A Journey to Power BI

A Guide to use Self-service BI

Leila Etaati

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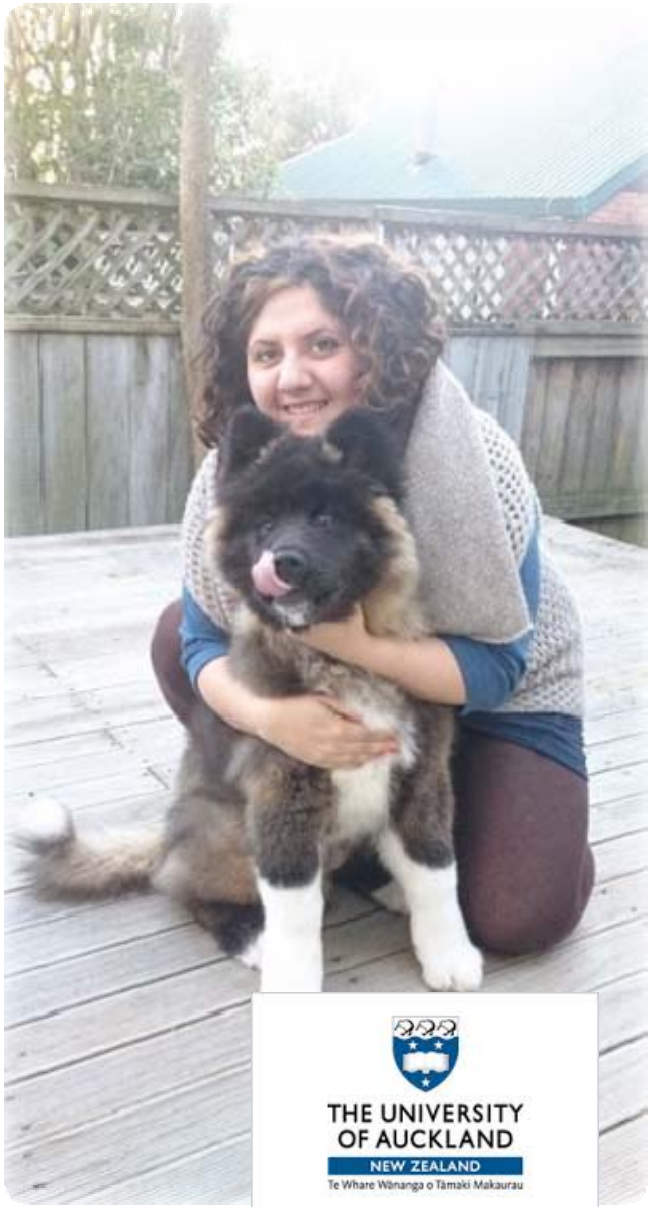
Our Sponsors

About Leila Etaati

- 10 years experience in SQL server
- PhD in Information System
  Department, Business School
  University of Auckland
- Lecturer and Tutor of BI
  and Database design
- System design in University of Auckland

RADACAD



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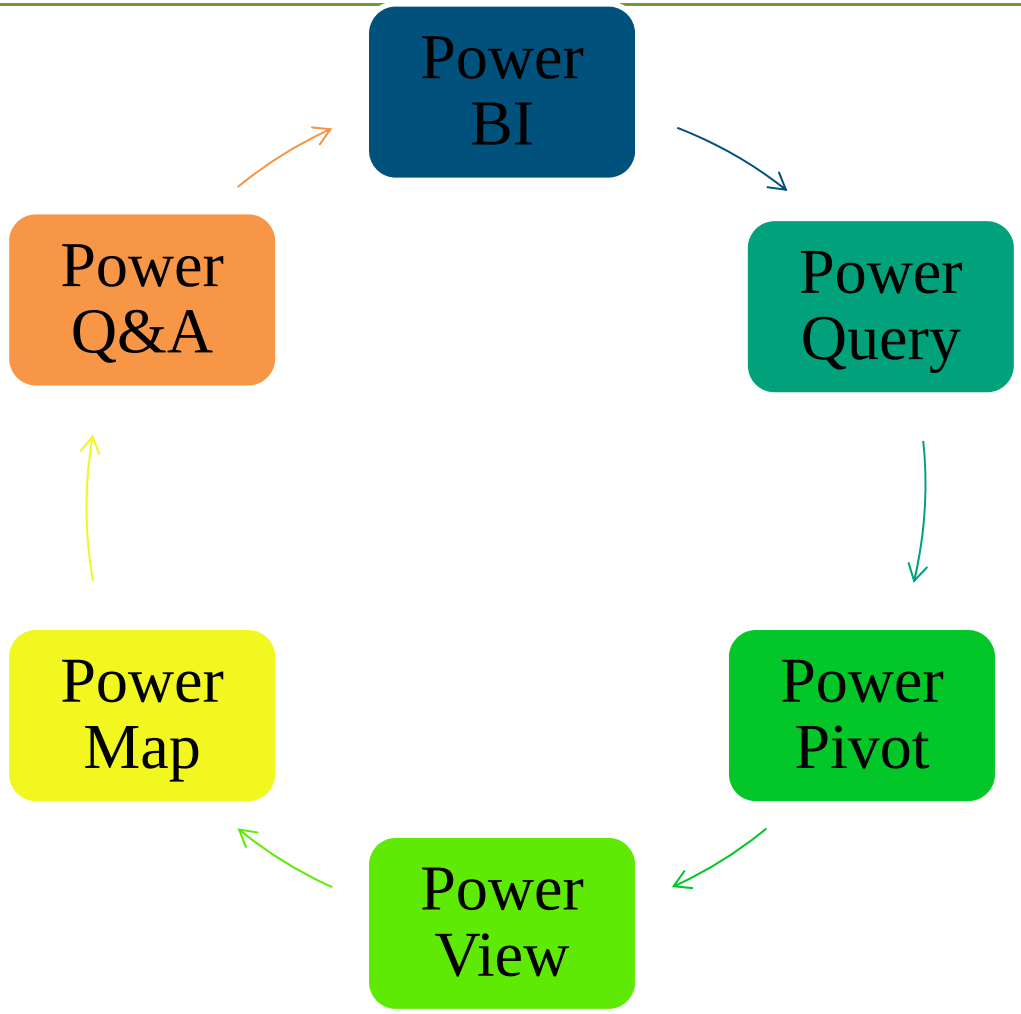
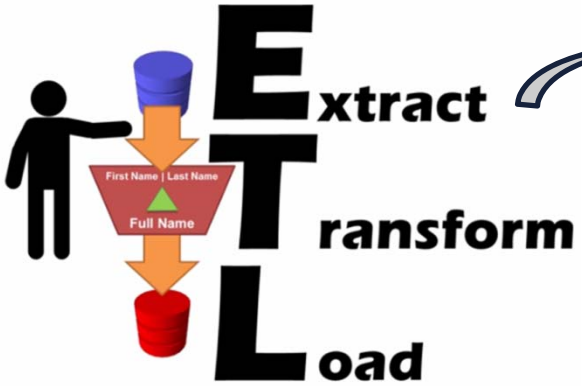
Agenda

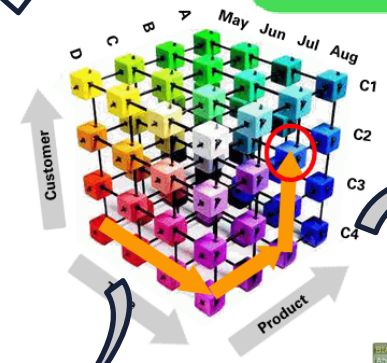

Power BI
Power Query
Power Pivot
Power View
Power Map
Power Q&A

Power BI

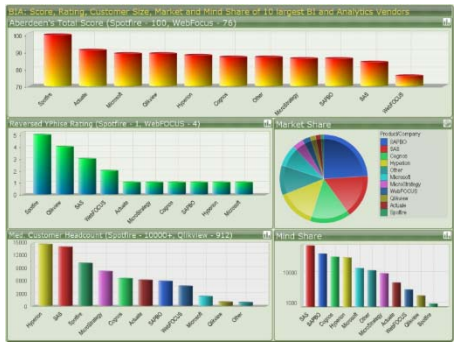


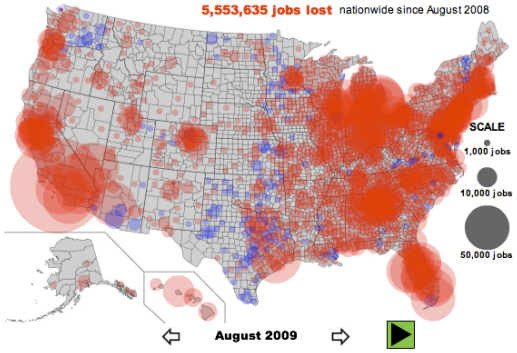
Power Query

Power Pivot



Power View

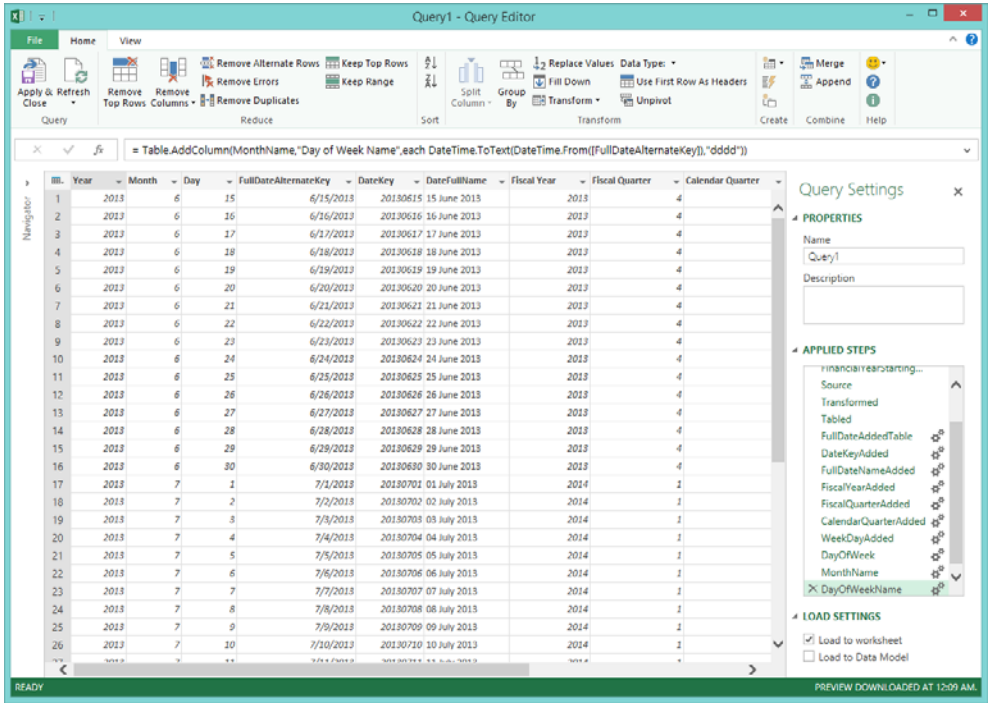




Power Map

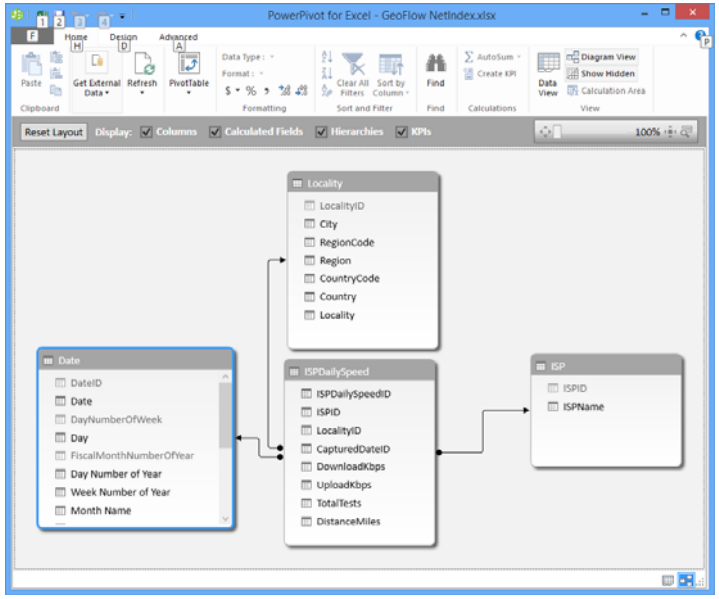
Power Query: ETL

- Self-Service ETL
- Functional Language
- Online Search
- Share Queries



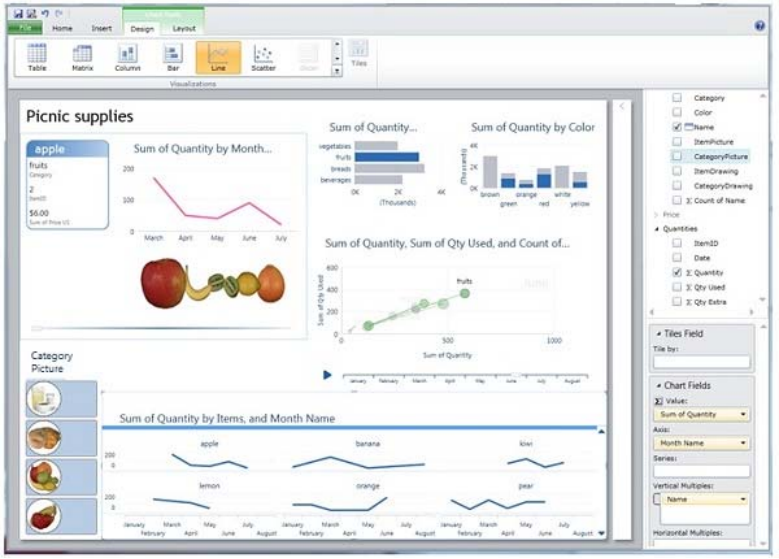
Power Pivot: Tabular Model

- Tabular Model
- Calculated Measures
- Hierarchies
- DAX
- xVelocity In-Memory



Power View: Visualization

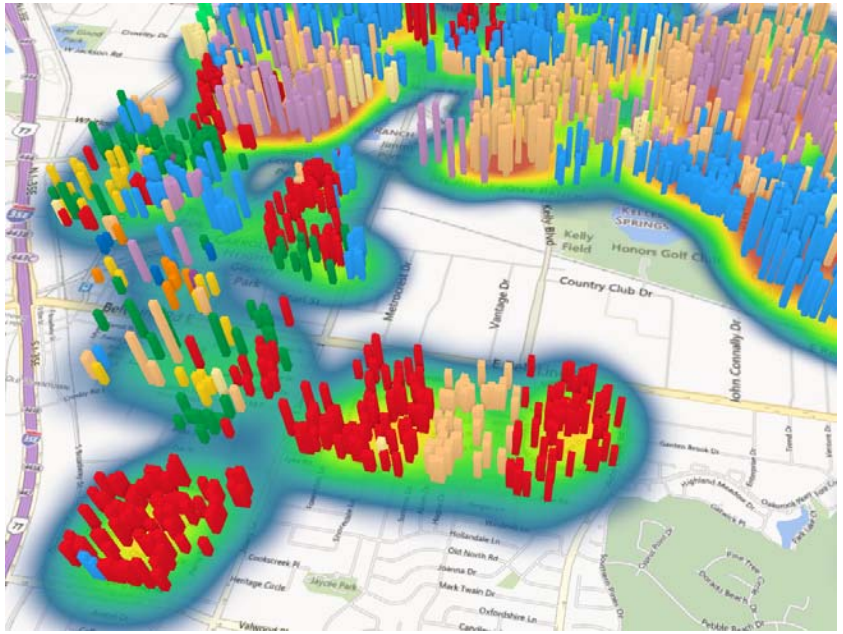
- Dashboards
- Reports
- Interactive UI
- Filters
- Scatter with Play Axis



Power Map: Geographical Visualization

- Geospatial
- Multiple Layers
- 3D Visualization

- Tours



Power Q&A

- Ask Questions
- Response on
- Visualization
- Tools

Power Query

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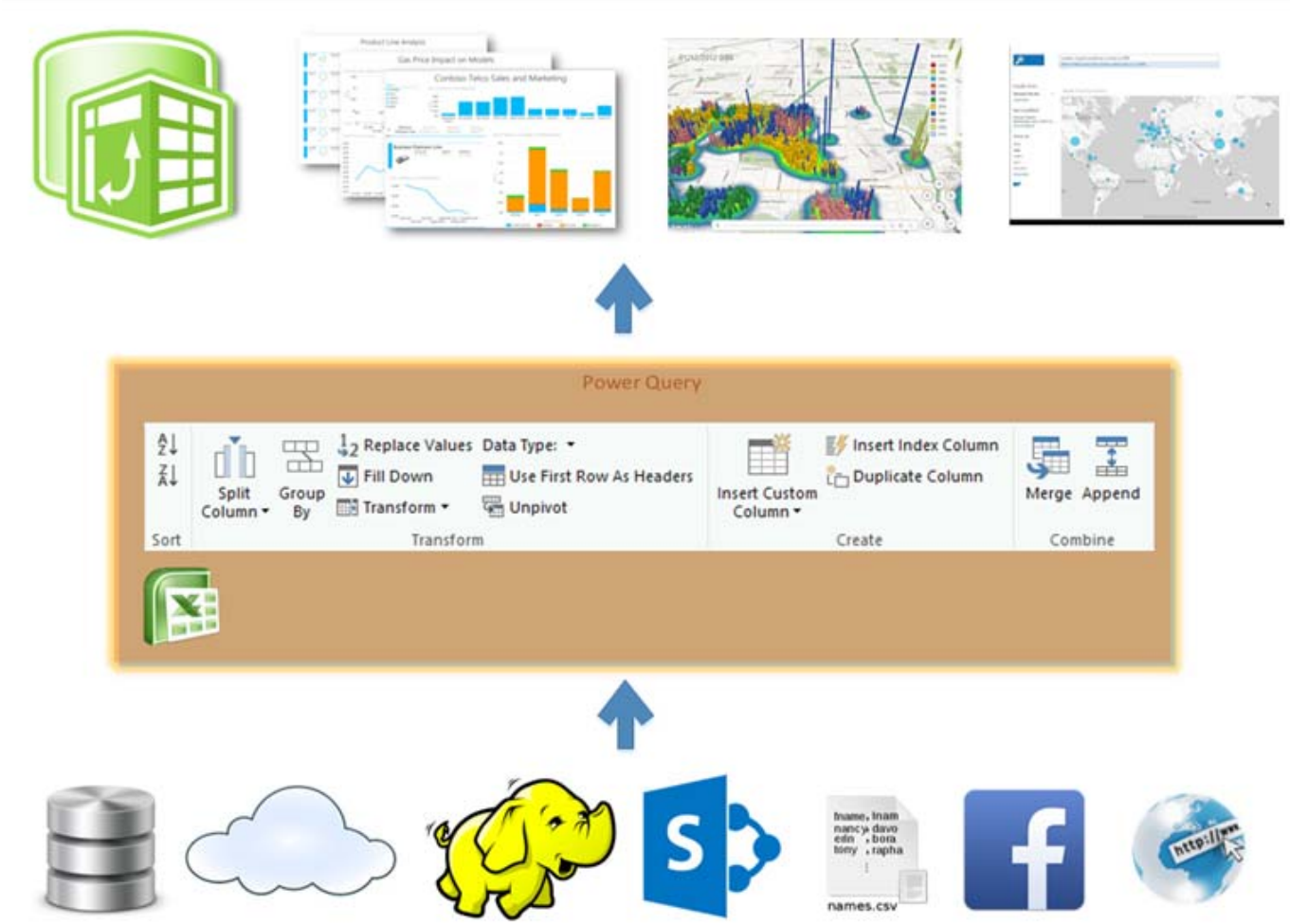
Power Query Demo
Discover Data



Download & Installation Power Query

Microsoft

Download Center

Shop Products Categories Support Security & updates

Microsoft Power Query for Excel

Select Language: English **Download**

Microsoft Power Query for Excel is an Excel add-in that enhances the self-service Business Intelligence experience in Excel by simplifying data discovery, access and collaboration.

Details

System Requirements

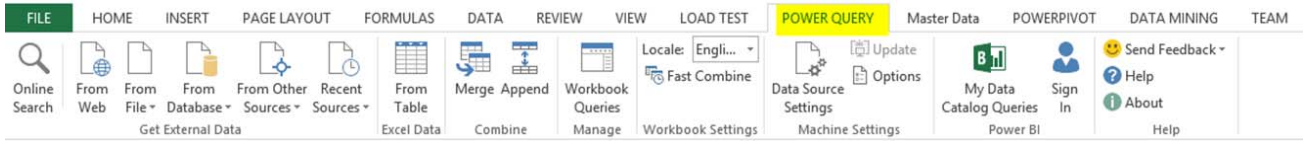
Install Instructions

Free PC updates

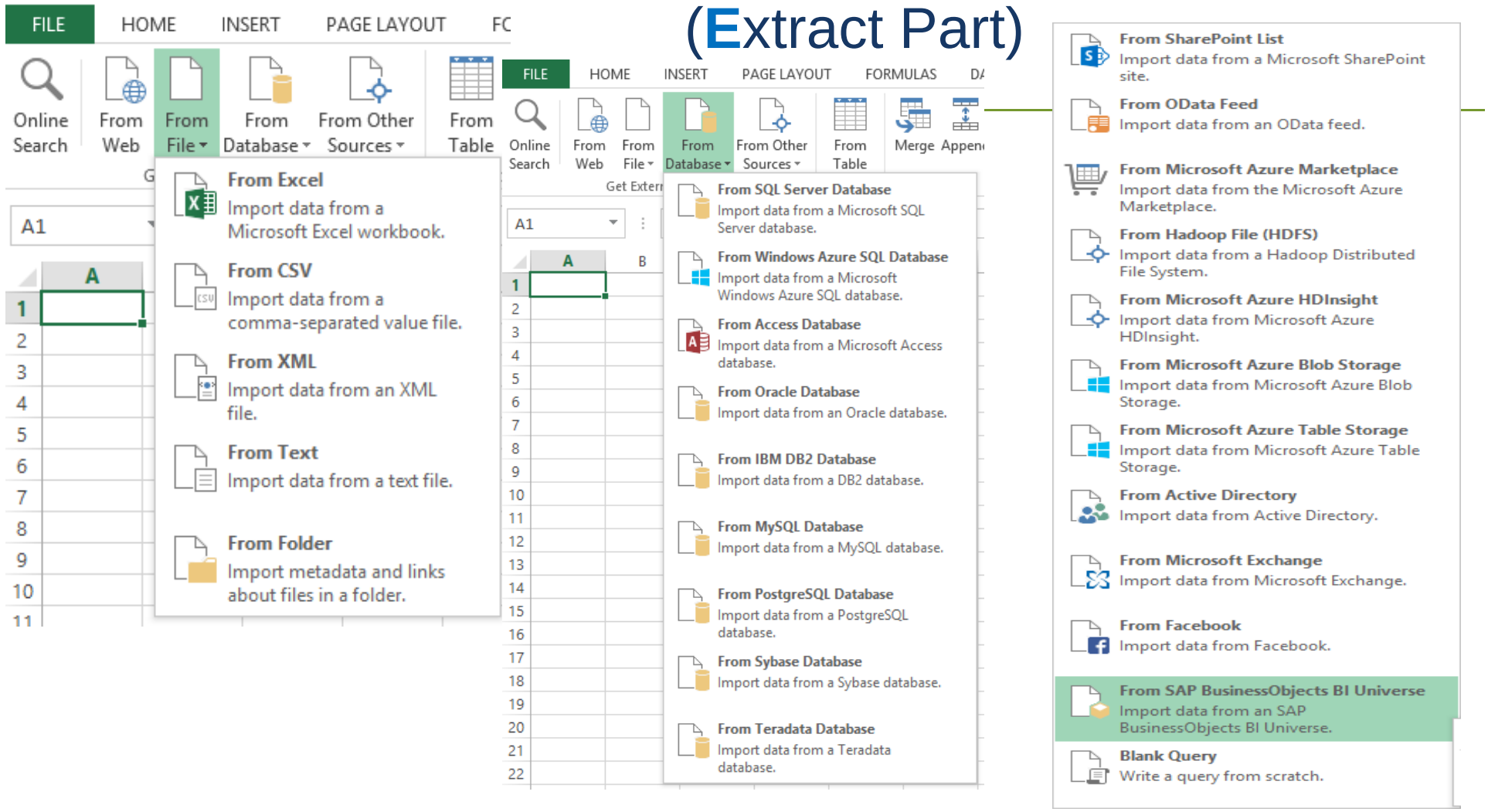
- Security patches
- Software updates
- Service packs
- Hardware drivers

Run Microsoft Update

Microsoft suggests

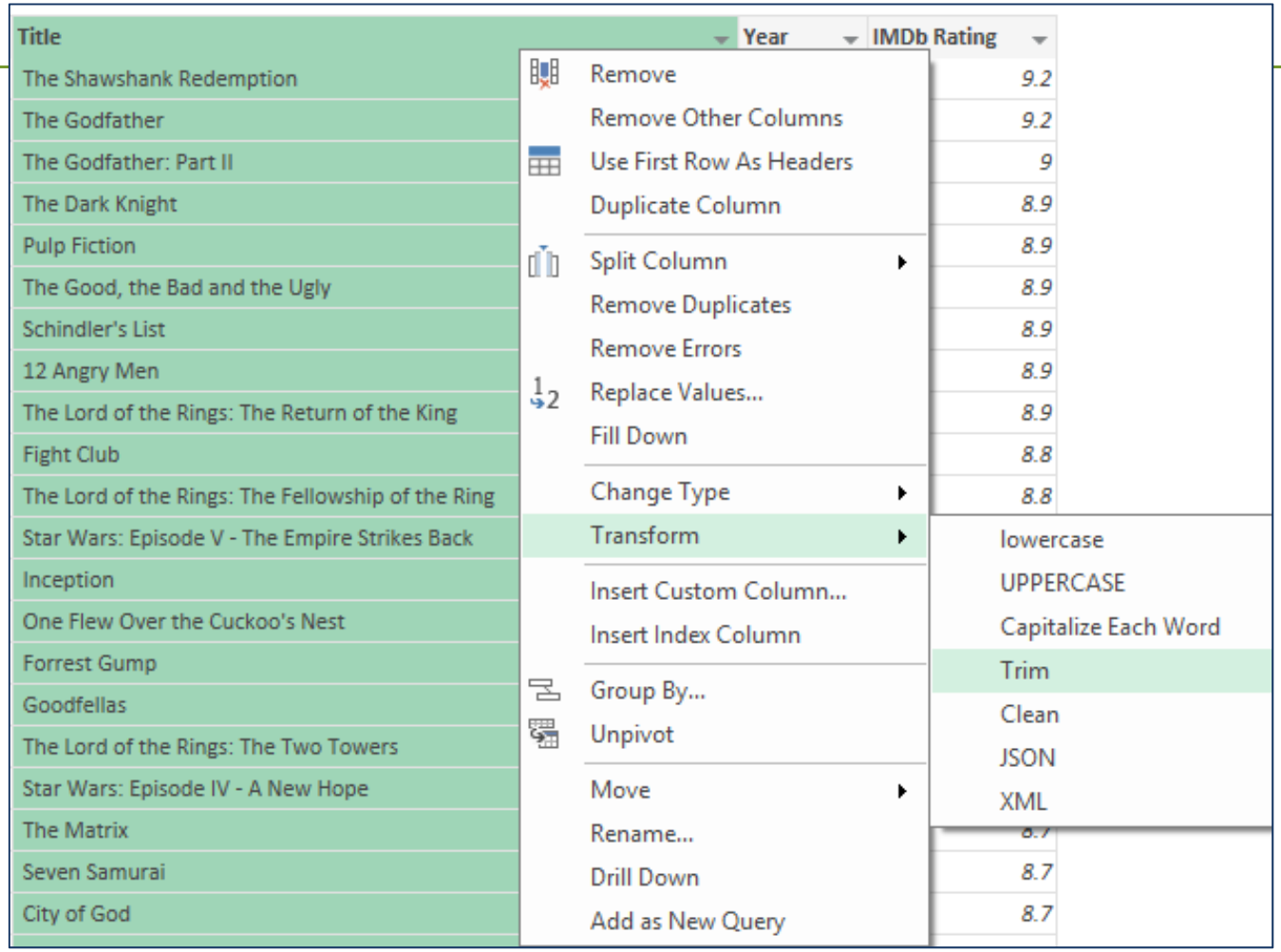


Wide Range of Data Sources Supported (Extract Part)



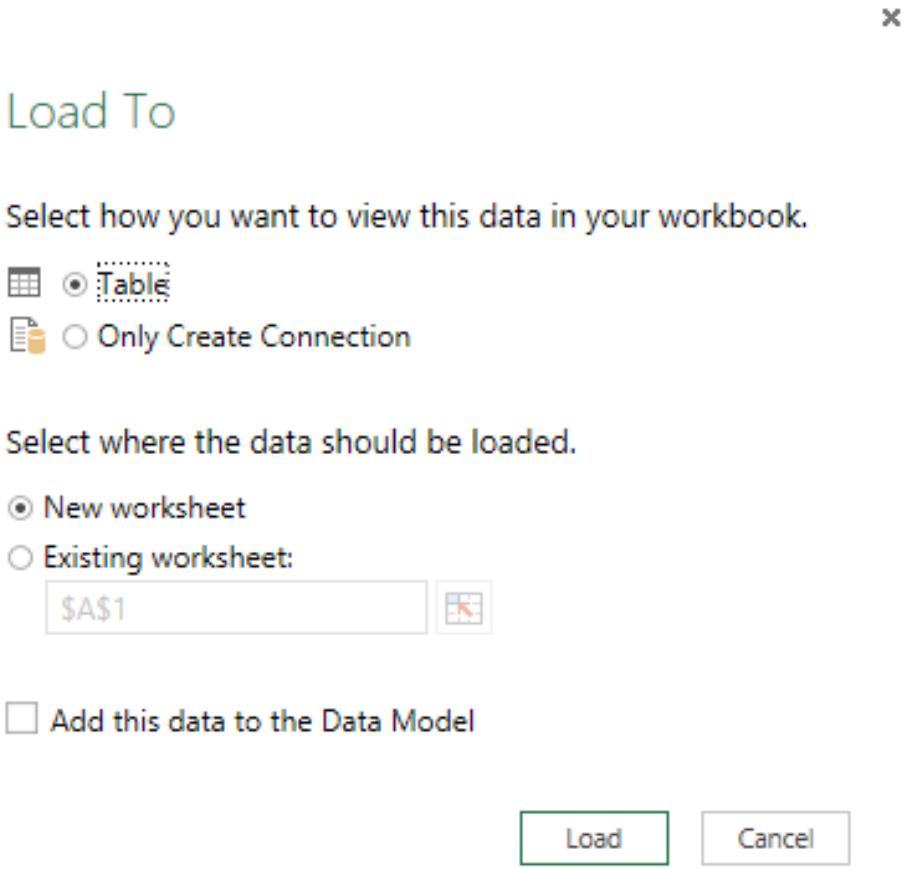
Online Search (Extract Part)

Data Transformations on GUI (Transform)



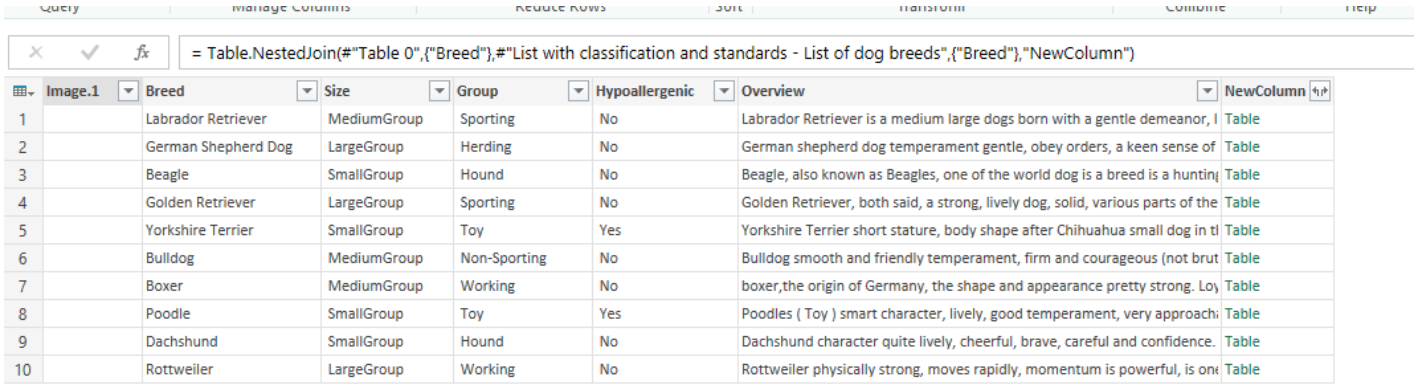
Demo: Fetch Dog Breads Data with Power Query

Load to Data Model



What is M?

- Everything that Happens on GUI works with a Code Behind
- Code Behind is a Functional Language: M

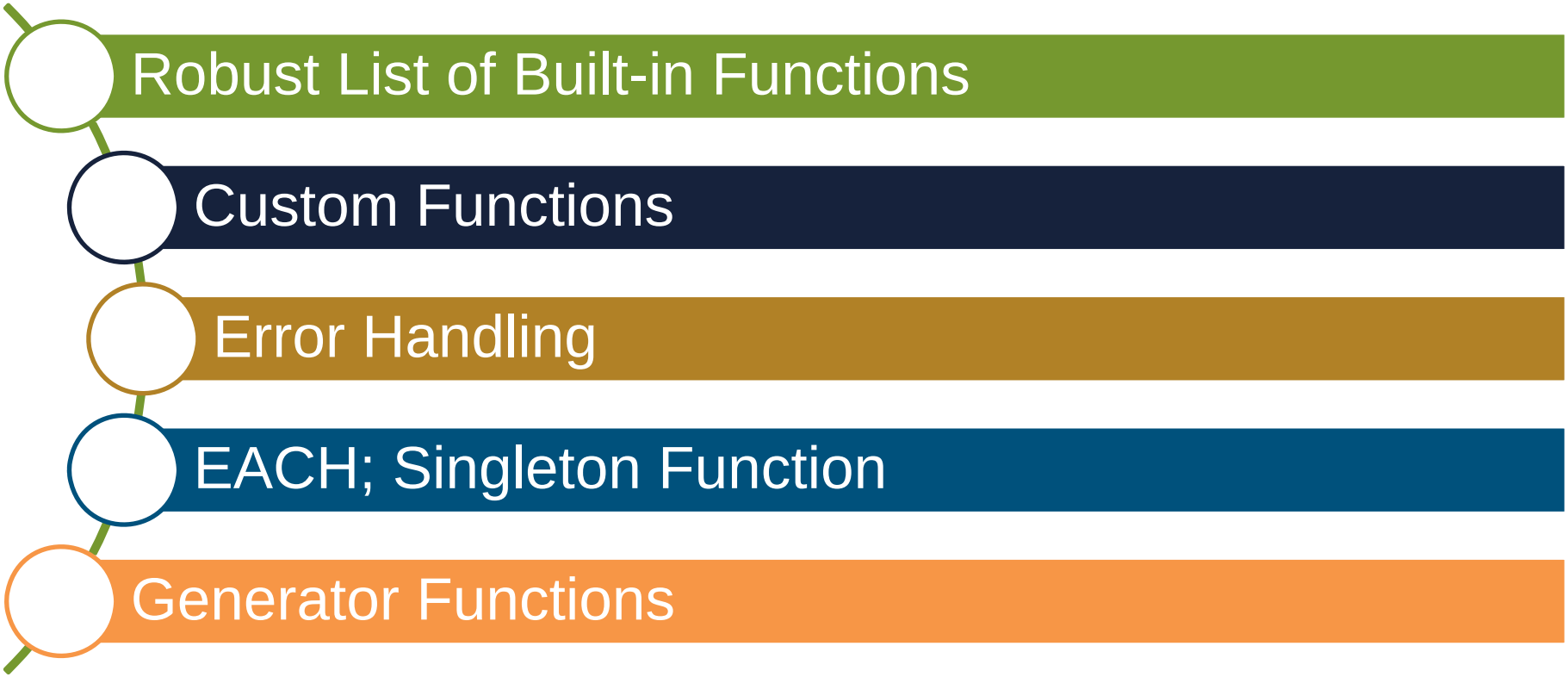


Query | Manage Columns | Reduce Rows | Sort | Transform | Combine | Help

```
= Table.NestedJoin(#"Table 0",{"Breed"},#"List with classification and standards - List of dog breeds",{"Breed"},"NewColumn")
```

	Image.1	Breed	Size	Group	Hypoallergenic	Overview	NewColumn
1		Labrador Retriever	MediumGroup	Sporting	No	Labrador Retriever is a medium large dogs born with a gentle demeanor, l	Table
2		German Shepherd Dog	LargeGroup	Herding	No	German shepherd dog temperament gentle, obey orders, a keen sense of	Table
3		Beagle	SmallGroup	Hound	No	Beagle, also known as Beagles, one of the world dog is a breed is a huntin	Table
4		Golden Retriever	LargeGroup	Sporting	No	Golden Retriever, both said, a strong, lively dog, solid, various parts of the	Table
5		Yorkshire Terrier	SmallGroup	Toy	Yes	Yorkshire Terrier short stature, body shape after Chihuahua small dog in tl	Table
6		Bulldog	MediumGroup	Non-Sporting	No	Bulldog smooth and friendly temperament, firm and courageous (not brut	Table
7		Boxer	MediumGroup	Working	No	boxer,the origin of Germany, the shape and appearance pretty strong. Lo	Table
8		Poodle	SmallGroup	Toy	Yes	Poodles (Toy) smart character, lively, good temperament, very approach	Table
9		Dachshund	SmallGroup	Hound	No	Dachshund character quite lively, cheerful, brave, careful and confidence.	Table
10		Rottweiler	LargeGroup	Working	No	Rottweiler physically strong, moves rapidly, momentum is powerful, is on	Table

Top Five M Functionalities



More about Formula Language

- M is much more powerful than Power Query GUI;
- Not all functionalities of M implemented through GUI.
- If you want to be Professional In Power Query; You should be Expert in M
- M is a functional language

Data Modelling with Power Pivot

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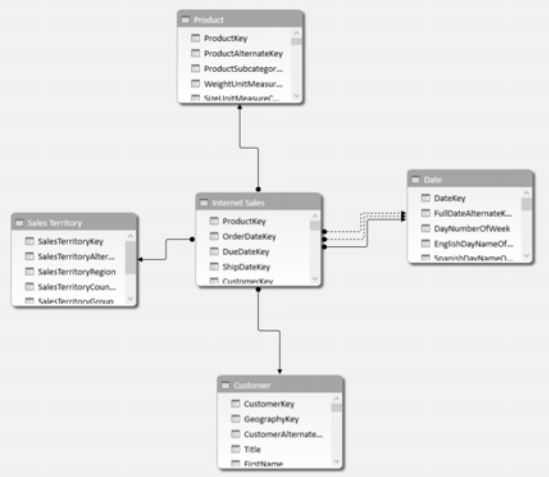
Power Pivot

- Two versions:
  - Power Pivot for Excel
  - Power Pivot for SharePoint
- For Excel 2010 and 2013
- xVelocity In-Memory Engine

Tabular Development

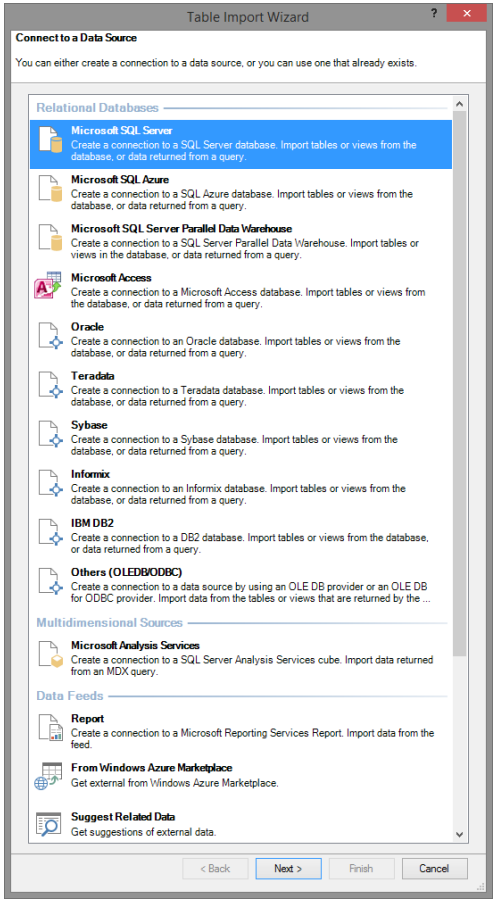
- Tables, Columns, Relationships and Measures as Metadata
- Data as Content



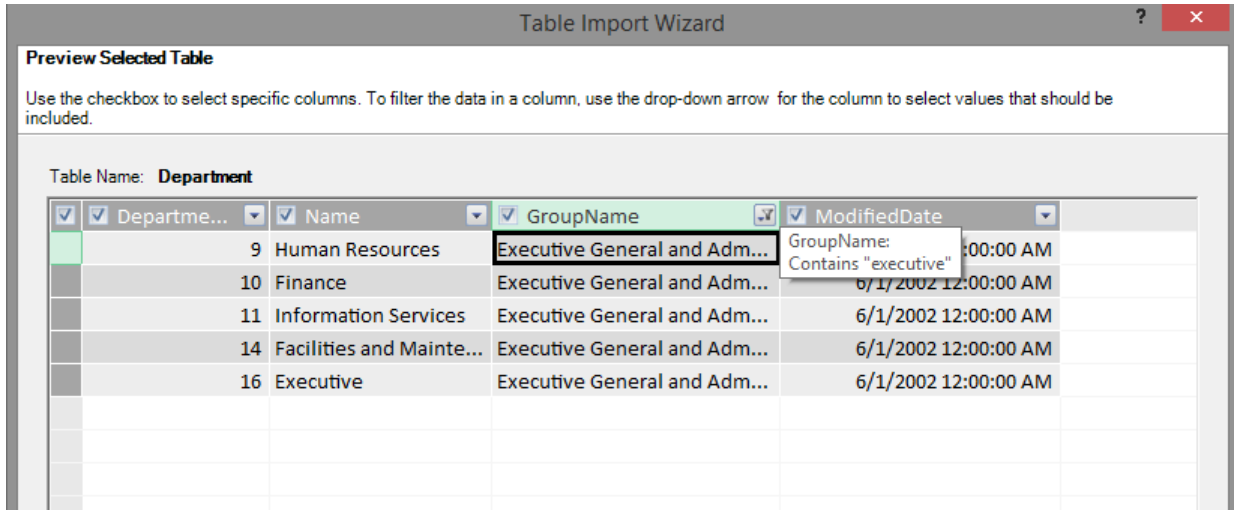
- Here is where Modelling happens
- Where Star Schema located

Data Sources

- Power Query
- SQL Server
- Analysis Services
- Other Databases
- …

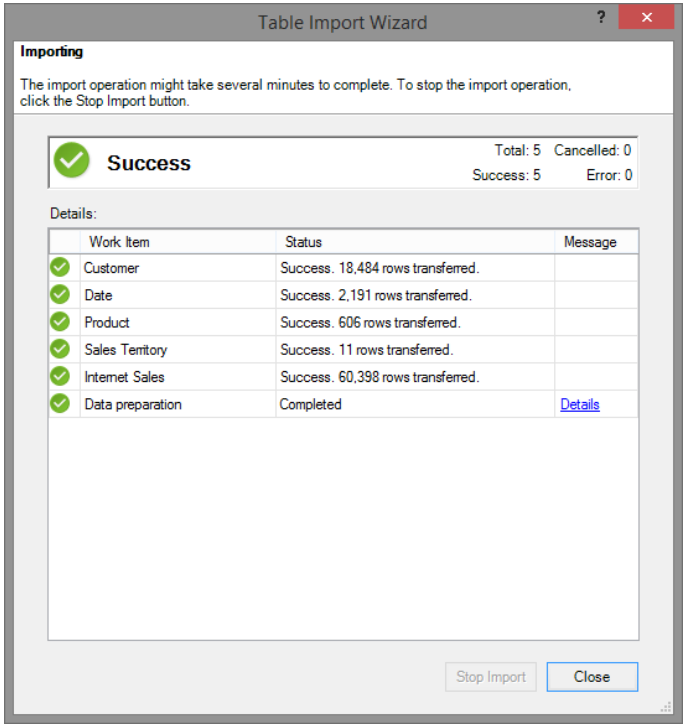


Filtering Before Loading Data



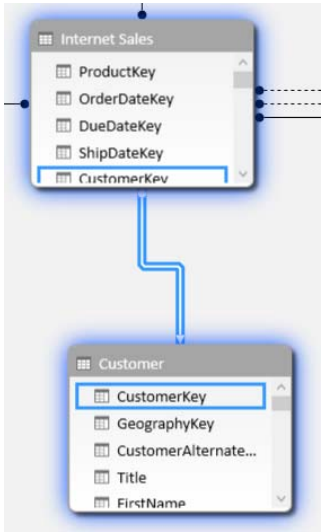
Loads into Memory

- Thirsty for Resources
  - RAM
  - CPU



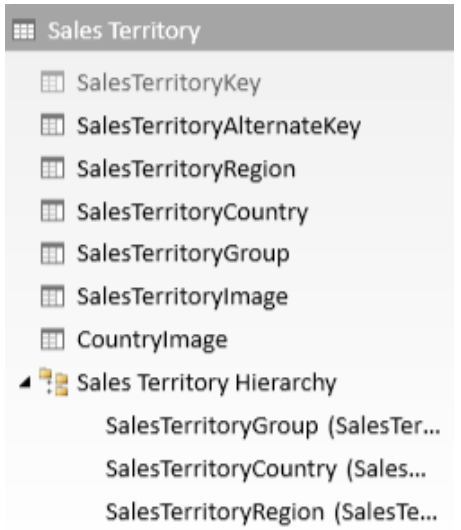
Relationship

- Much easier than Multidimensional Dimension Usage
- One to Many Supported



Hierarchies

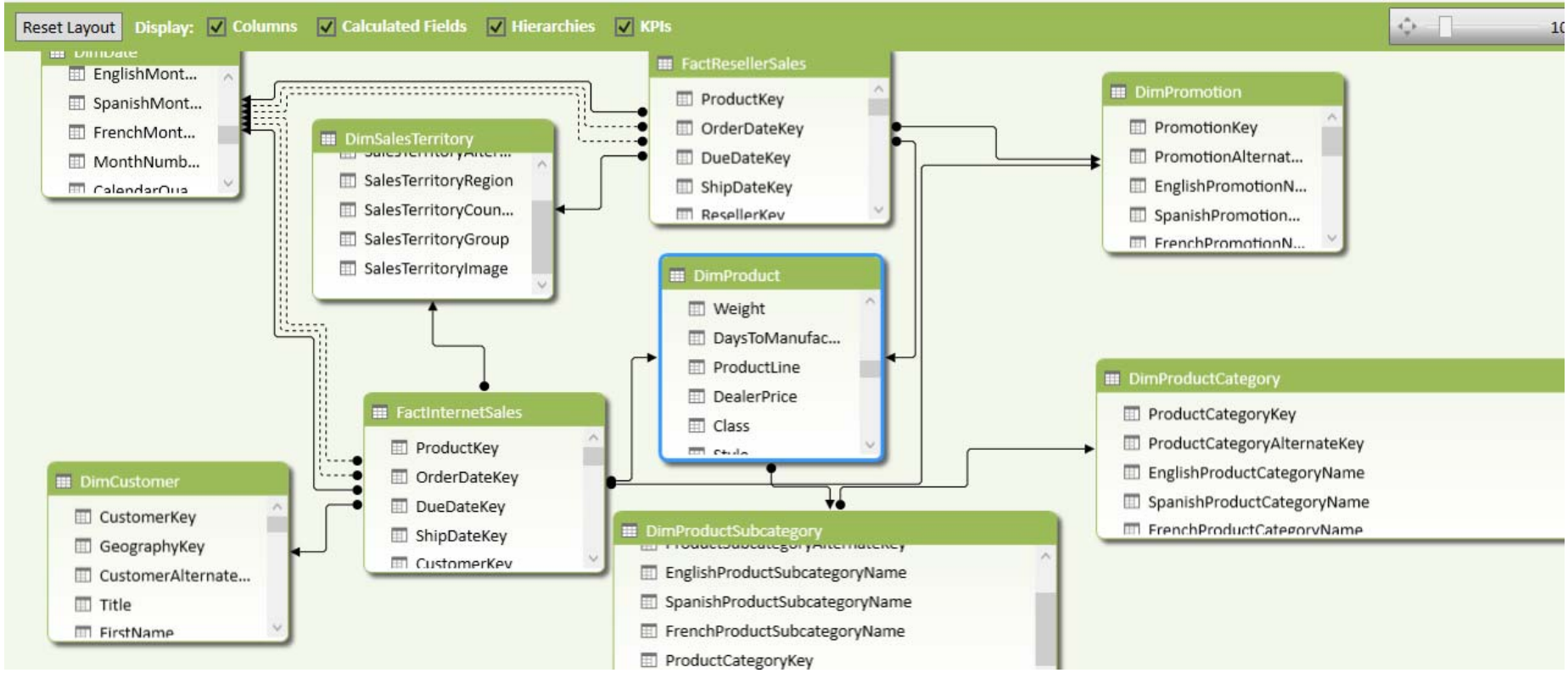
- Hierarchies from one table can be created simply with drag and drop
- Parent child Hierarchies can be created with calculated columns and DAX



Calculated Columns

- Just like any other column
- Calculated in Processing time and stores in database
- Ideal for expression that is strictly bound to the current row
- Can be used for discretising (e.g. age band…)

```
=RELATED('Product Subcategory'[EnglishProductSubcategoryName])
```


Reset Layout
Display:
Columns
Calculated Fields
Hierarchies
KPIs
EnglishMont...
SpanishMont...
FrenchMont...
MonthNumb...
DimSalesTerritory
SalesTerritoryRegion
SalesTerritoryCoun...
SalesTerritoryGroup
SalesTerritoryImage
FactResellerSales
ProductKey
OrderDateKey
DueDateKey
ShipDateKey
DimPromotion
PromotionKey
PromotionAlternat...
EnglishPromotionN...
SpanishPromotion...
DimProduct
Weight
DaysToManufac...
ProductLine
DealerPrice
Class
DimProductCategory
ProductCategoryKey
ProductCategoryAlternateKey
EnglishProductCategoryName
SpanishProductCategoryName
FactInternetSales
ProductKey
OrderDateKey
DueDateKey
ShipDateKey
DimCustomer
CustomerKey
GeographyKey
CustomerAlternate...
Title
DimProductSubcategory
EnglishProductSubcategoryName
SpanishProductSubcategoryName
FrenchProductSubcategoryName
ProductCategoryKey

Power View

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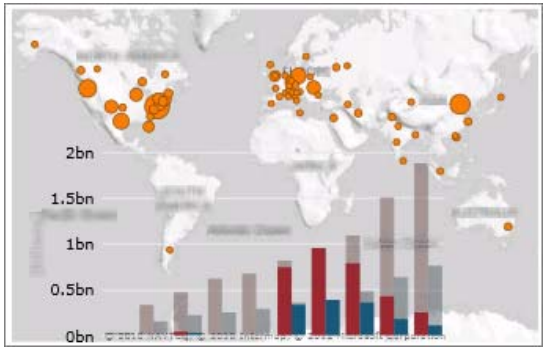
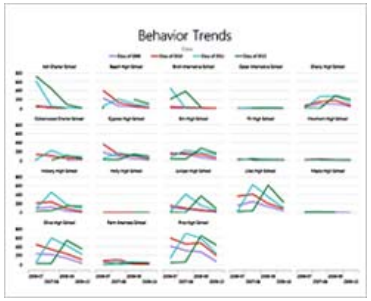
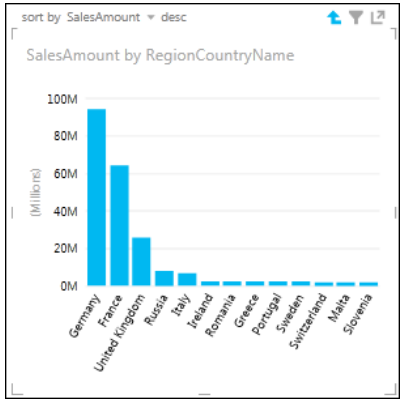
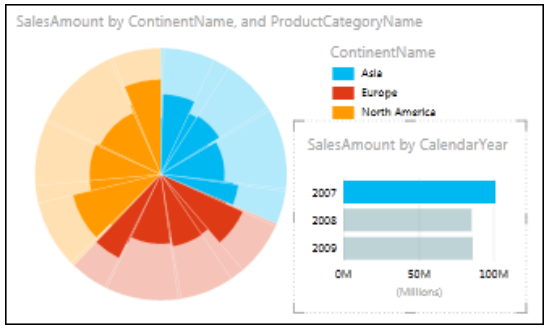
Power View: Charts

- Column Chart
- Bar Chart
- Pie Chart
- Map
- Line Chart



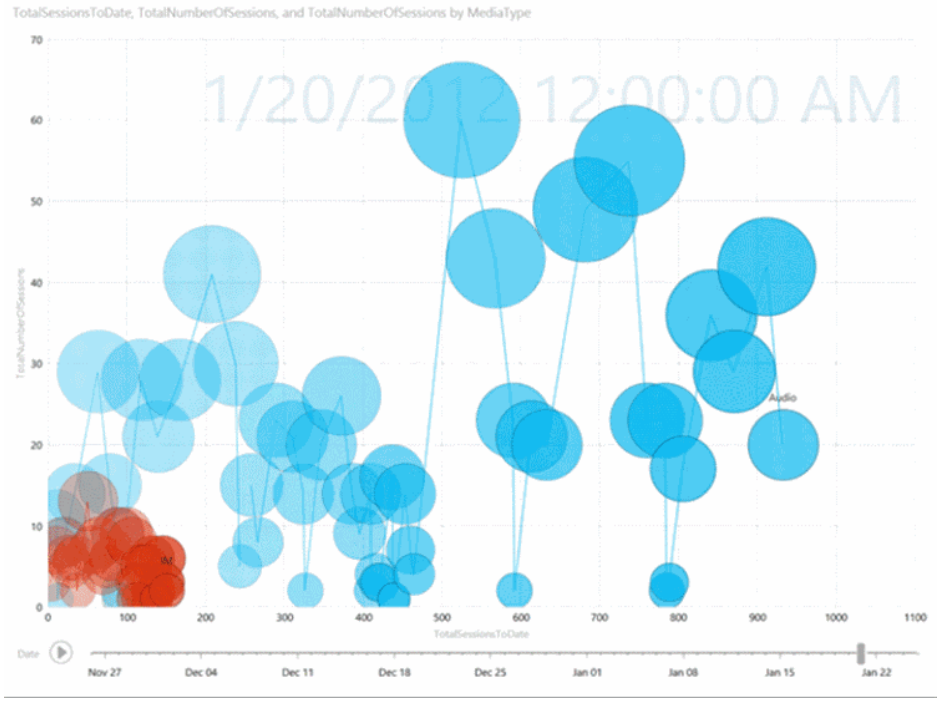






Power View: Scatter Chart

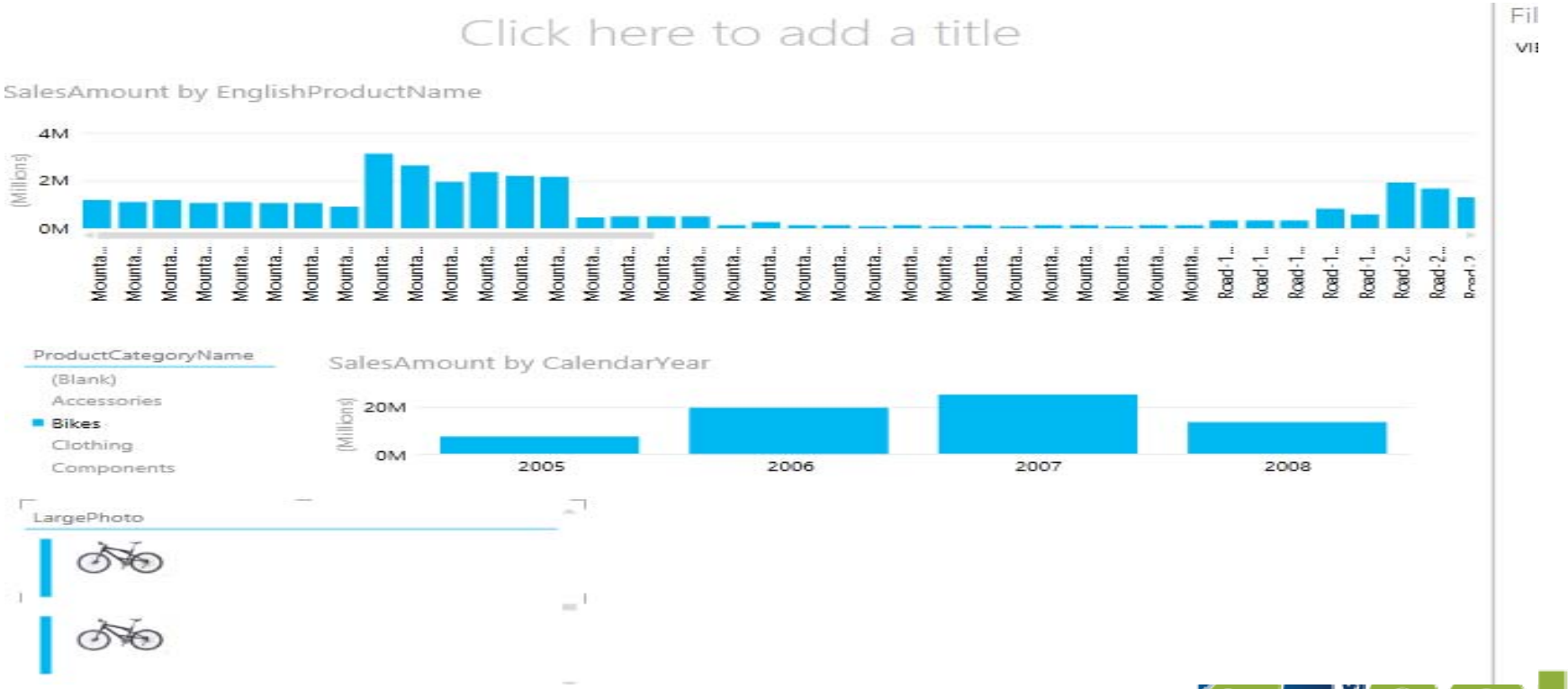
- 3 Measures:
  - X Axis
  - Y Axis
  - Size Axis
- By Time Changes:
  - Play Axis
- Categorization:
  - Color



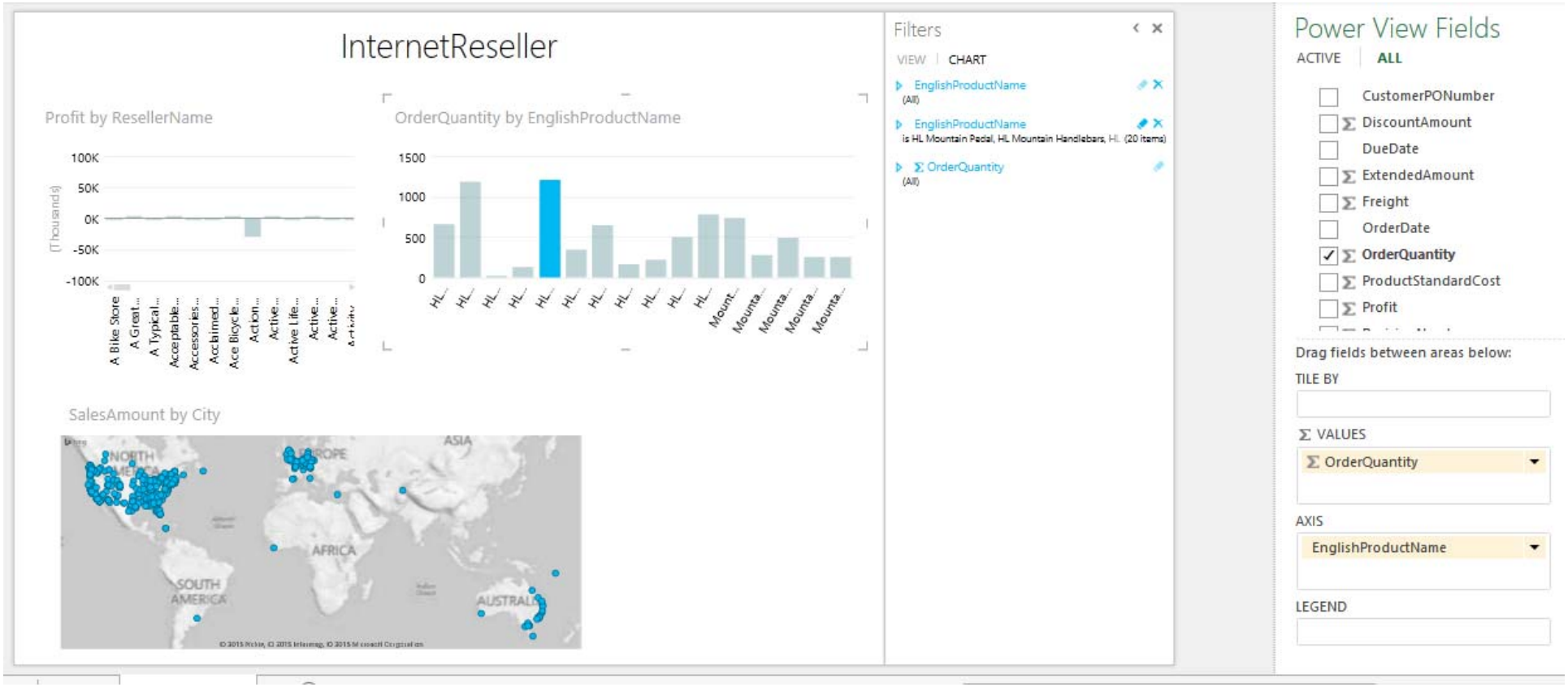
Demo: Power View

What we sold

1-Showing the Sales Amount based on the Product details
2-Sales Amount based on the Date
3-Sales Amount based By Product Category



Reseller Product

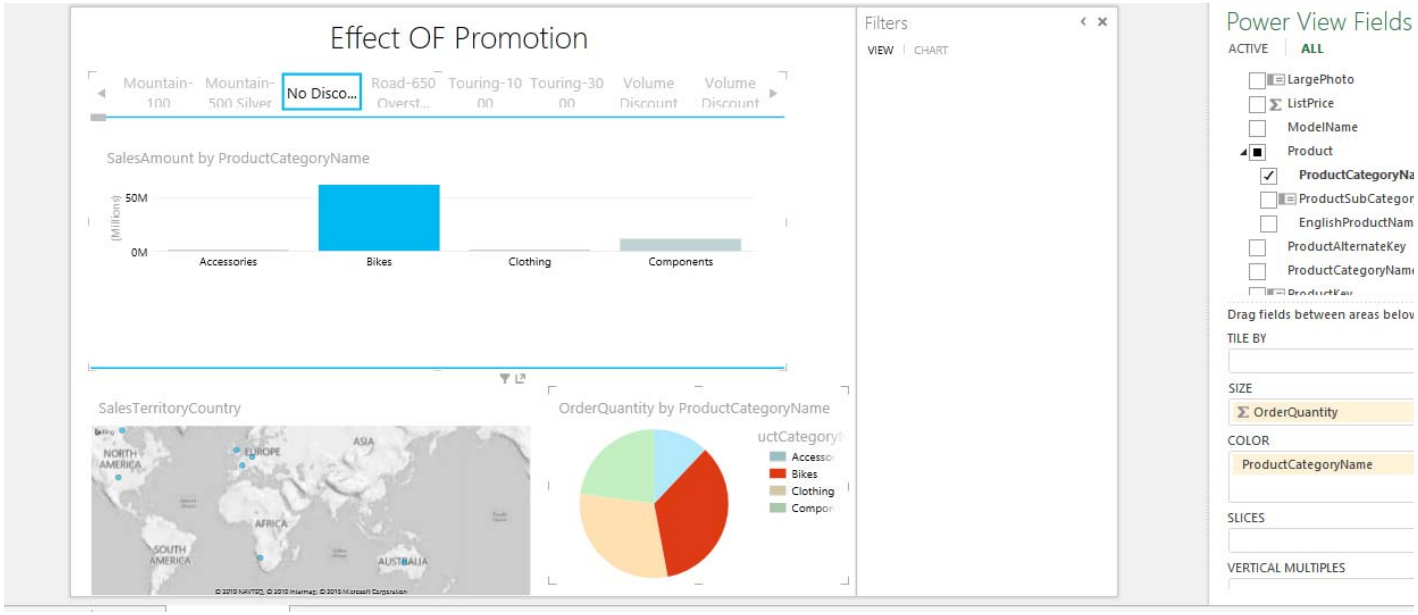


Promotion Analysis

1-Promotion relation to Internet Sales amount

2- Analysis the affect of Promotion on selling different
Product Name.

3-Product category affect on Promotion (tile)

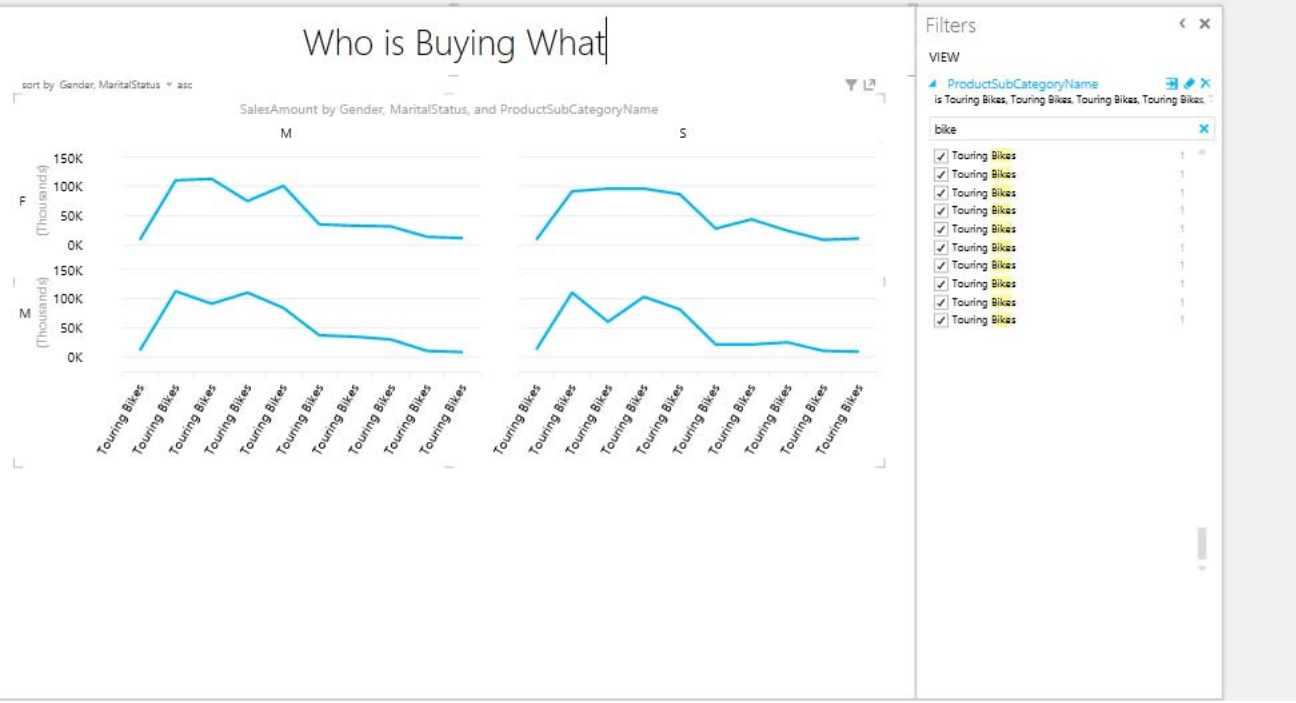


Who is Buying

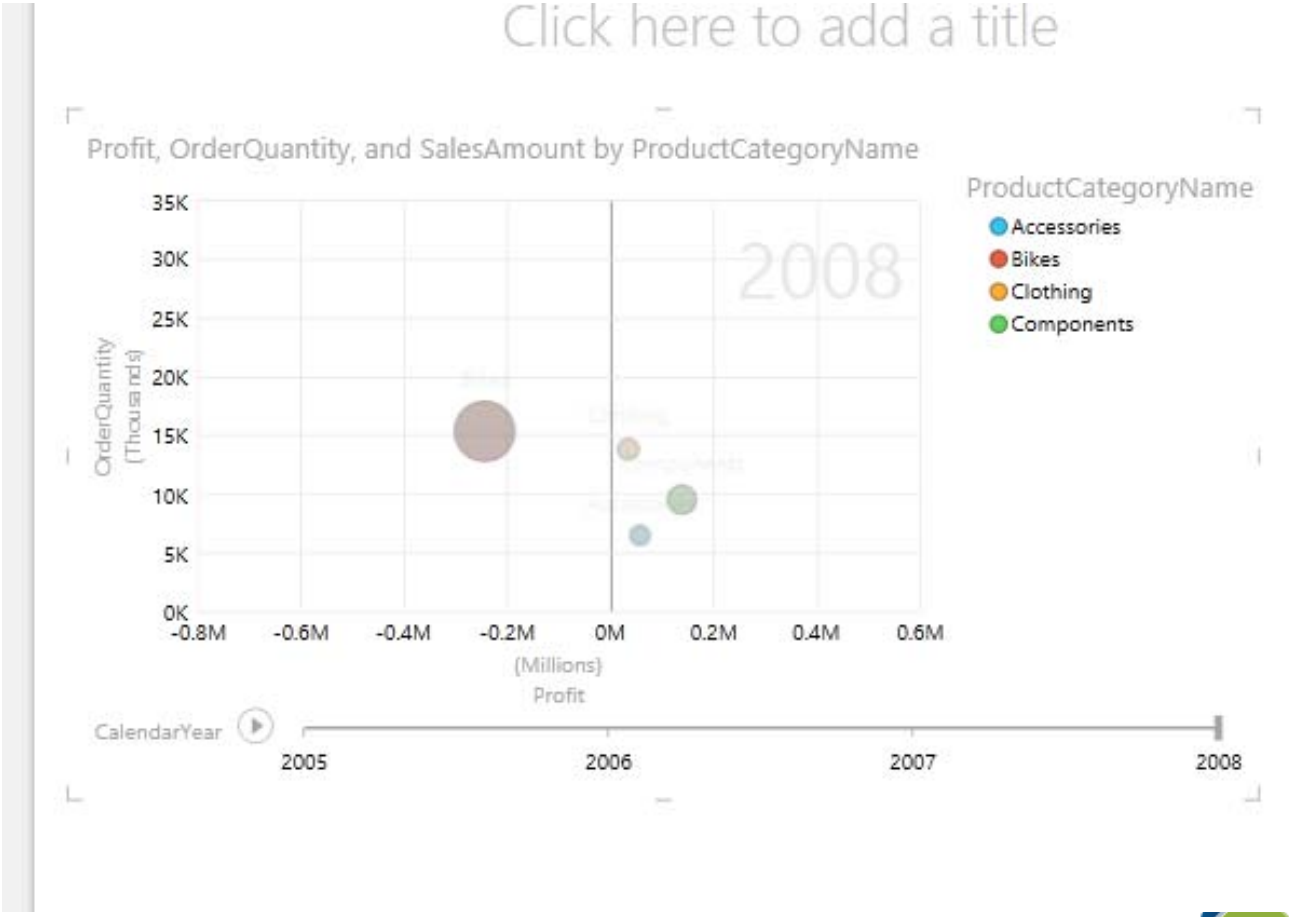
1- Sales by date (line chart)

2- analysis Customer demographic Information by Sales amount (horizontal multiples, Vertical Multiples)

3- Analysis demographic Information plus their Country (map)



Multi Measure Analysis



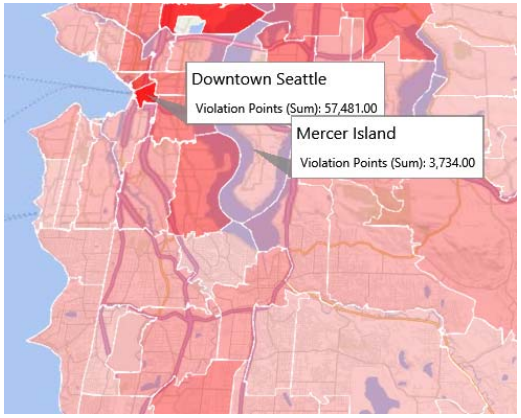
Power Map

Geographical Data

- Latitude/Longitude
- Region/Country/State/City/Zip Code
- Bing Maps

Chart Layers

- Column
- Heat Map
- Bubbles
- Region



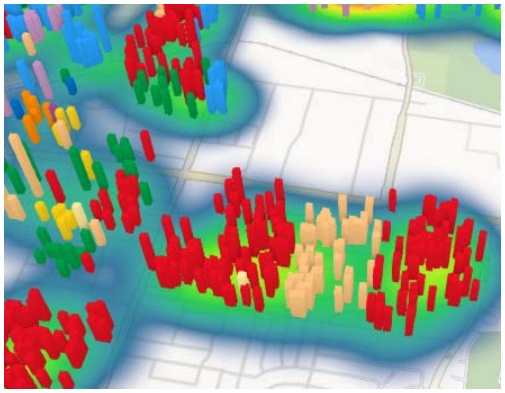
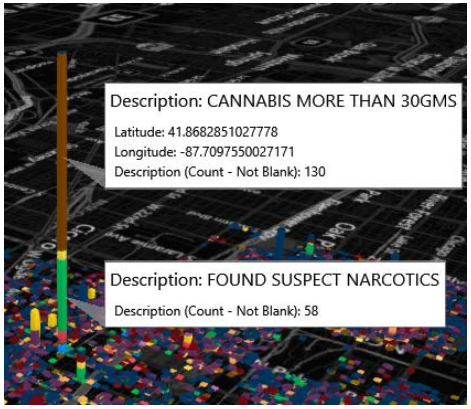
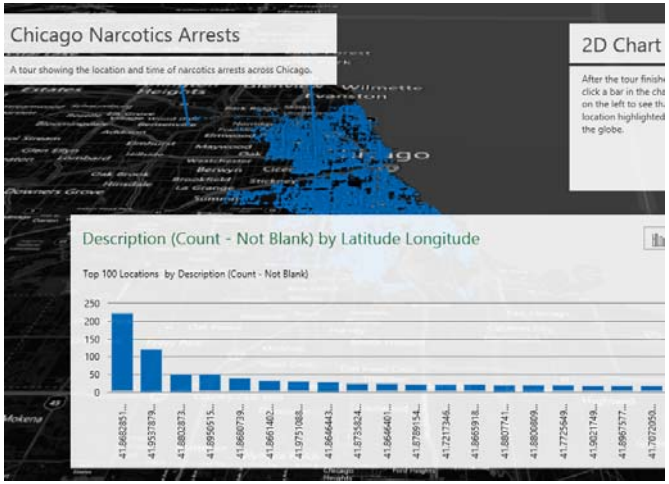


Chart and Notes

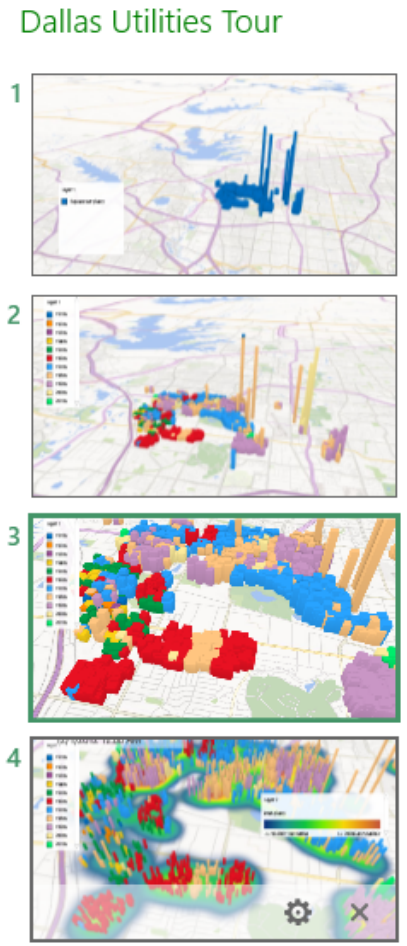
- Chart
- Note
- Map Labels
- Themes





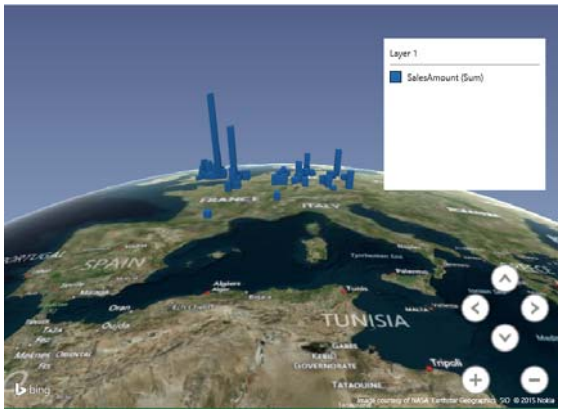
Tours

- Creating Story
- Sharing Story
- Video

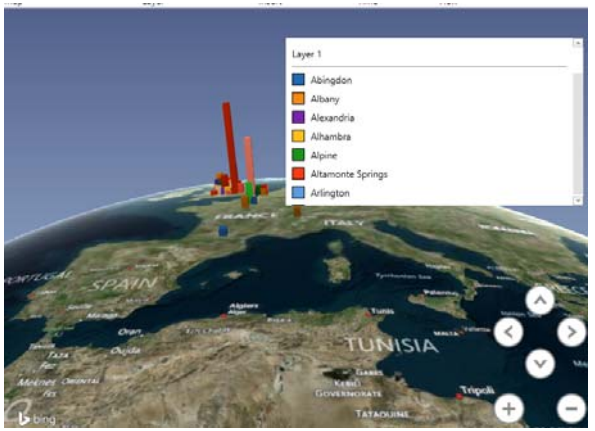


Power Map

1- Take a report on Sales amount for each city

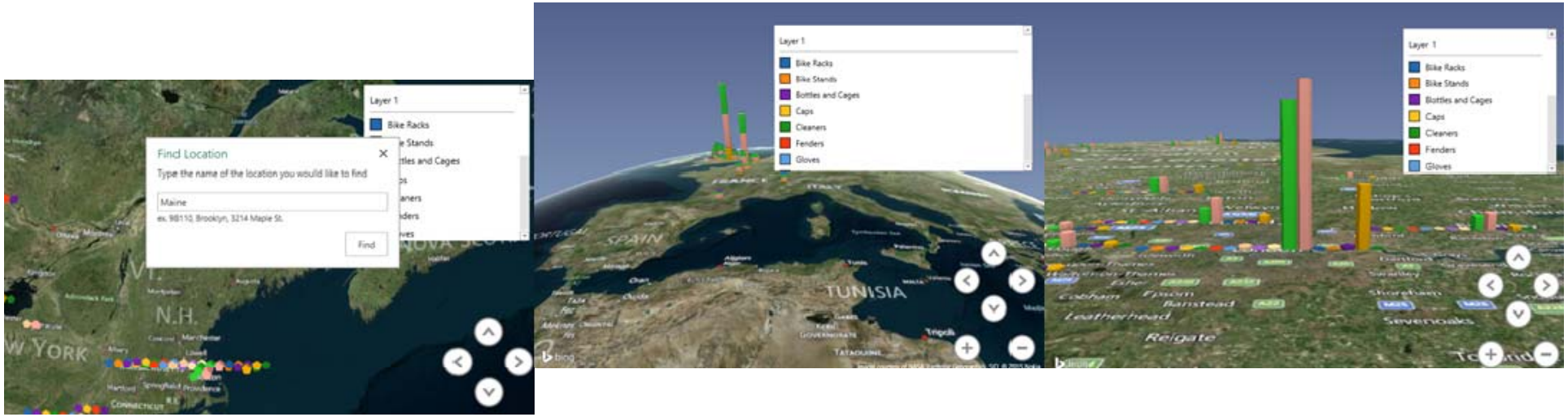


2-Take a report on Sales amount for each city categorised by product name



Find Location on Map

Find Location on map



Demo: Power Map 3D Geospatial

Power Q&A

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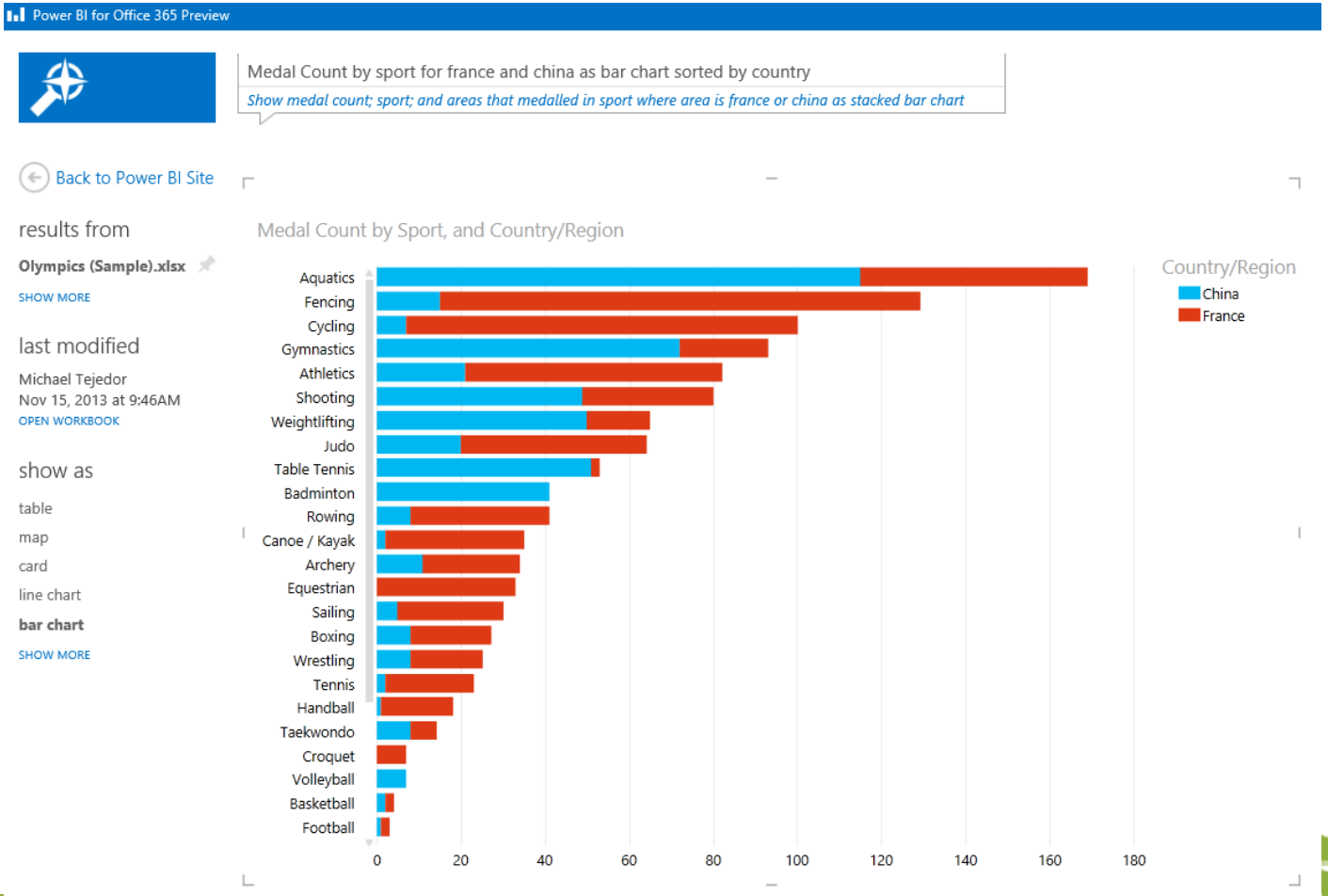
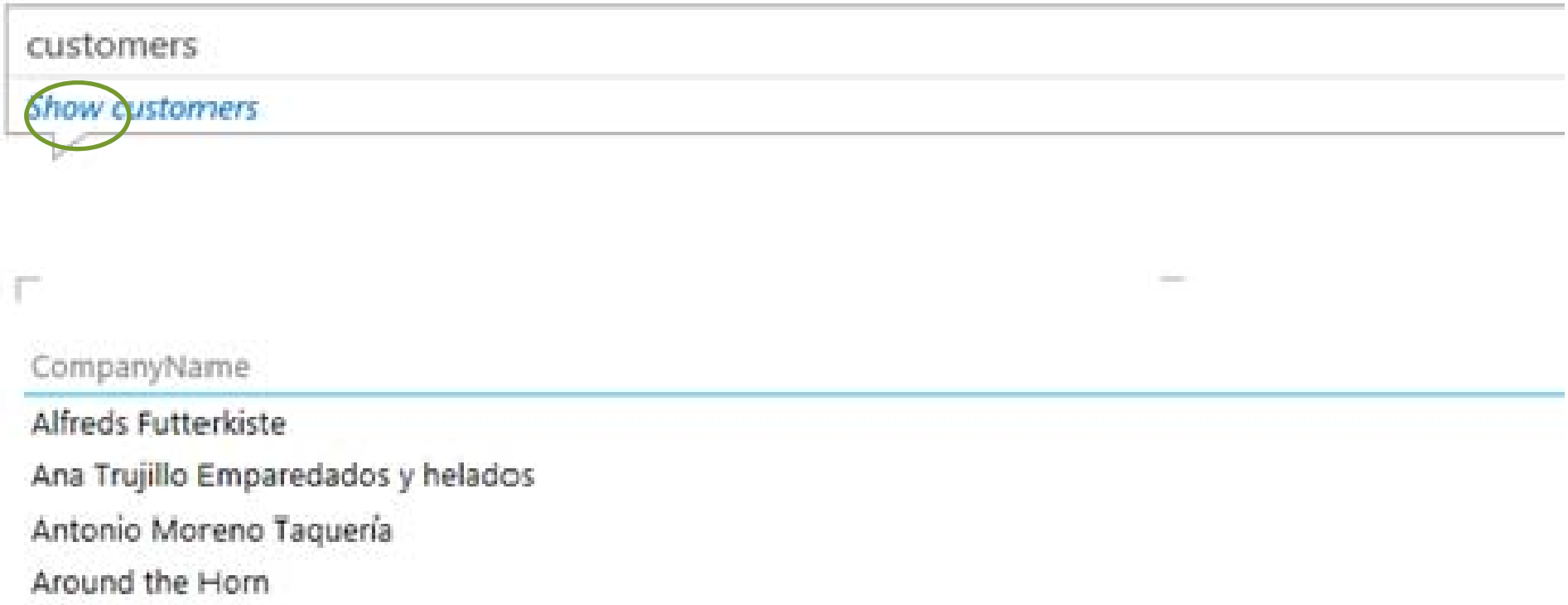
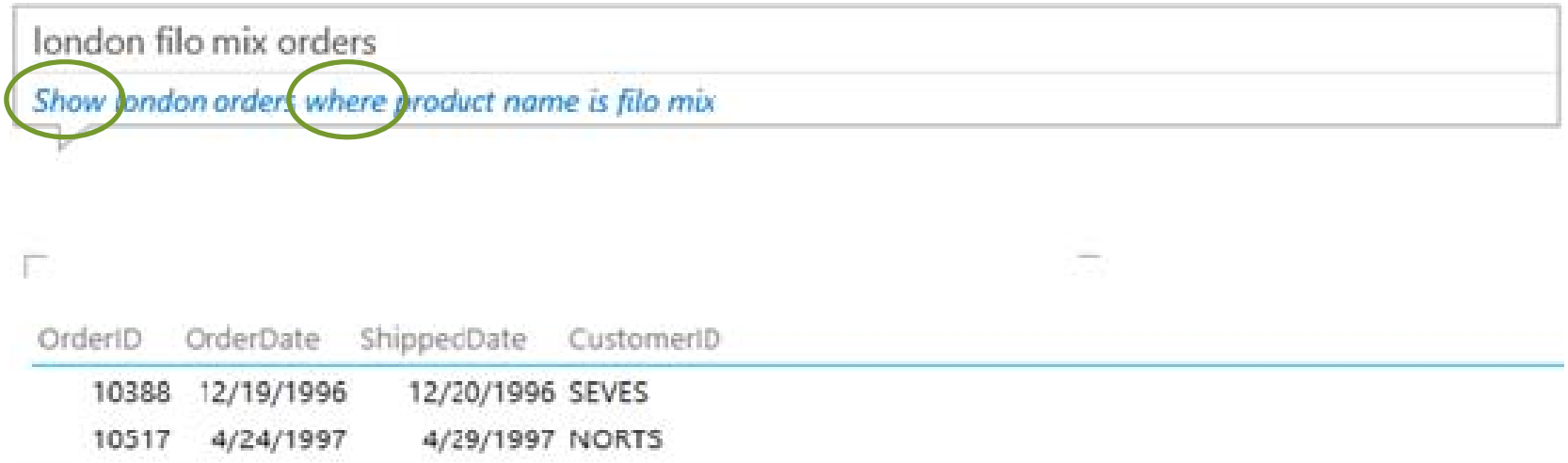
Natural Language Q&A Engine



Columns and Tables Search



Data Values


london filo mix orders
Show london orders where product name is filo mix
OrderID OrderDate ShippedDate CustomerID
10388 12/19/1996 12/20/1996 SEVES
10517 4/24/1997 4/29/1997 NORTS

Data Values; Date

1997 orders

Show orders and their date on which they were ordered where date is in 1997

OrderID	OrderDate	ShippedDate	CustomerID
10400	1/1/1997	1/16/1997	EASTC
10401	1/1/1997	1/10/1997	RATTC
10402	1/2/1997	1/10/1997	ERNSH
10403	1/3/1997	1/9/1997	ERNSH

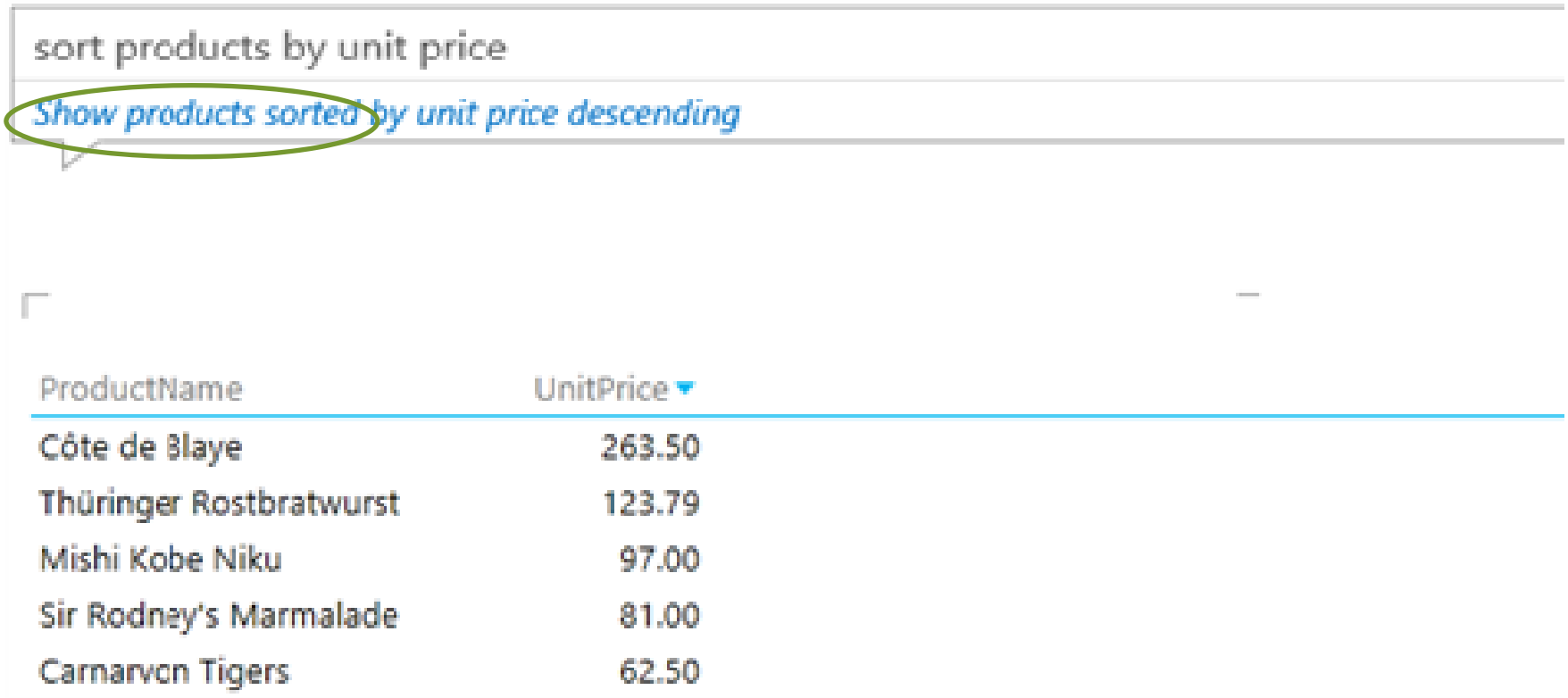
Relationships

List products and their categories

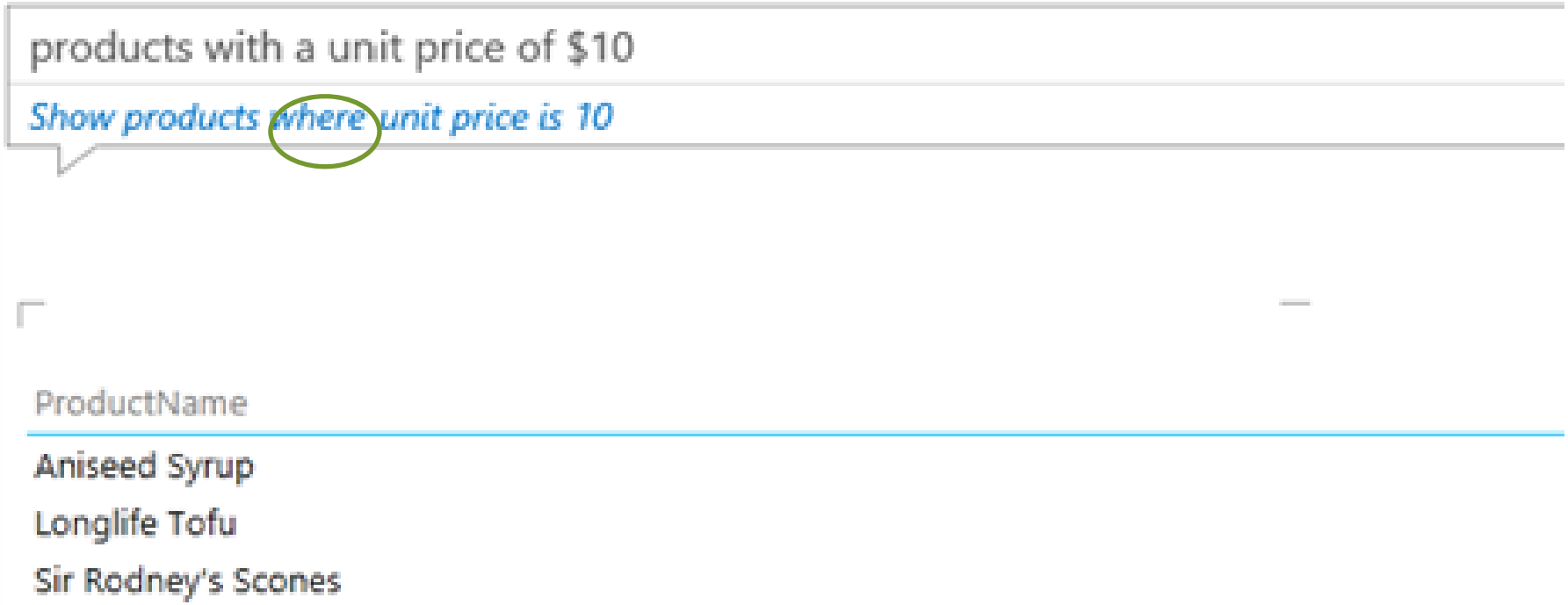
Show products and categories

ProductName	CategoryName
Alice Mutton	Meat/Poultry
Aniseed Syrup	Condiments
Boston Crab Meat	Seafood
Camembert Pierrot	Dairy Products

Sort Command



Equality Filters



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References to Study More

Power View Videos on YouTube:

http://www.youtube.com/playlist?list=PL0CB09E9526E50B80

Power Map Samples

http://office.microsoft.com/en-us/excel/redir/XT104048050.aspx

http://office.microsoft.com/en-us/excel/redir/XT104048052.aspx

http://office.microsoft.com/en-us/excel/redir/XT104048053.aspx

http://office.microsoft.com/en-us/excel/redir/XT104048055.aspx

Power Map Tutorials on MSDN:

http://office.microsoft.com/en-001/excel-help/get-started-with-power-map-HA104091224.aspx?CTT=1

Any Questions

- Conclusion
- Hopefully you now have a better understanding of Power BI

- Q & A

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Thank you

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