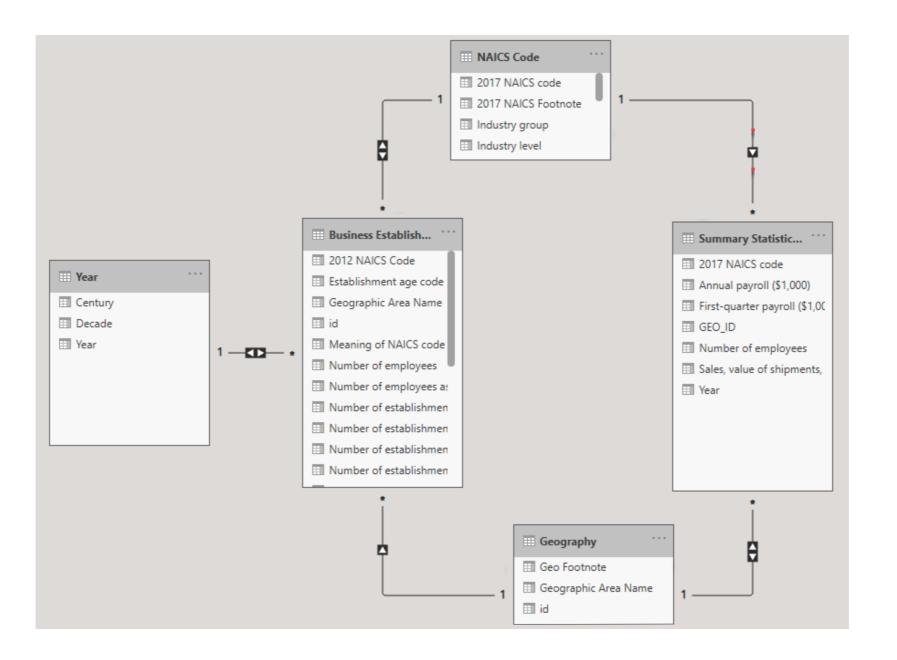


Report view:



Bi-directional filtering and paths

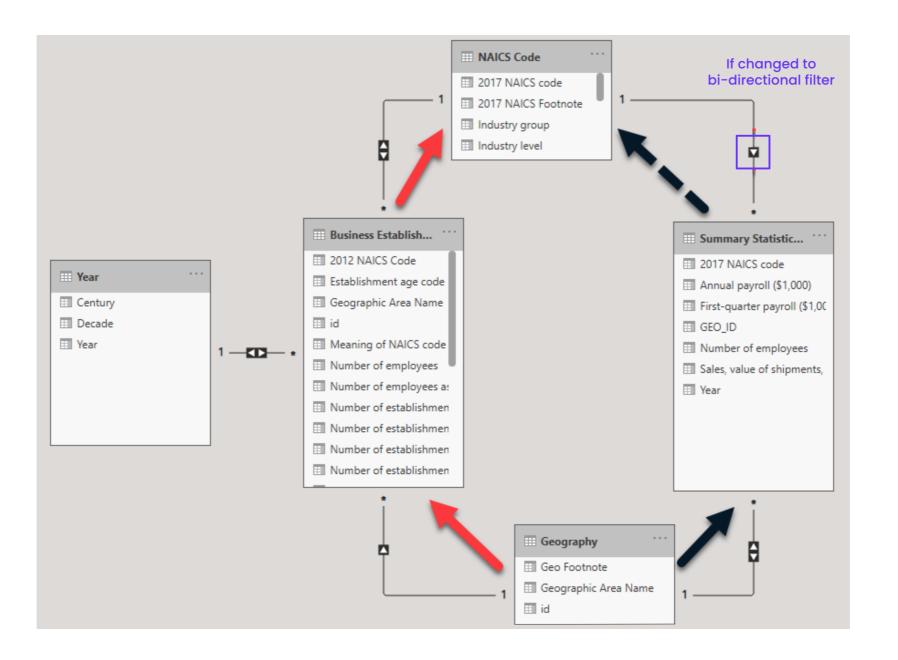
Bi-directional filters cannot allow for two separate paths between two tables





Bi-directional filtering and paths

Bi-directional filters cannot allow for two separate paths between two tables





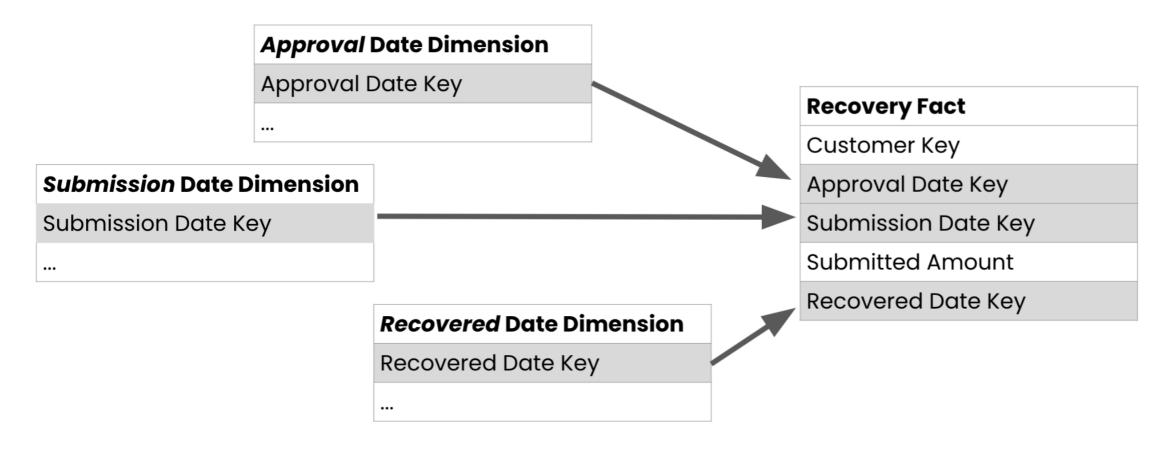
Role-playing dimensions

• Sometimes we need to create multiple relationships between tables

Date Dimension	Recovery Fact
Date Key	Customer Key
Year	Approval Date Key
Month	Submission Date Key
Day of Month	Submitted Amount
Day of Week	Recovered Date Key

Role-playing dimensions

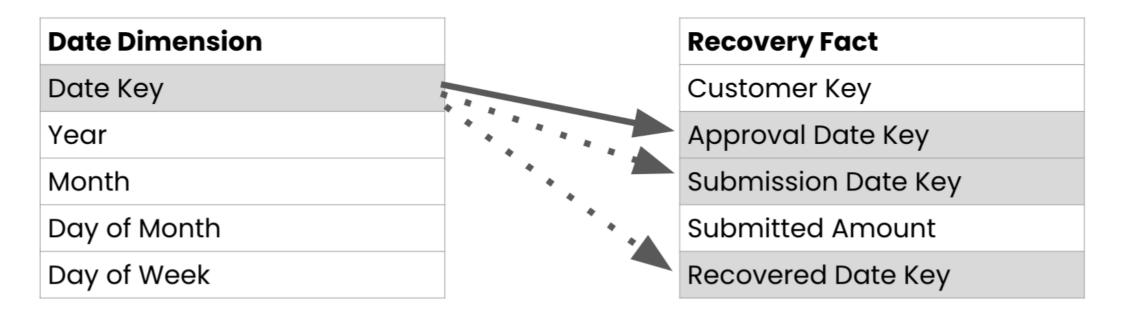
- Kimball model
- Role-playing dimension:
 - Dimension that can filter related facts differently
- Typically implemented as views of the Date dimension





Role-playing dimensions in Power BI

• Create multiple relationships on a dimension, but only one is active



• Use USERELATIONSHIP() in DAX to specify which relationship to use:

Let's practice!

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Cross-filtering and role-playing Dimensions

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Let's practice!

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