

Identifying performance problems

INTERMEDIATE DATA MODELING IN POWER BI



Sara Billen

Curriculum Manager at DataCamp

Resolving performance problems



Performance problems



Where things can go wrong:

- Data import
- Querying the database with DirectQuery
- Displaying visuals
- Calculated versus computed columns
- Inefficient relationships
 - Many-to-many relationships
 - Bi-directional cross-filtering

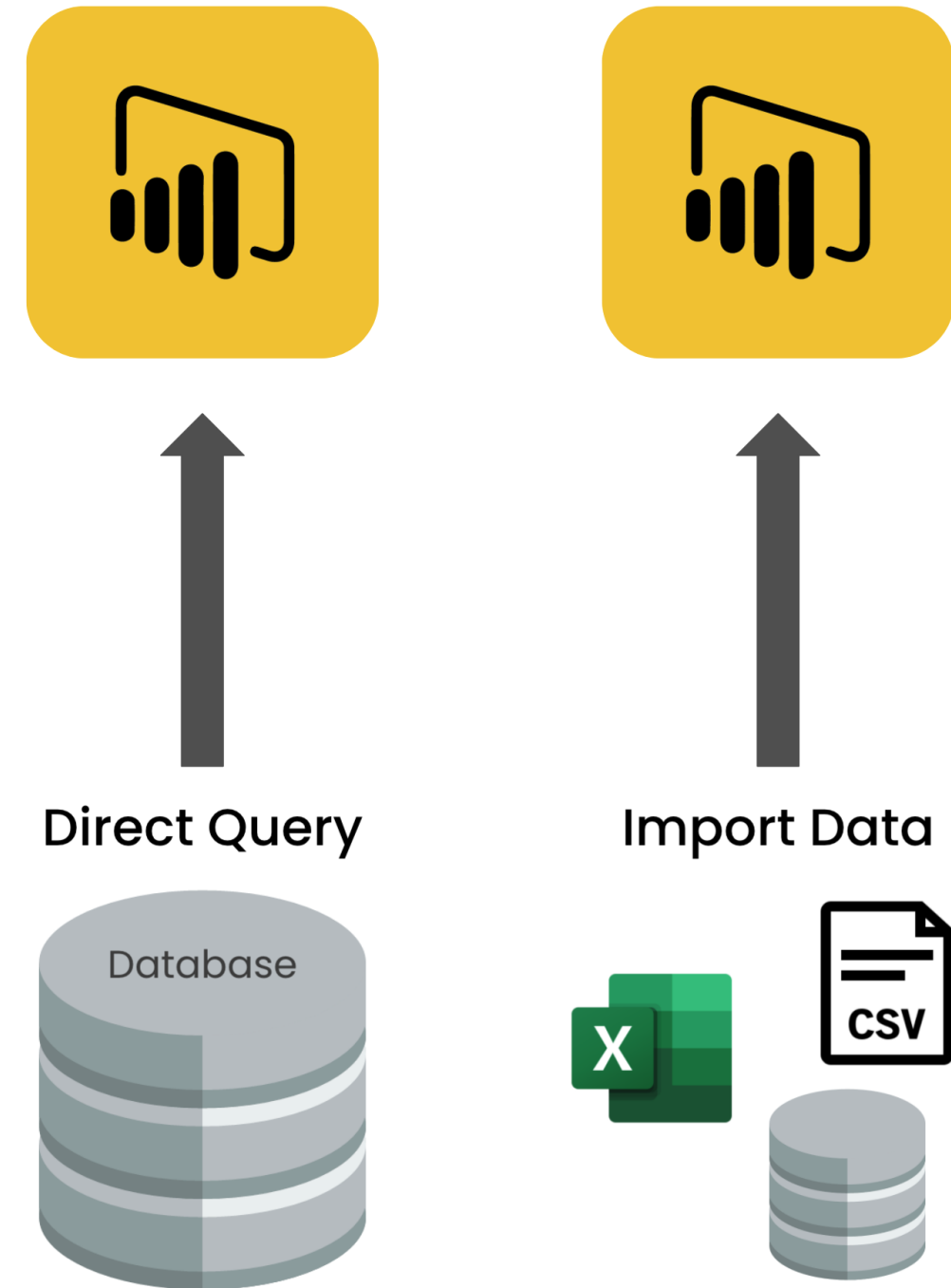
Optimizing data import

- Remove unnecessary rows and columns
- Choose correct data types
 - Numeric data takes less space
 - Casting and aggregating data is slower
- Group and summarize data
 - Store less data on disk
 - Get to aggregate results faster



Optimizing Direct Query

- Two ways to connect to data:
 - **Import model:** stores data in Power BI
 - **Direct Query:** directly queries the database
- Limit parallel queries
- Relational database advice
 - Write efficient SQL queries
 - Use appropriate indexes
 - Get the right columns and rows



Calculated versus computed columns

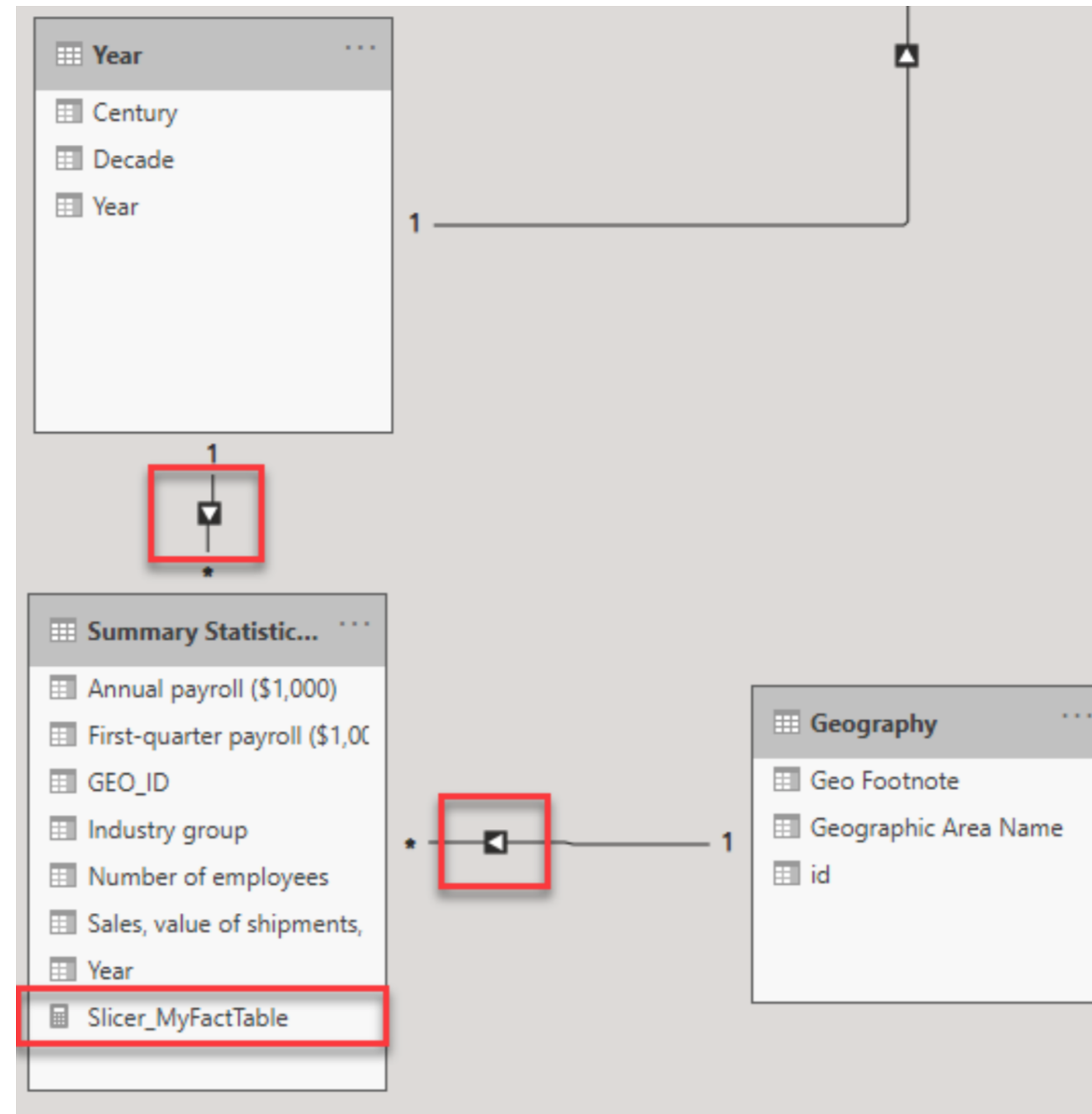
Build custom columns with:

Calculated columns	Computed columns
DAX	Power Query (M)
Fast for <i>simple</i> calculations	Fast for <i>simple</i> calculations
Slow for <i>complex</i> calculations	Fast for <i>complex</i> calculations
Generated per visual at runtime	Generated once at import time

Removing bi-directional filtering using filter measures

- Use case for bi-directional filtering
 - Find relevant slicer entries between dimensions
- We can create filter measures to avoid bi-directional relationships for the third use case!

Removing bi-directional filtering using filter measures



Removing bi-directional filtering using filter measures

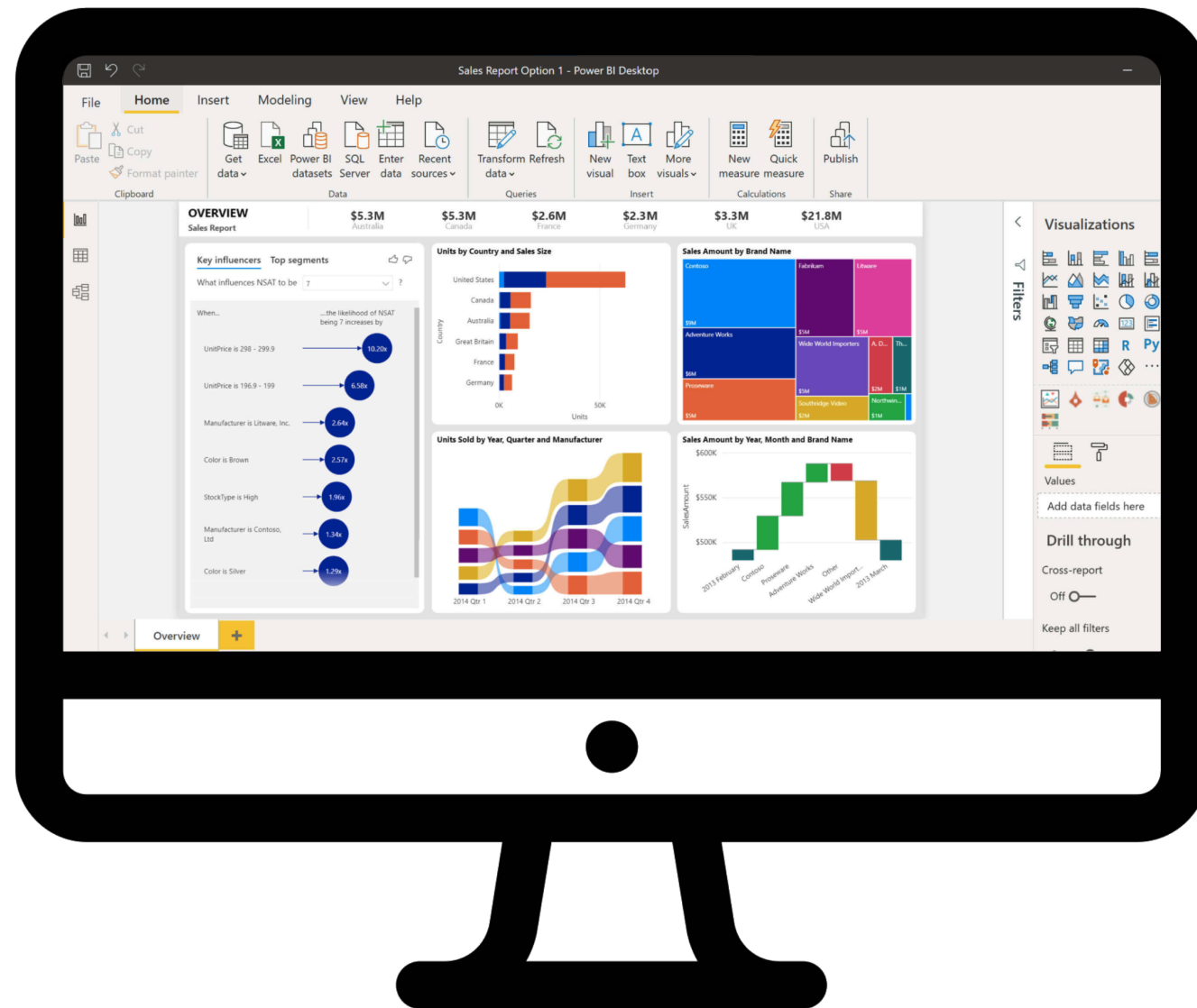
1) Create a filter measure in DAX:

```
Slicer_MyFactTable = INT(NOT ISEMPTY('My Fact Table'))
```

- Returns 1 if at least one value in the fact table
- Returns 0 if no values in the fact table

2) Add a visual filter to the slicer and set where `Slicer_MyFactTable = 1`

Displaying visuals



- Use restrictive filters to minimize data
- Show as little data as possible on visuals
- Limit the number of visuals on report pages
- Use only fast custom visuals

Let's practice!

INTERMEDIATE DATA MODELING IN POWER BI

Performance tips in Power BI

INTERMEDIATE DATA MODELING IN POWER BI



Sara Billen

Curriculum Manager at DataCamp

Let's practice!

INTERMEDIATE DATA MODELING IN POWER BI

Congratulations!

INTERMEDIATE DATA MODELING IN POWER BI



Sara Billen

Congratulations!

Intermediate Data Modeling

- Date dimensions and relationships
- Hierarchies and granularity
- Bi-directional cross filtering
- Role-playing dimensions
- Performance optimization

Thank you!

INTERMEDIATE DATA MODELING IN POWER BI