Granularity, measures, and hierarchies

INTERMEDIATE DATA MODELING IN POWER BI



Maarten Van den Broeck Content Developer at DataCamp



Understanding granularity

- Granularity: at what level is the data stored with respect to dimensions?
- The minimum level of detail to query on
- Define granularity with "by" statements:
 - E.g. by customer, by product, by day
 - \circ E.g. by id, by NAICS 1 code, by establishment age, by year

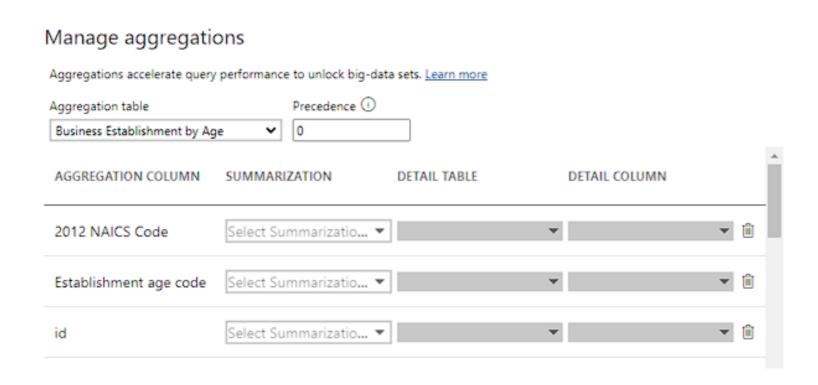
id 🔻	2012 NAICS Code	Establishment age code	Year 🔻	Number of firms 🔻	Number of establishments	Number of employees 💌
0100000US	31-33	110	1978	0	0	0
0100000US	31-33	110	1979	0	0	0
0100000US	31-33	110	1980	0	0	0
0100000US	31-33	110	1981	0	0	0
0100000US	31-33	110	1982	0	0	0
0100000US	31-33	110	1983	0	0	0
0100000US	31-33	110	1984	0	0	0
0100000US	31-33	110	1985	0	0	0

¹ NAICS: North American Industry Classification System

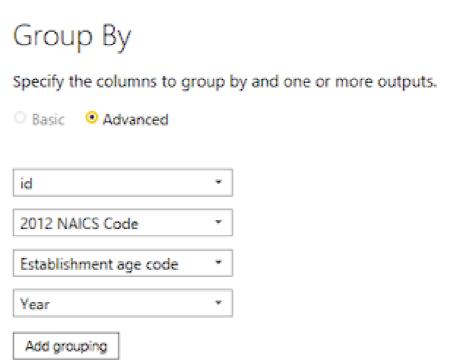


Handling granularity in Power Bl

Getting to a finer grain: not advisable!



- Getting to a coarser grain: aggregations and grouping
 - Better query performance with fewer rows
 - Smaller cache sizes and faster refresh time





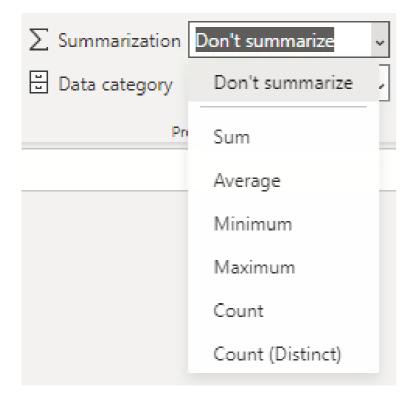
Measures

- Fields or combinations of fields which can be aggregated or calculated
 - Comes directly from fact data
 - New measures can be calculated as well

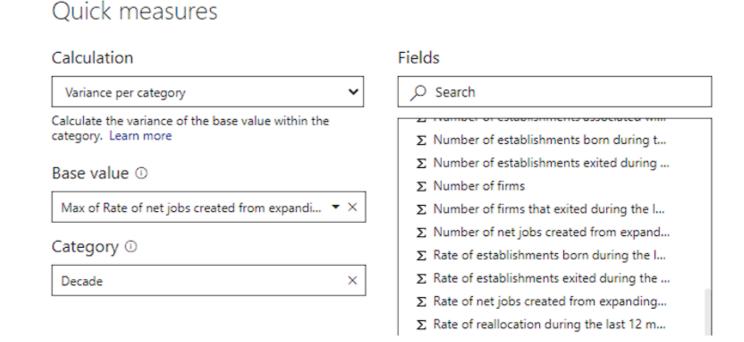
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0100000US	31-33	110	1983	0	0	0
0100000US	31-33	110	1984	0	0	0
0100000US	31-33	110	1985	0	0	0
0100000US	31-33	110	1986	0	0	0

Creating measures

 Numeric values are automatically converted to measures and aggregated by the sum



 Create your own measures in Power BI using DAX Create specific types of calculations using a dialog: Quick measures



 Great for learning how to create moderately complex measures

Hierarchies

Allow users to drill down into data dimensions

Natural hierarchies

- Levels of the hierarchy exist "in the real world"
- Year -> Month -> Day

Artificial hierarchies

- Levels are created for querying purposes
- Intake year -> Favorite color -> Favorite sport

Let's practice!

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Hierarchies and measures in Power BI

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