Querying SSAS 2012 Tabular

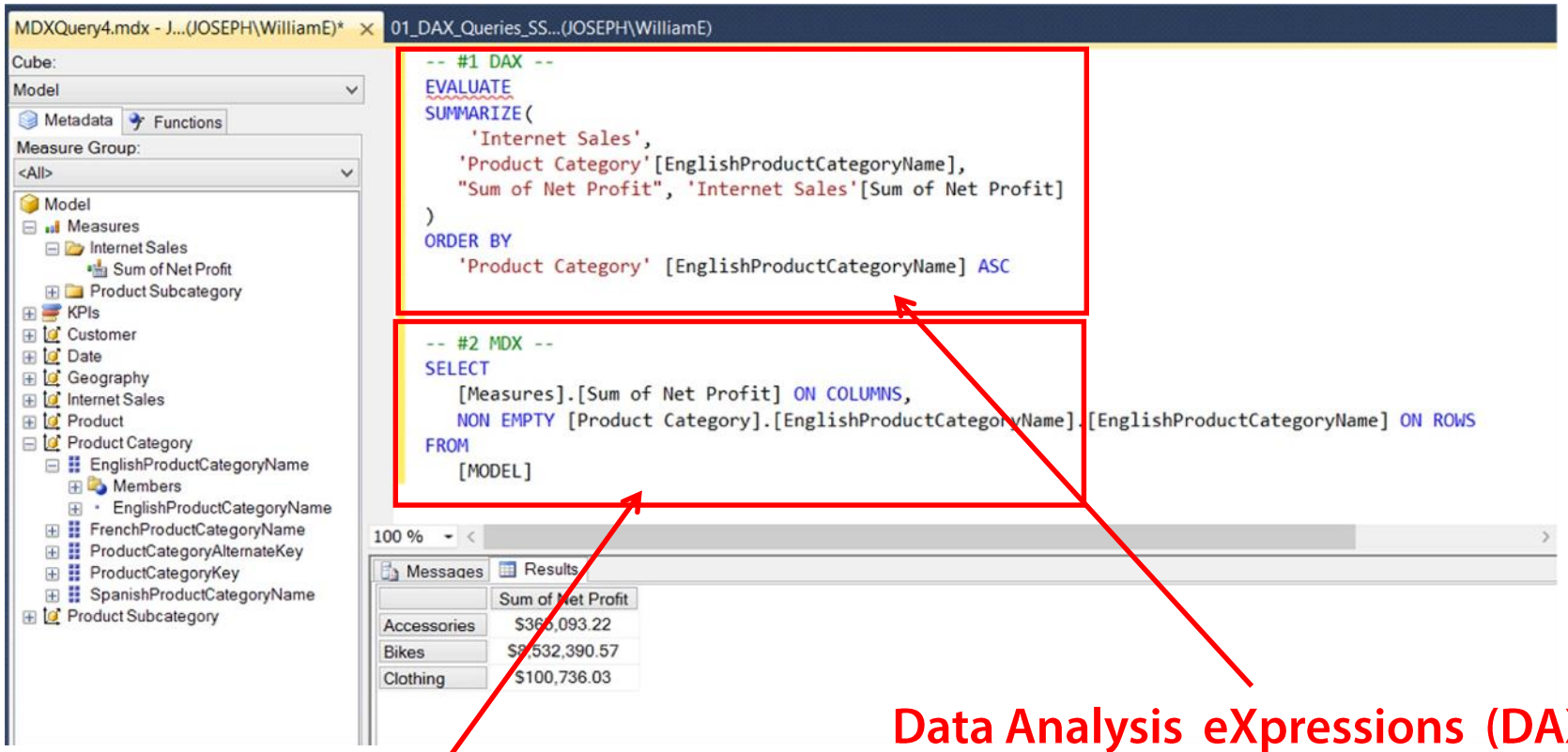
William E. Pearson III
www.islandtechnologies.com
@Bill_Pearson

pluralsight
hardcore dev and IT training

Objectives

- Understanding Language Options and Editors
- Querying Tabular With Excel

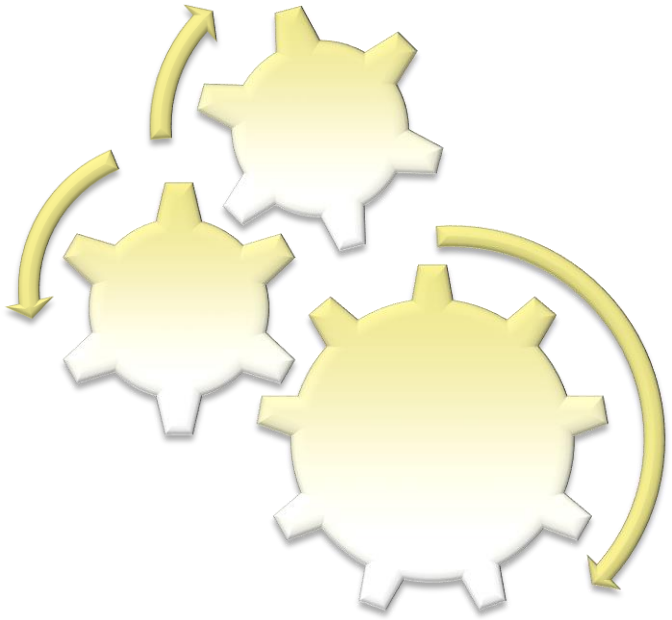
Language Options … and Editors



Data Analysis eXpressions (DAX)

MultiDimensional eXpressions (DAX)

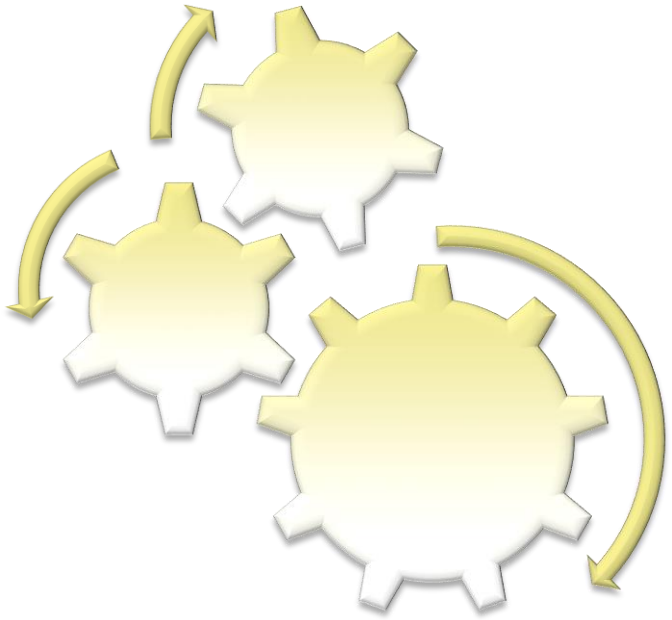
Querying SSAS 2012 Tabular



Let's Take a Look …

Perform a Basic DAX Query of SSAS Tabular

Querying SSAS 2012 Tabular



Let's Take a Look …

Perform a Basic MDX Query of SSAS Tabular

Language Options: DAX

Example: Power View

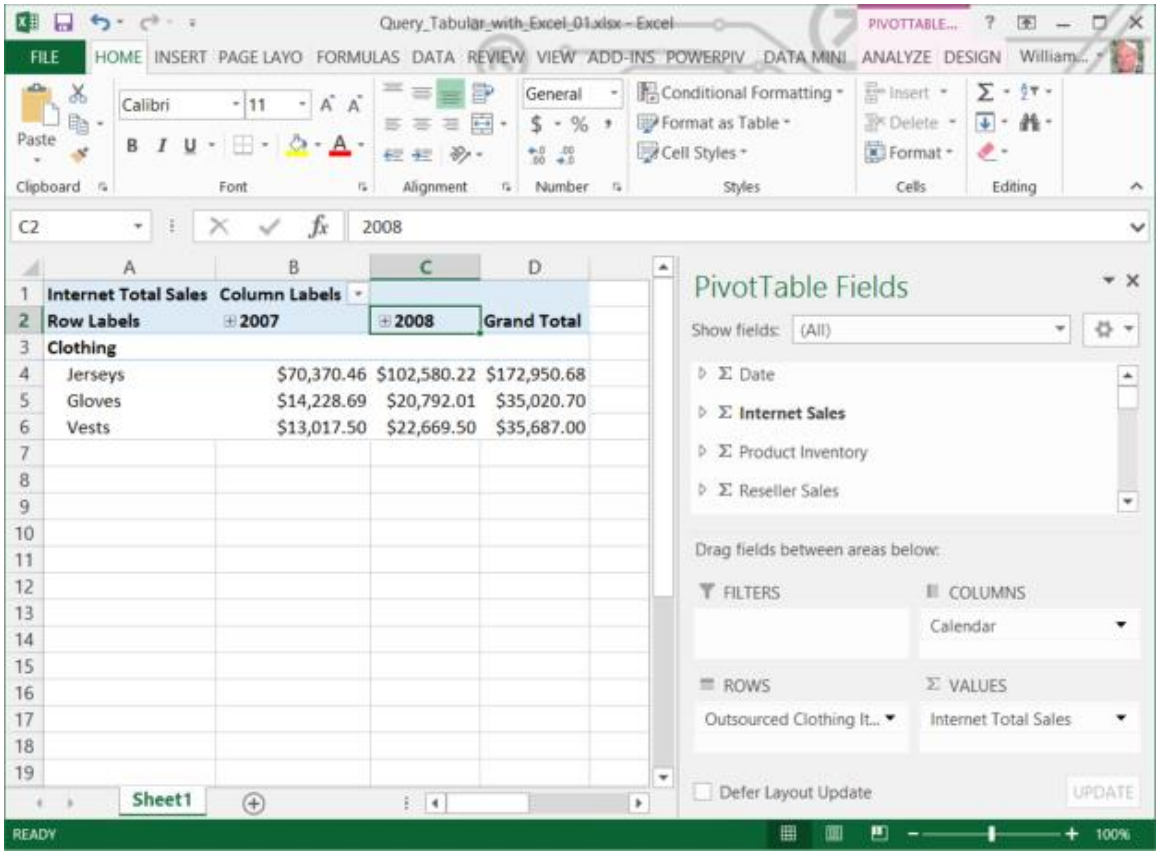
A table is the natural output

EnglishCountryRegionName	EnglishProductCategoryName	EnglishProductSubcategoryName	SalesAmount
Australia	Accessories	Bike Racks	$1,800.00
Australia	Accessories	Bike Stands	$5,247.00
Australia	Accessories	Bottles and Cages	$4,635.53
Australia	Accessories	Cleaners	$739.35
Australia	Accessories	Fenders	$3,077.20
Australia	Accessories	Helmets	$18,229.79
Australia	Accessories	Hydration Packs	$4,399.20
Australia	Accessories	Tires and Tubes	$19,253.40
Australia	Bikes	Mountain Bikes	$1,155,979.53
Australia	Bikes	Road Bikes	$1,435,419.37
Australia	Bikes	Touring Bikes	$356,390.58
Australia	Clothing	Caps	$1,519.31

Language Options: MDX

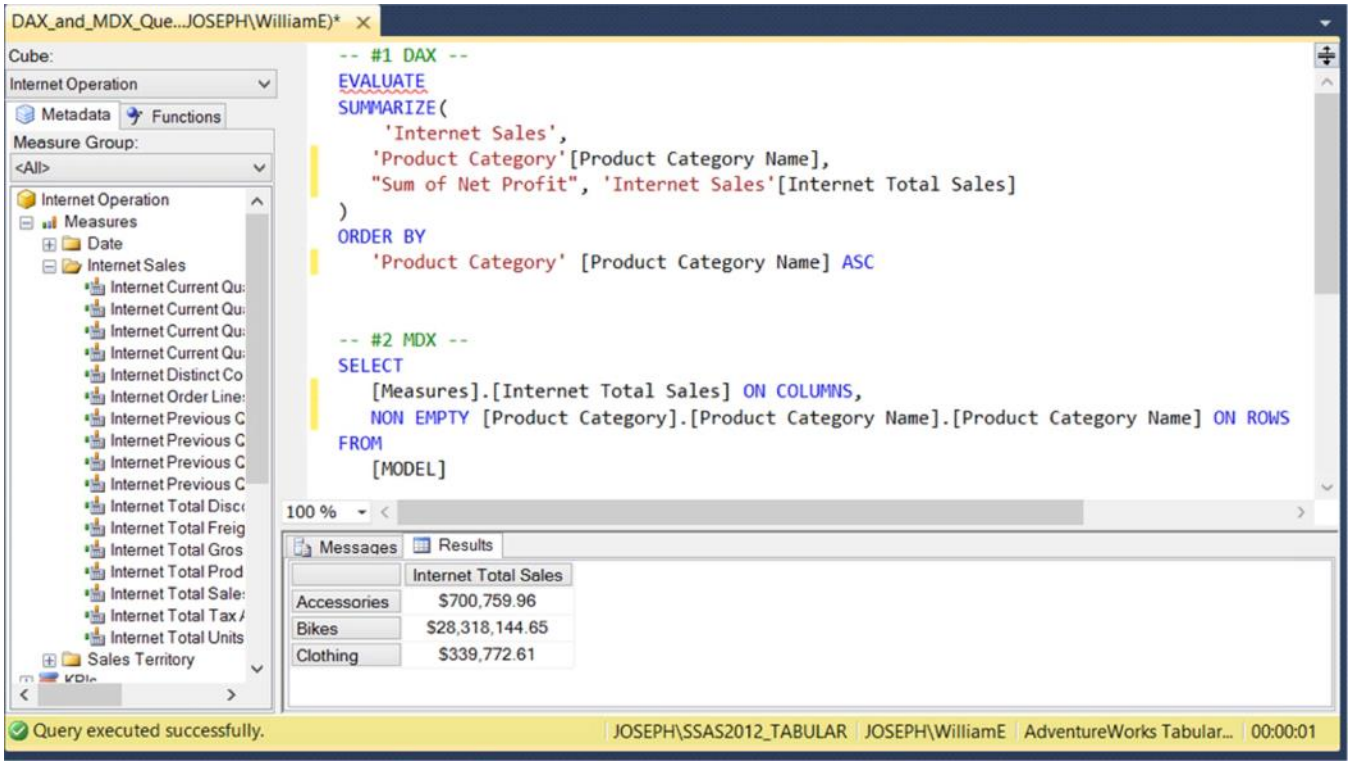
Example: Excel PivotTable

Tabular model via exposed Multidimensional Model



Language Options … and Editors

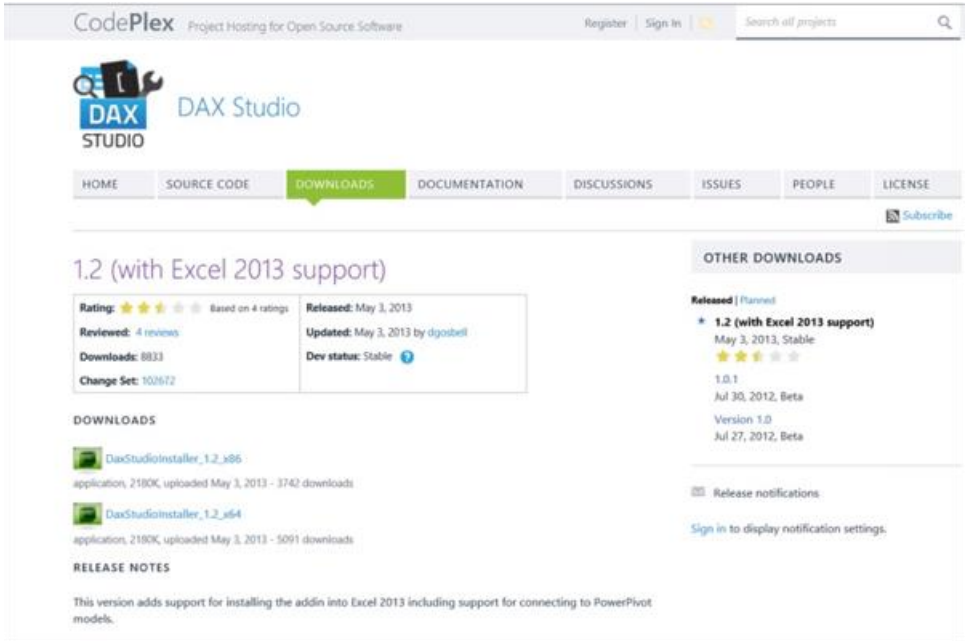
Query Editor: SQL Server Management Studio (SSMS)



- Can query with both DAX and MDX
- Query Results appear as cellsets

Language Options … and Editors

Query Editor: DAX Studio

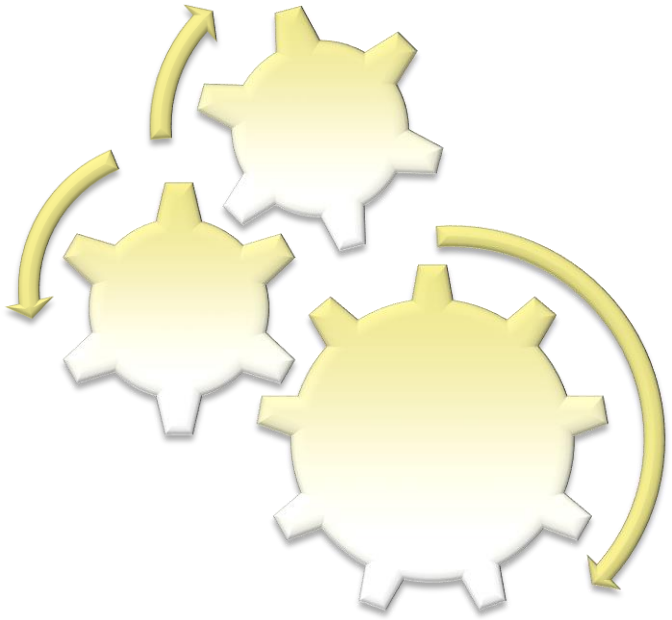


- **CodePlex Freeware**

http://daxstudio.codeplex.com/releases/view/105827

- **Can be used against both Tabular and PowerPivot Models**
- **Excellent learning environment for DAX**

Querying SSAS 2012 Tabular

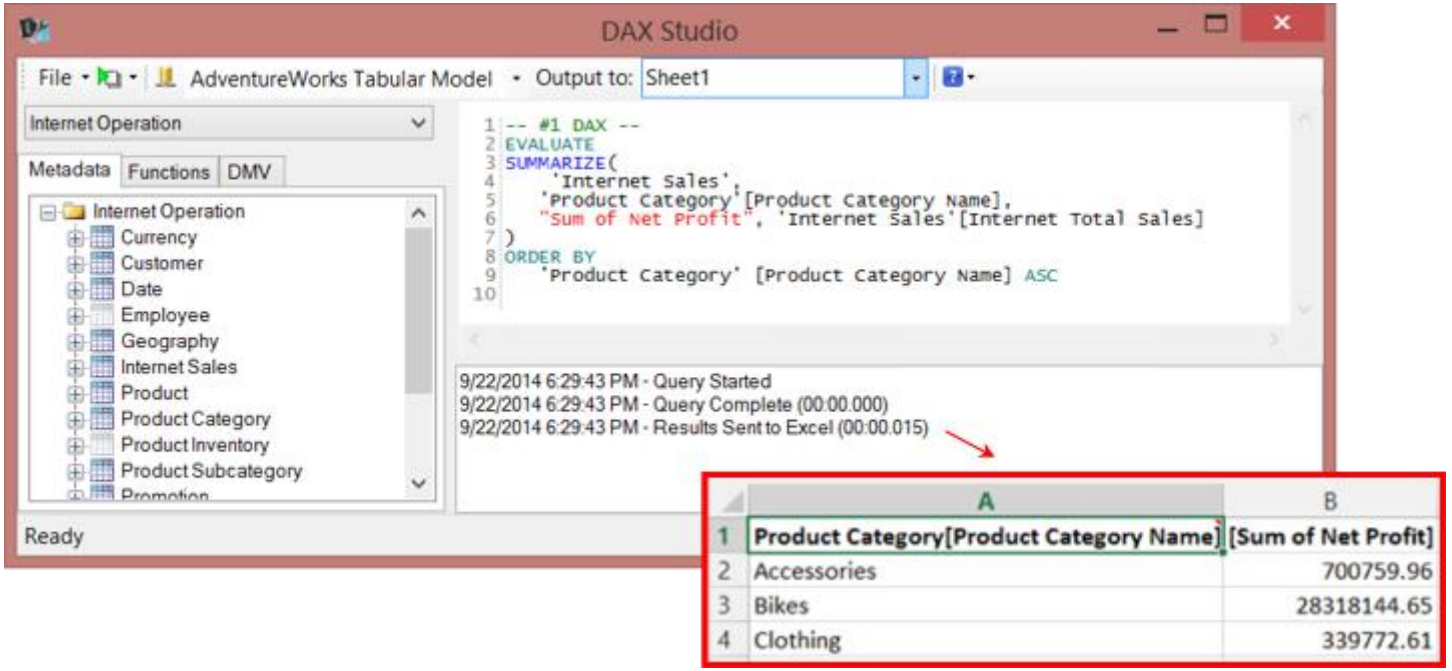


Let's Take a Look …

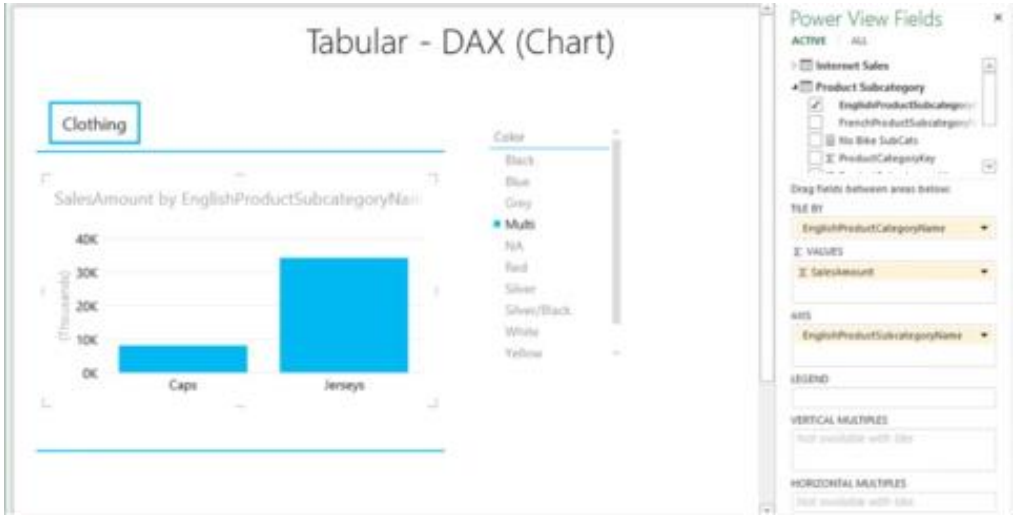
Perform a Basic DAX Query with DAX Studio in Excel

Querying Tabular (DAX) With Excel

- With Excel (DAX Studio)



- With Excel (Power View)



Querying Tabular With Excel

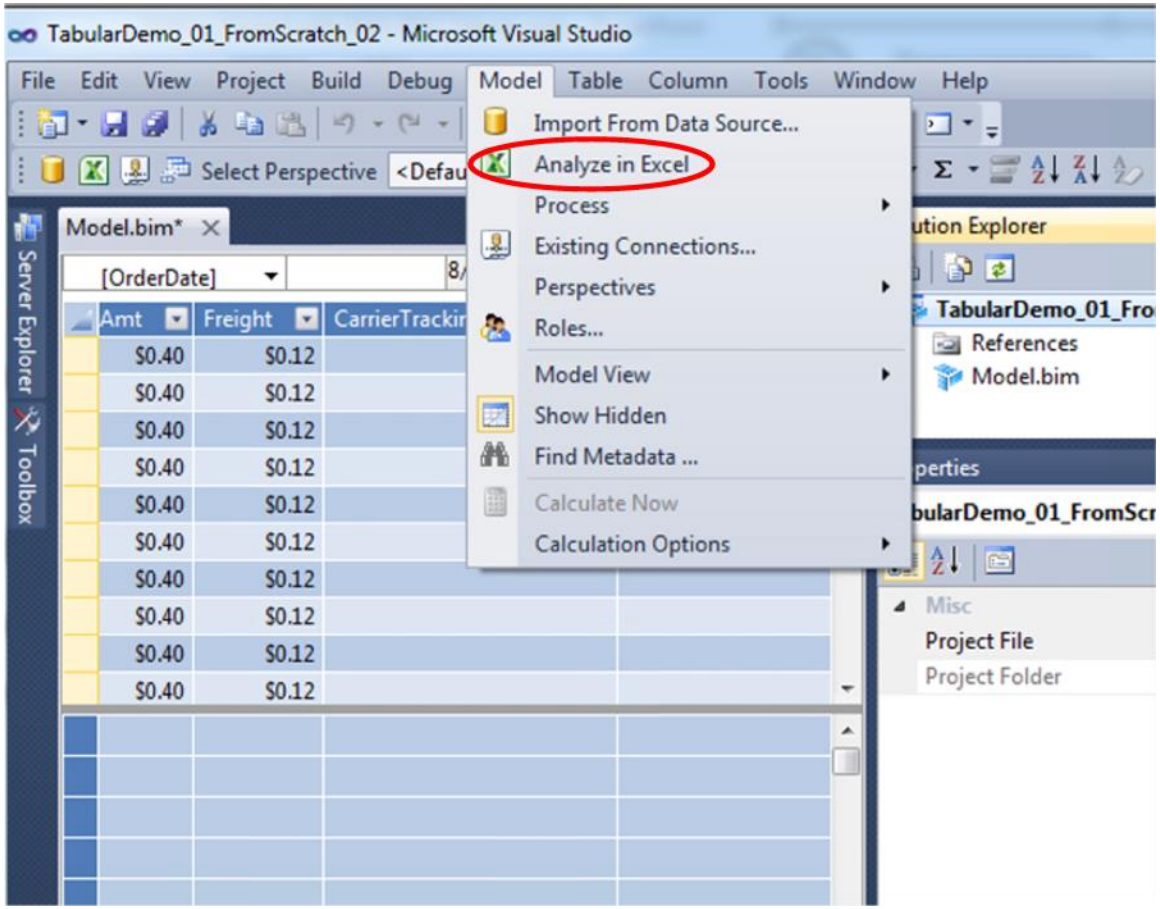
Query a Tabular Model with Excel: Two Most Basic Ways to Launch

- **"Browse" from SQL Server Data Tools ("SSDT")**
- **From Excel**

Querying Tabular With Excel …

Query ("Browse") a Tabular Model with Excel, from SSDT:

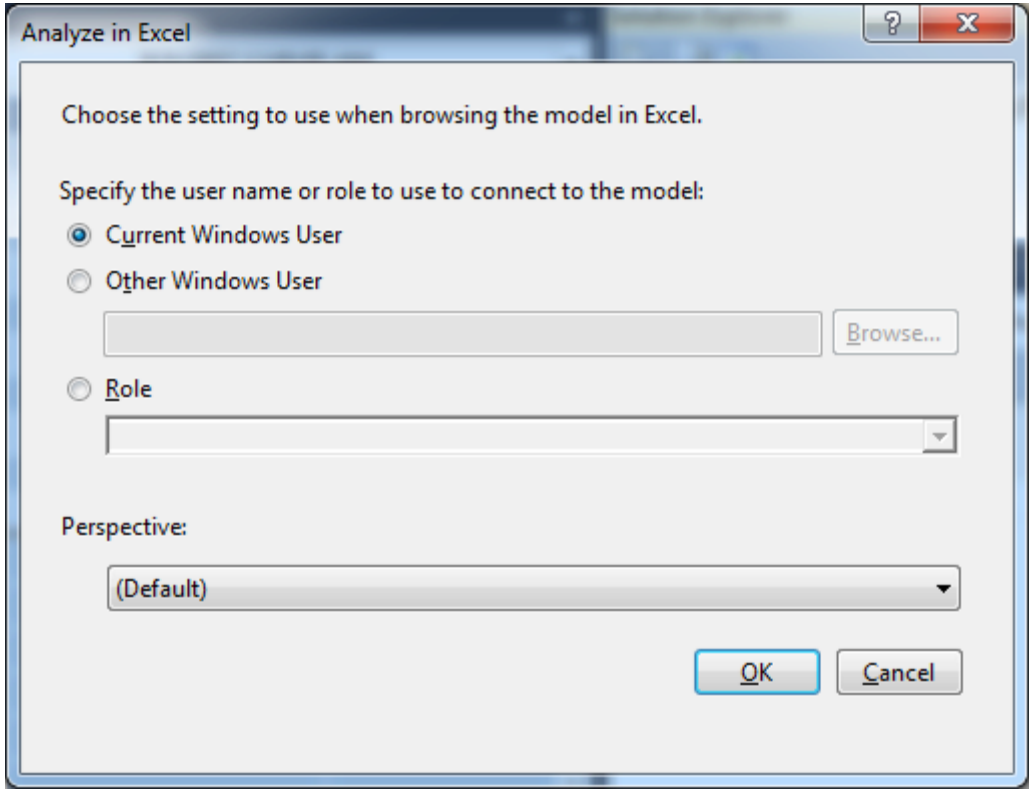
- **Connect to the Model**



Querying Tabular With Excel …

Query (“Browse”) a Tabular Model with Excel, from SSDT:

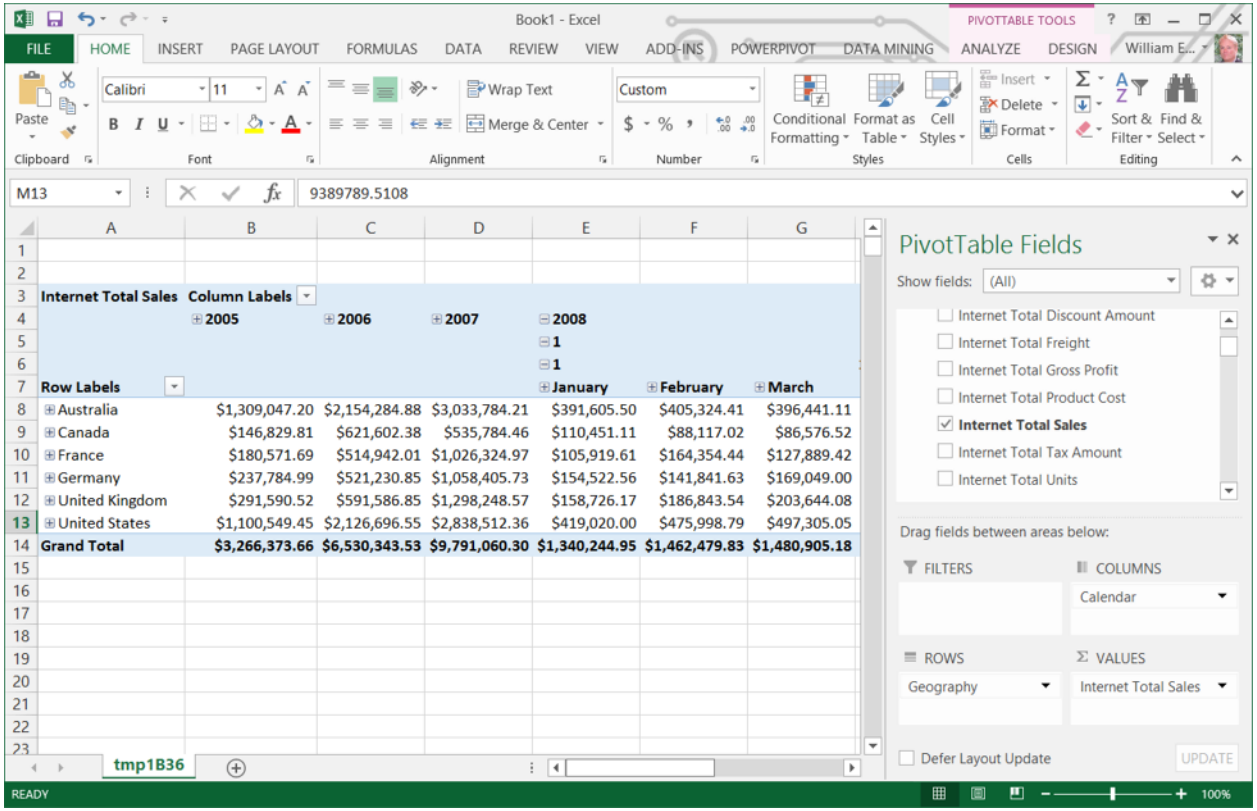
- **Provide Authentication**



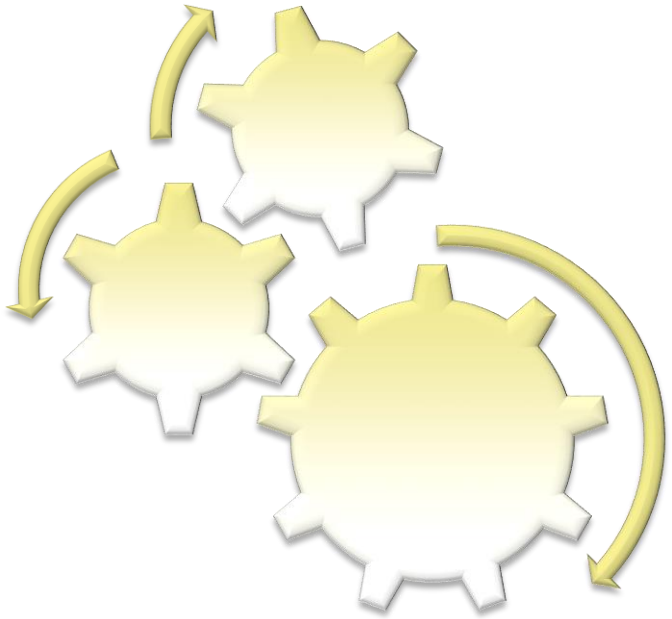
Querying Tabular With Excel …

Query ("Browse") a Tabular Model with Excel, from SSDT:

- Excel Opens
- Automatically creates PivotTable with connection



Querying Tabular With Excel …



Let's Take a Look:

Query a Tabular Model with Excel – SSDT Browse …

Querying Tabular With Excel …

Query a Tabular Model with Excel, from Excel:

- **Connect to the Deployed Database**
- **Work with PivotTables**

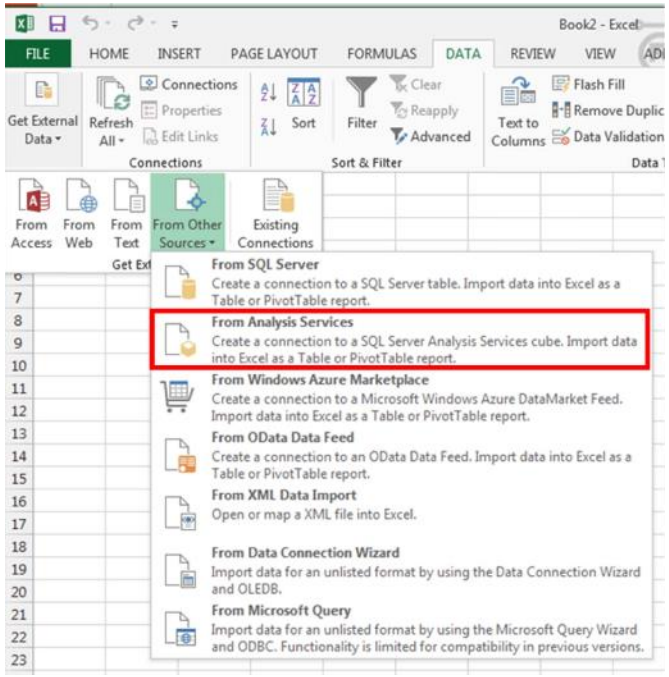
Querying Tabular With Excel - From Excel …

Connect to the Deployed Database …

- **From new worksheet, Data tab:**

From Get External Data → From Other Sources

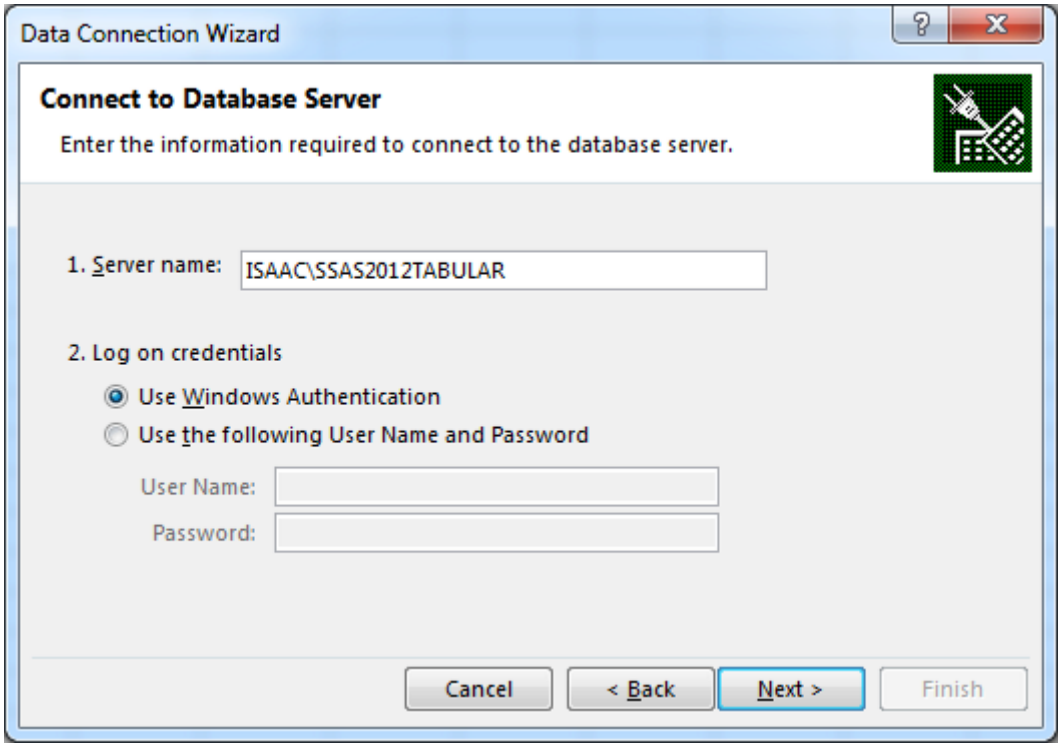
From Other Sources → From Analysis Services



Querying Tabular With Excel - From Excel …

Connect to the Deployed Database …

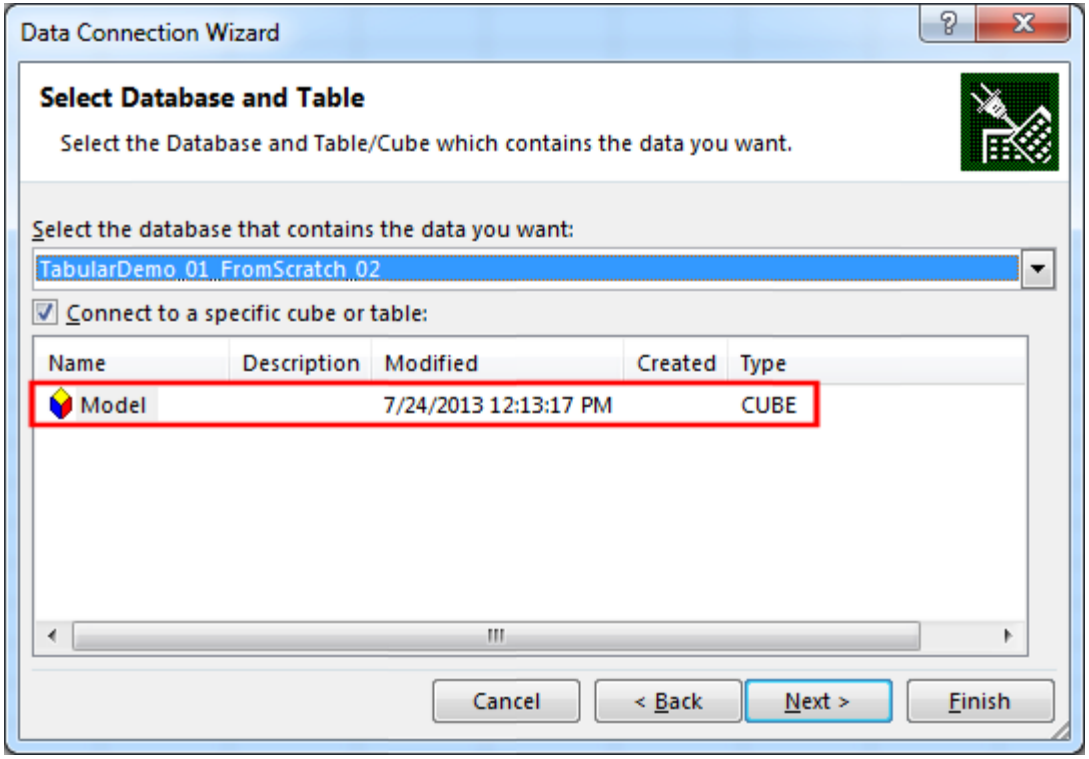
- Connect to Database Server



Querying Tabular With Excel - From Excel …

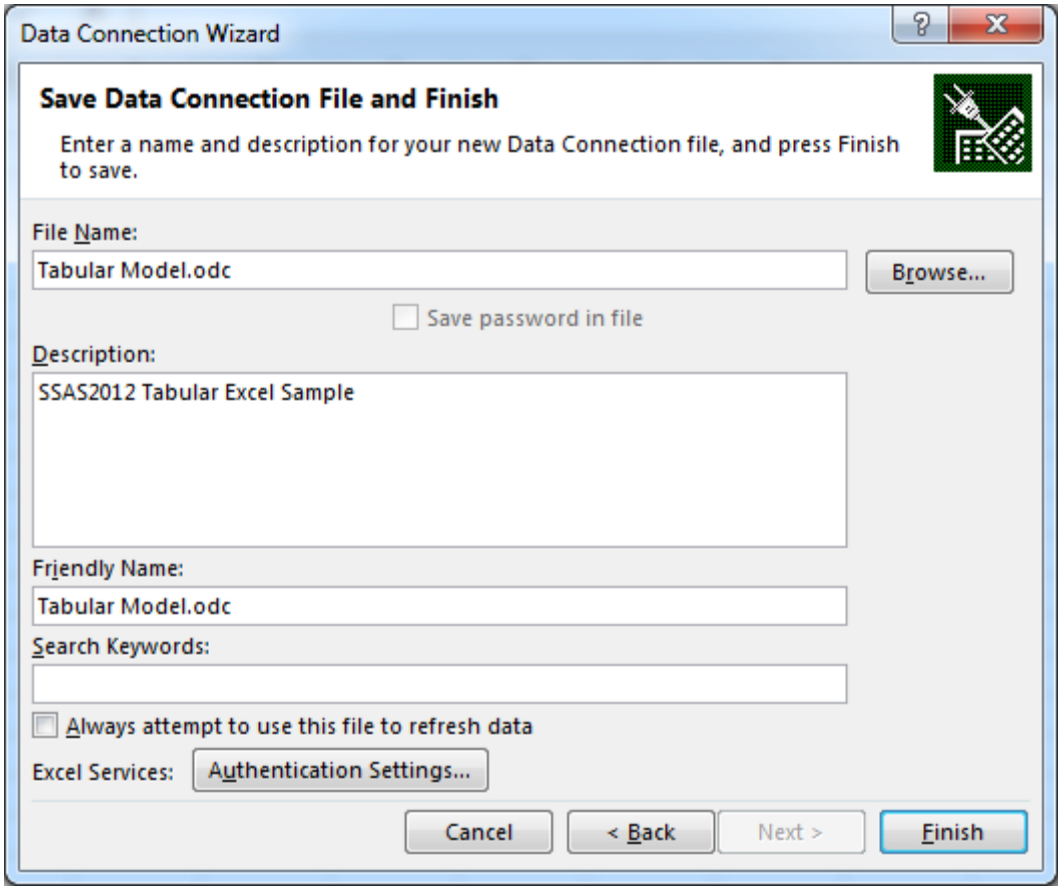
Connect to the Deployed Database …

- Select Database and Tables



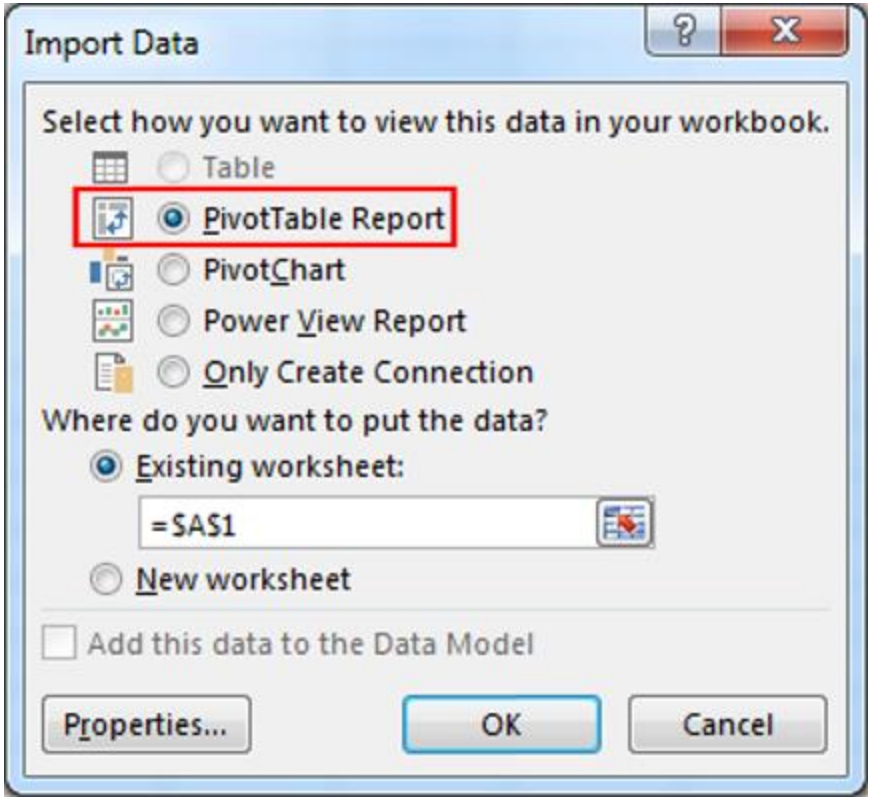
Querying Tabular With Excel - From Excel …

Save Data Connection File and Finish …

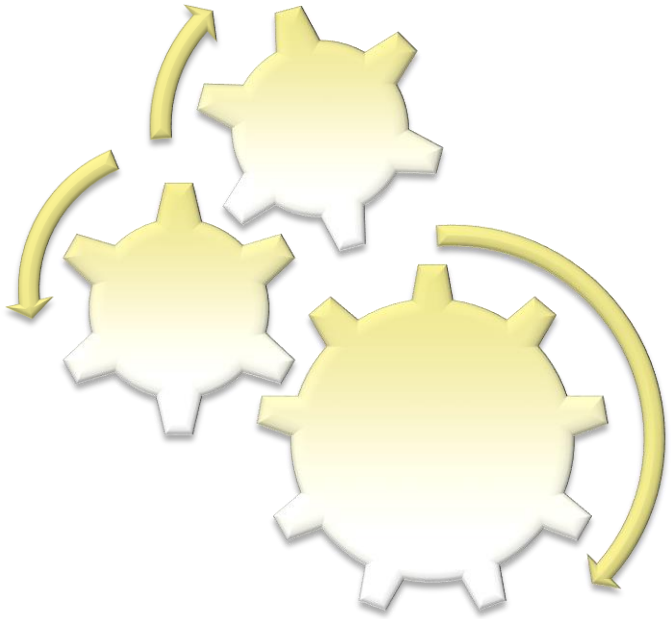


Querying Tabular With Excel - From Excel …

Designate as "PivotTable Report" …



Querying Tabular With Excel - From Excel …



Let's Take a Look:

Connect from Freestanding Excel to a Tabular Model …

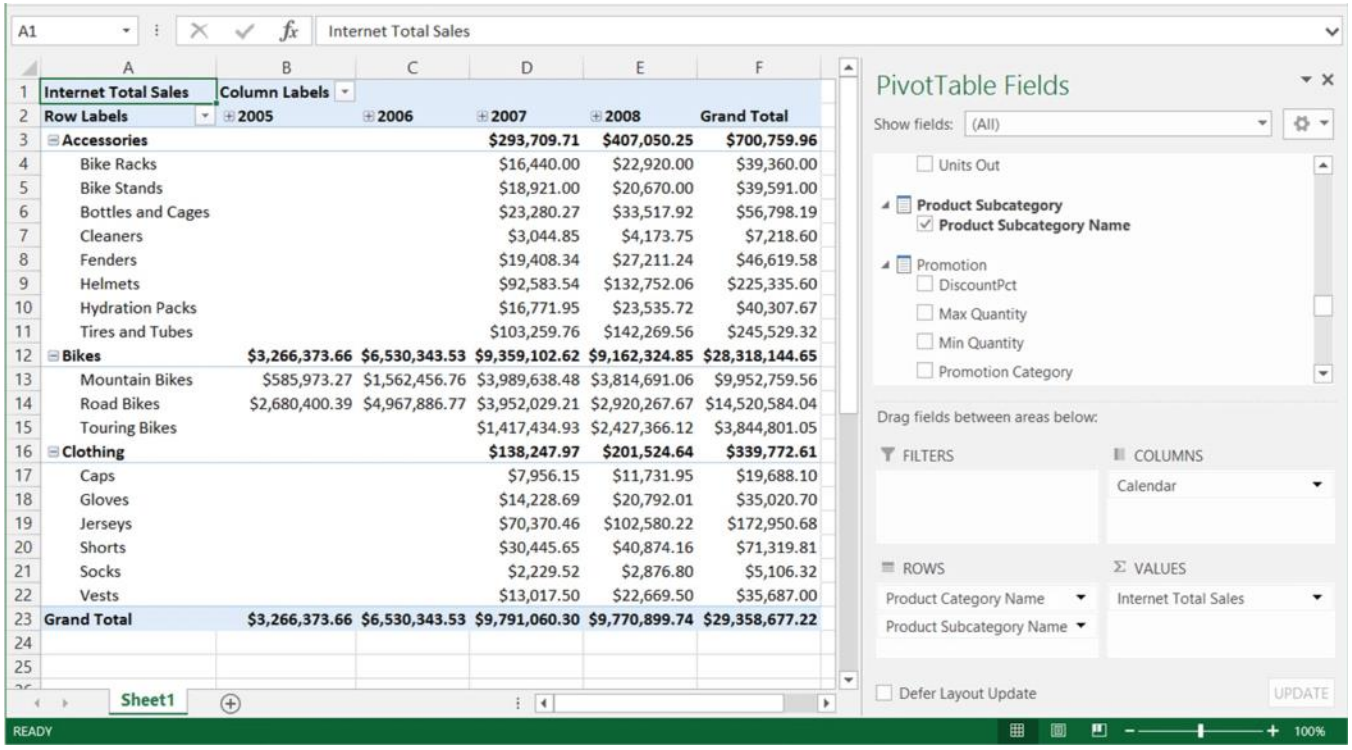
Querying Tabular With Excel - From Excel …

Work with PivotTables

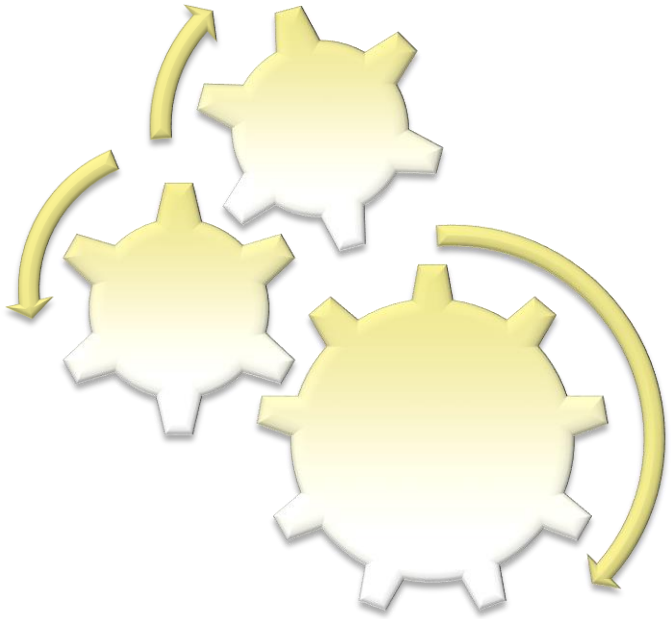
- Create a basic PivotTable
- Employ Slicers
- Sort and Filter Rows and Columns
- Work with Named Sets
- Use Excel Cube Formulas

Querying Tabular With Excel - From Excel …

Create a Basic PivotTable …



Querying Tabular With Excel - From Excel …



Let's Take a Look:

Create Basic PivotTable – with the Following Steps …

Querying Tabular With Excel - From Excel …

Create a Basic PivotTable …

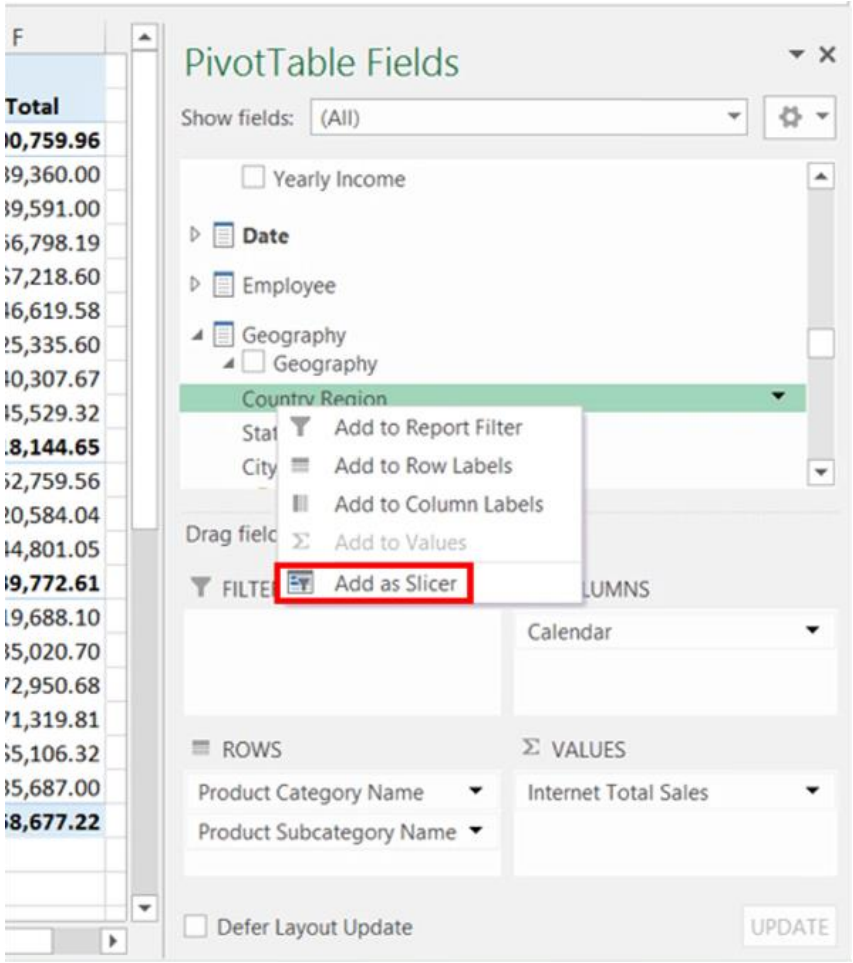
ADD:	TO:
Internet Sales.Internet Total Sales	Values
Date.Calendar →Year (Hierarchy)	Columns
Product Category.Product Category Name	Rows
Product Subcategory.Product Subcategory Name	Rows

Querying Tabular With Excel - From Excel …

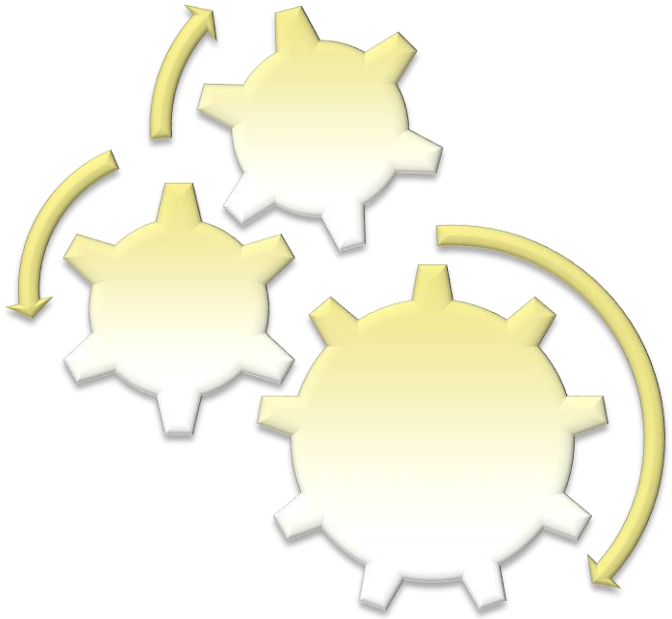
Employ Slicers …

TO SLICERS:

- Geography.Country Region Name
- Geography.State Province Name



Querying Tabular With Excel - From Excel …

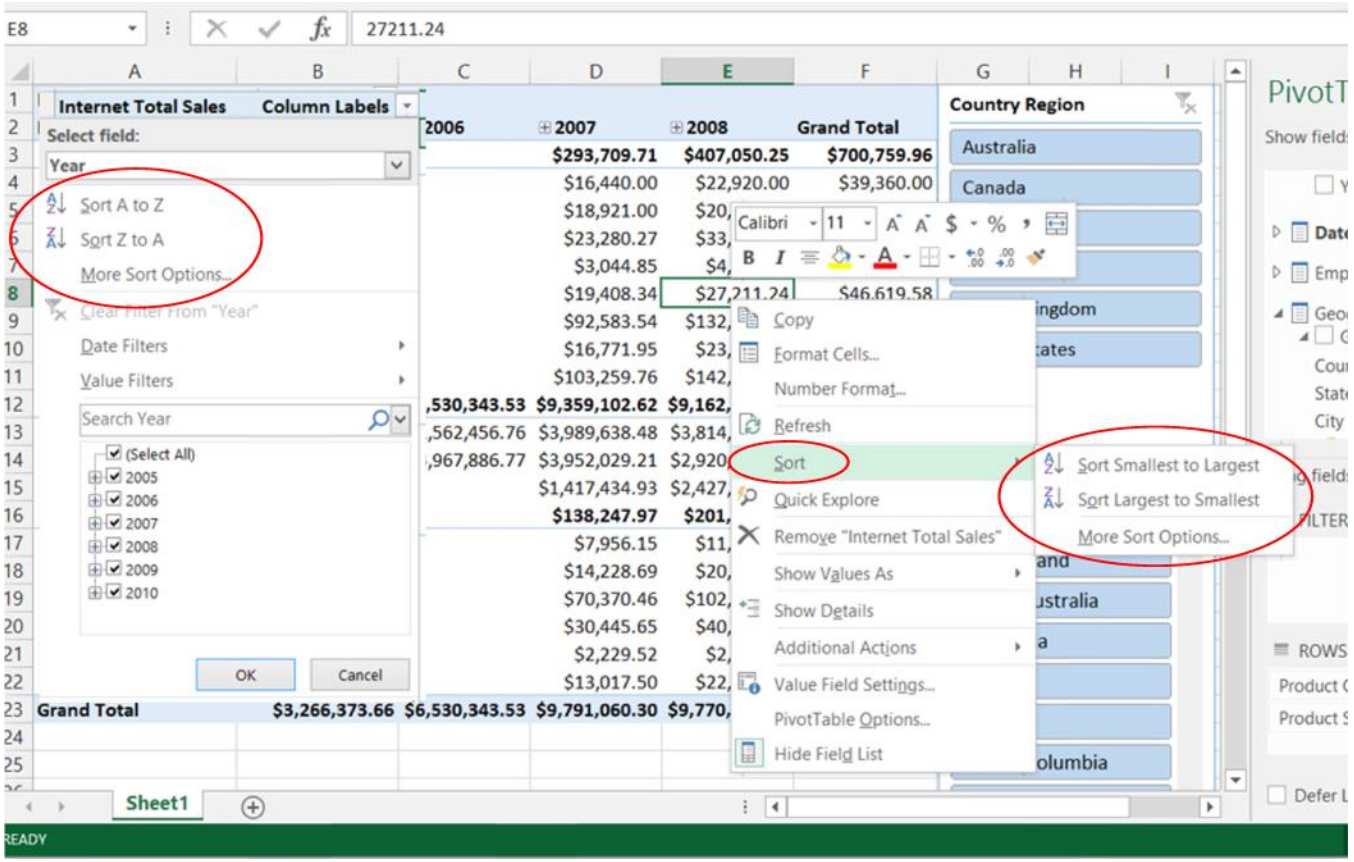


Let's Take a Look:

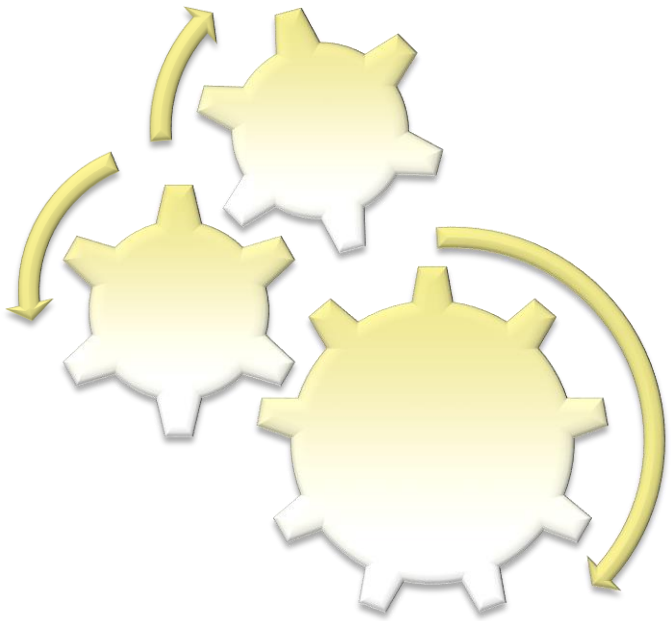
Employ Slicers …

Querying Tabular With Excel - From Excel …

Sort and Filter Rows and Columns



Querying Tabular With Excel - From Excel …



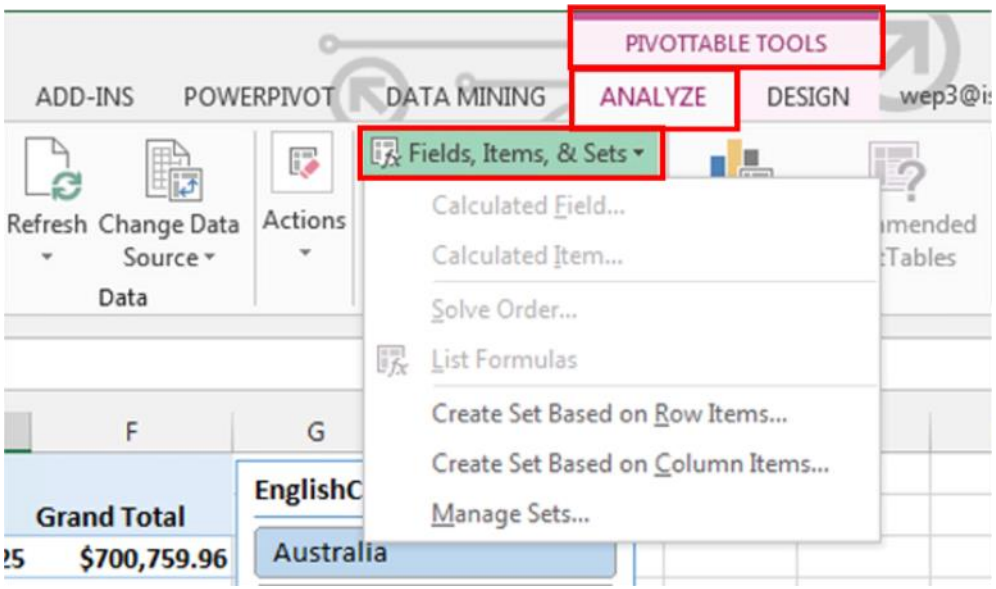
Let's Take a Look:

Sort and Filter Rows and Columns …

Querying Tabular With Excel - From Excel …

Work with Named Sets …

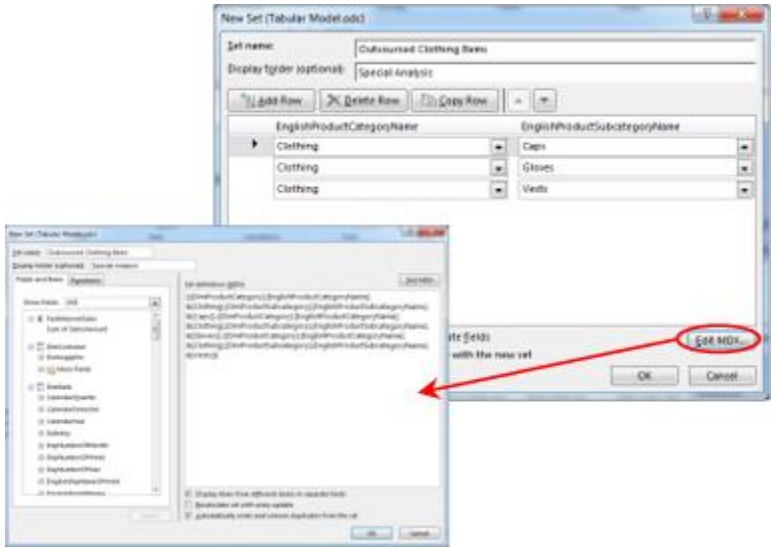
- **From PivotTables tab, PivotTable Tools → Analyze**
- **Select Fields, Items, & Sets dropdown selector …**
- **Select Create Set Based on Row / Column Items …**



Querying Tabular With Excel - From Excel …

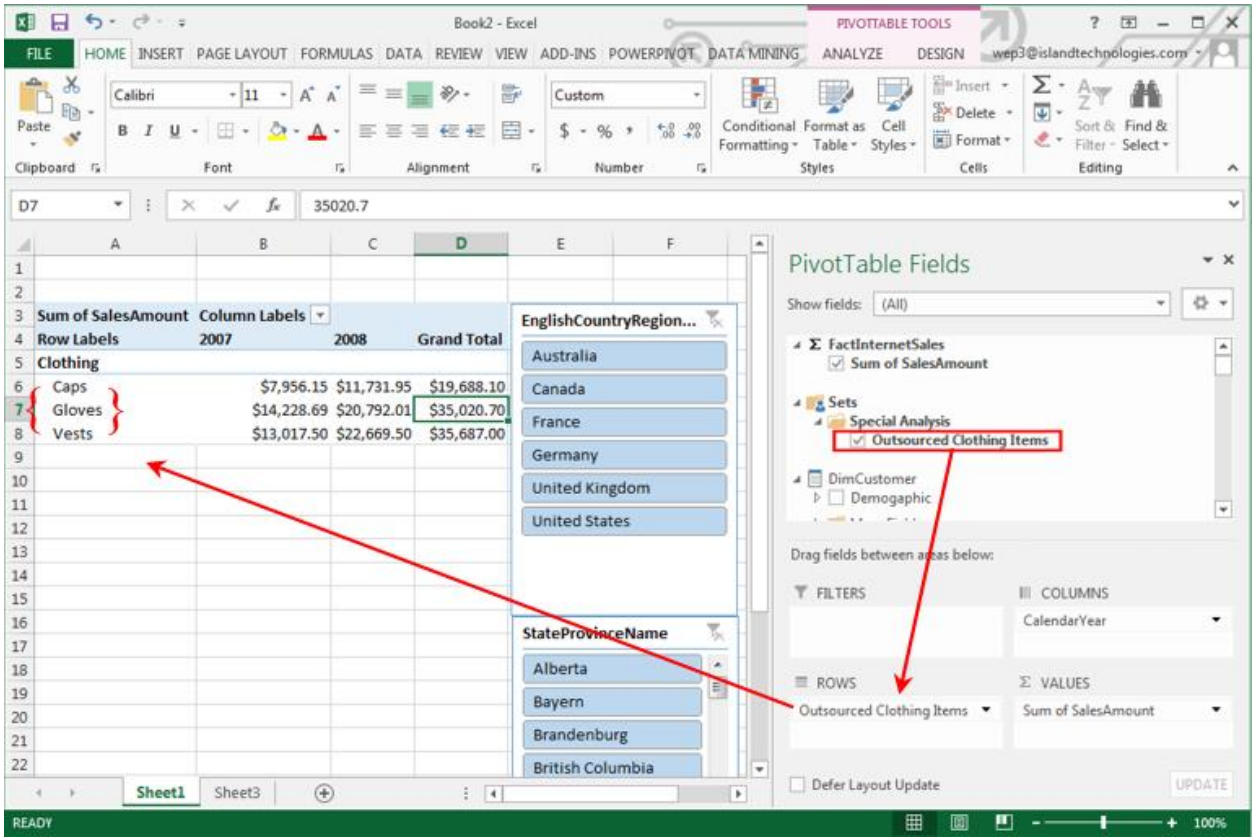
Work with Named Sets …

- **Select Set Membership via "Add / Delete" or**
- **Shift to direct MDX if need more sophistication …**

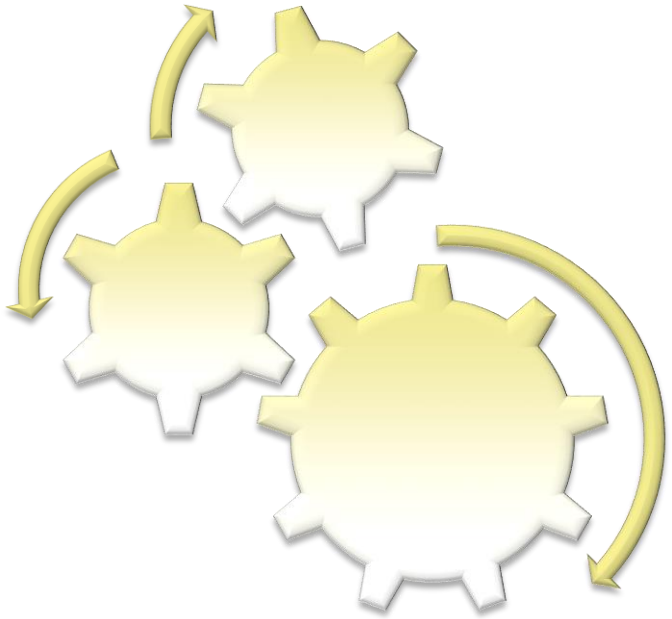


Querying Tabular With Excel - From Excel …

Work with Named Sets …



Querying Tabular With Excel - From Excel …



Let's Take a Look:

Named Set in a PivotTable …

Querying Tabular With Excel - From Excel …

Use Excel Cube Formulas to extract single cell data from a cube

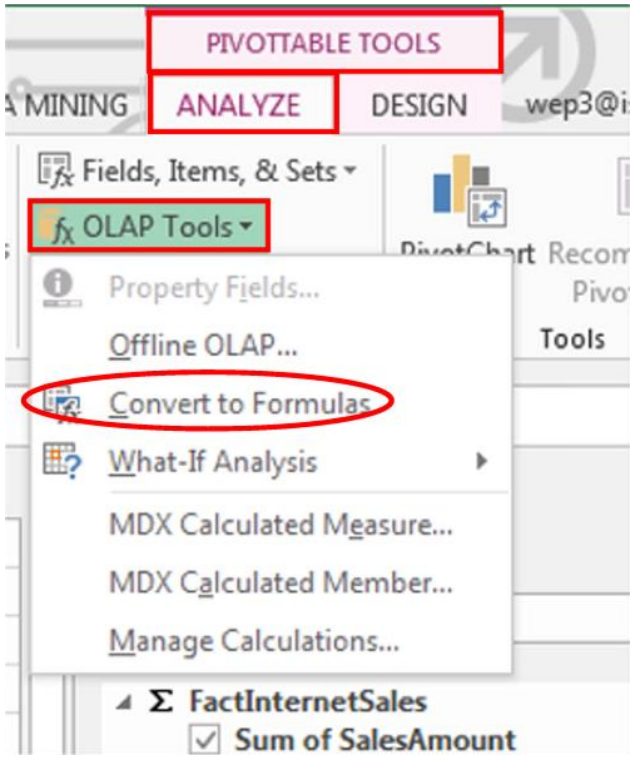
To gain an understanding of how a Cube Formula works:

Convert a PivotTable to formula-containing cells:

PivotTable Tools → Analyze →

OLAP Tools →

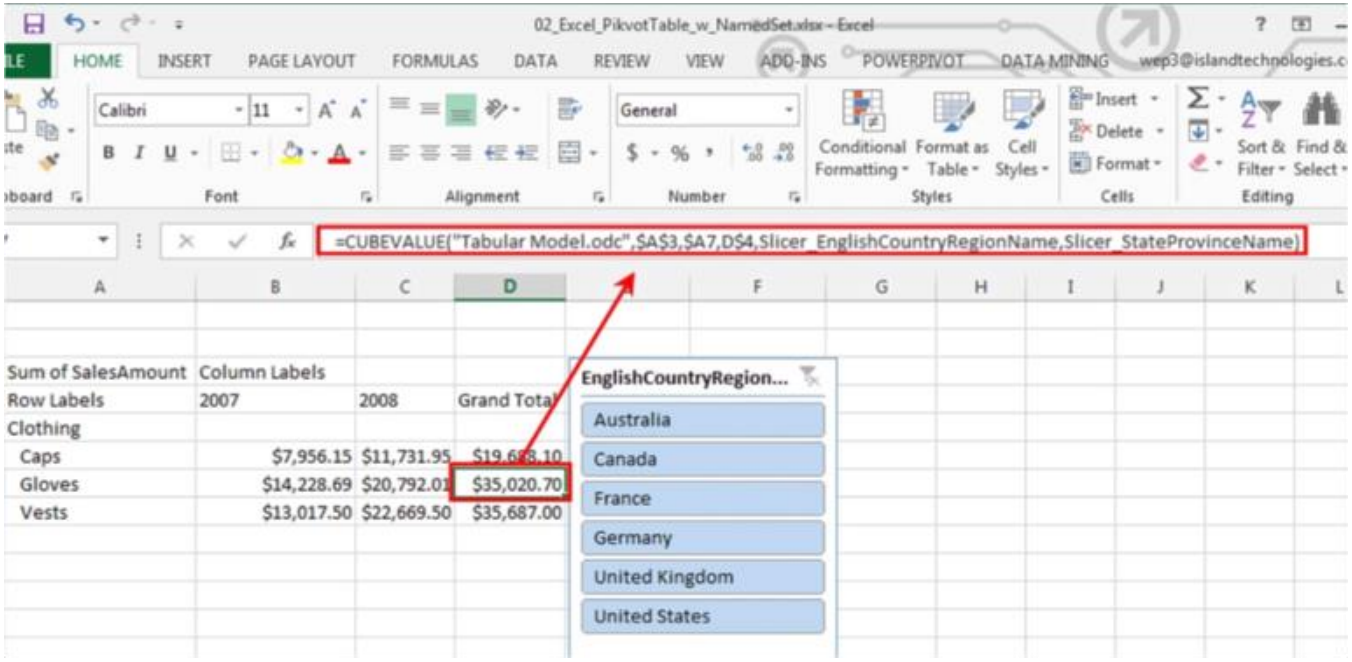
Convert to Formulas



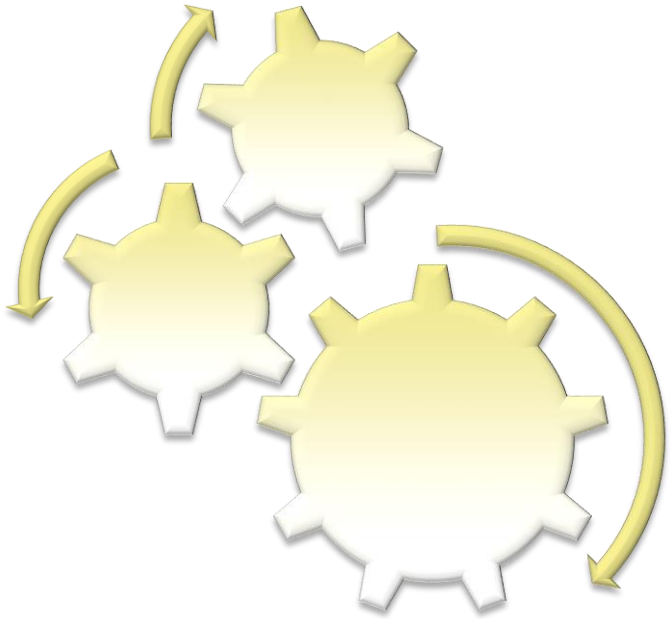
Querying Tabular With Excel - From Excel …

Use Excel Cube Formulas …

- PivotTable cells are converted to underlying formulas – no longer a standard PivotTable …



Querying Tabular With Excel - From Excel …



Let's Take a Look:

Generate Excel Cube Formulas …

Querying Tabular With Excel - From Excel …

Use Excel Cube Formulas …

- **Cube Formulas advantages**
- **Cube Formulas disadvantages:**

Querying Tabular With Excel - From Power View …

Query a Tabular Model with Power View

- Connect to a Deployed Tabular Database
- Build a Basic Power View Report
- Add Charts and Slicers

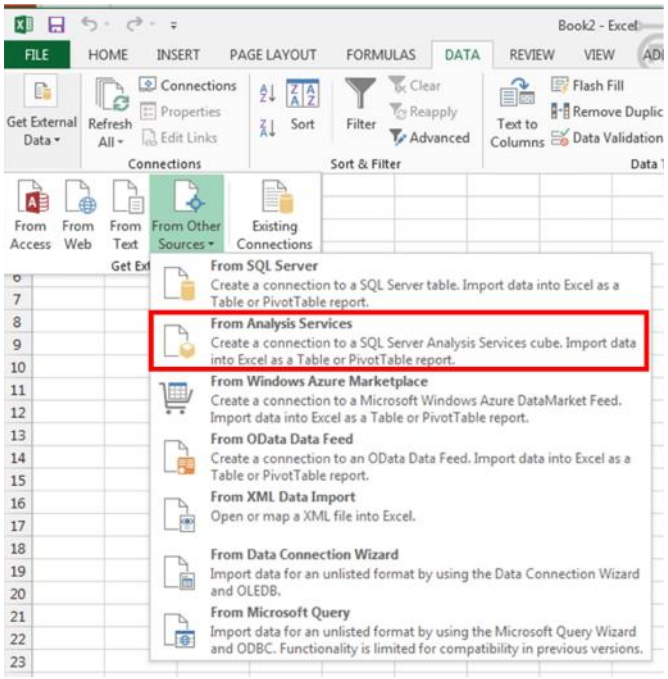
Querying Tabular With Excel - From Power View …

Connect to the Deployed Tabular Database …

- From new worksheet, Data Tab:

  From Other Data Sources →

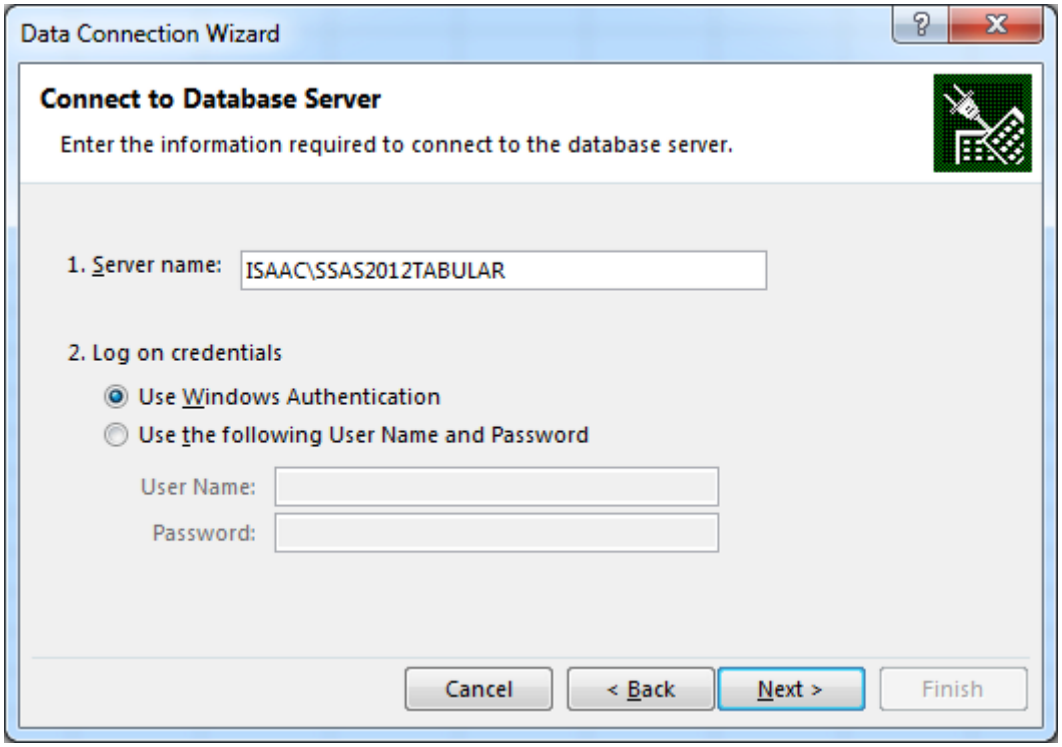
  From Analysis Services



Querying Tabular With Excel - From Power View …

Connect to the Deployed Tabular Database …

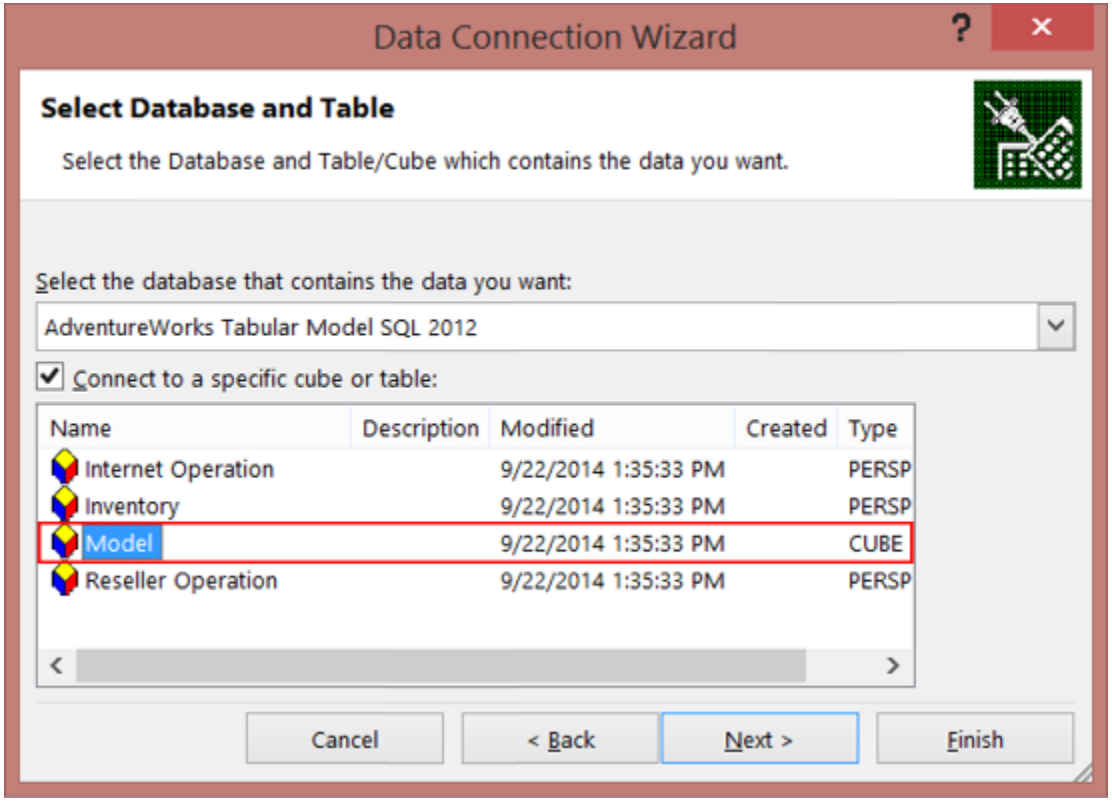
- **Connect to Database Server**
  - Server Name
  - Input Credentials



Querying Tabular With Excel - From Power View …

Connect to the Deployed Tabular Database …

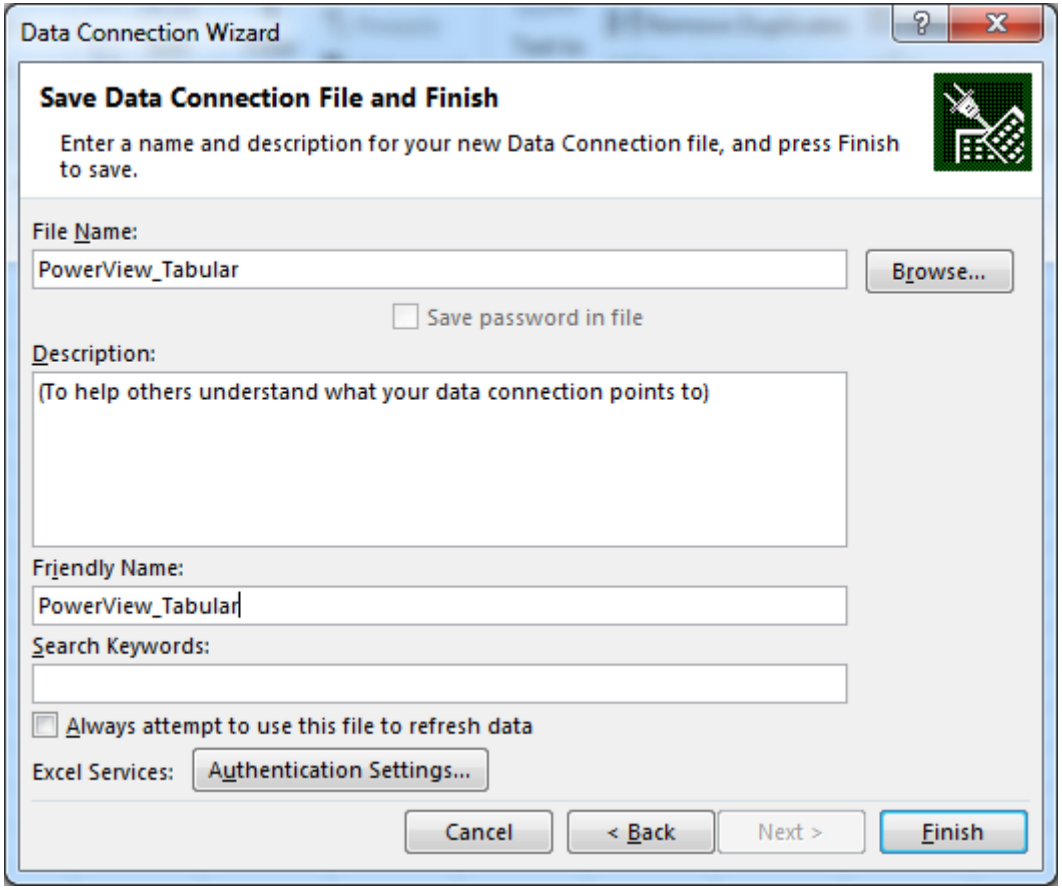
- Select Database and Tables



Querying Tabular With Excel - From Power View …

Connect to the Deployed Tabular Database …

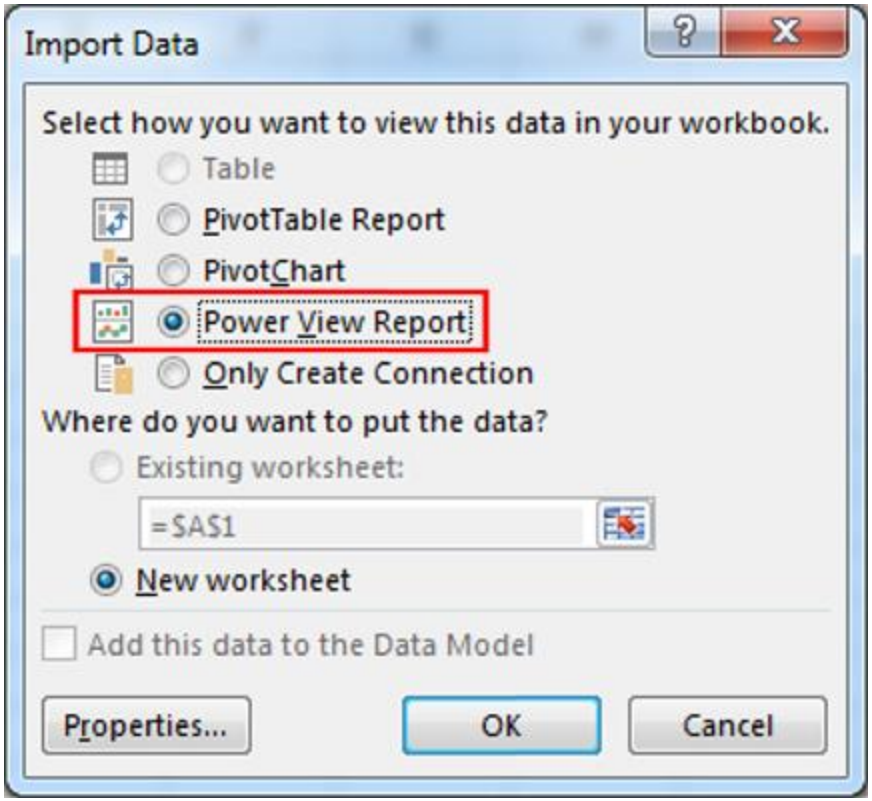
- Save Data Connection File and Finish



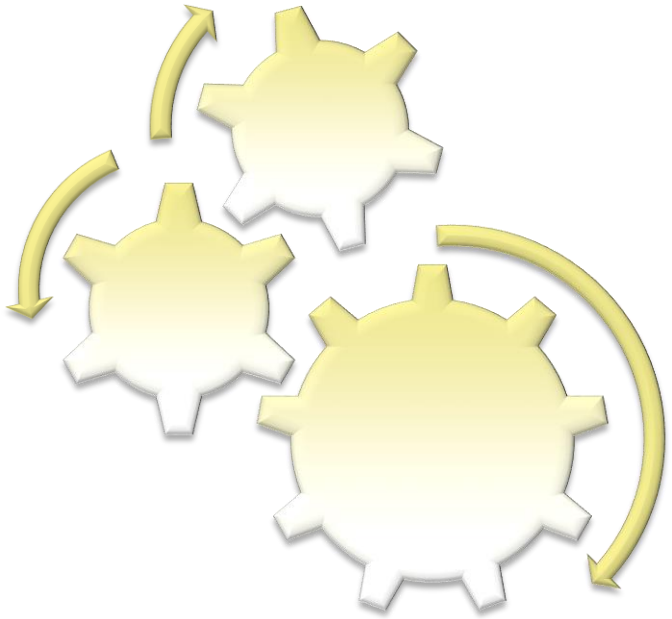
Querying Tabular With Excel - From Power View …

Connect to the Deployed Tabular Database …

- Designate as "Power View Report" …



Querying Tabular With Excel - From Power View …



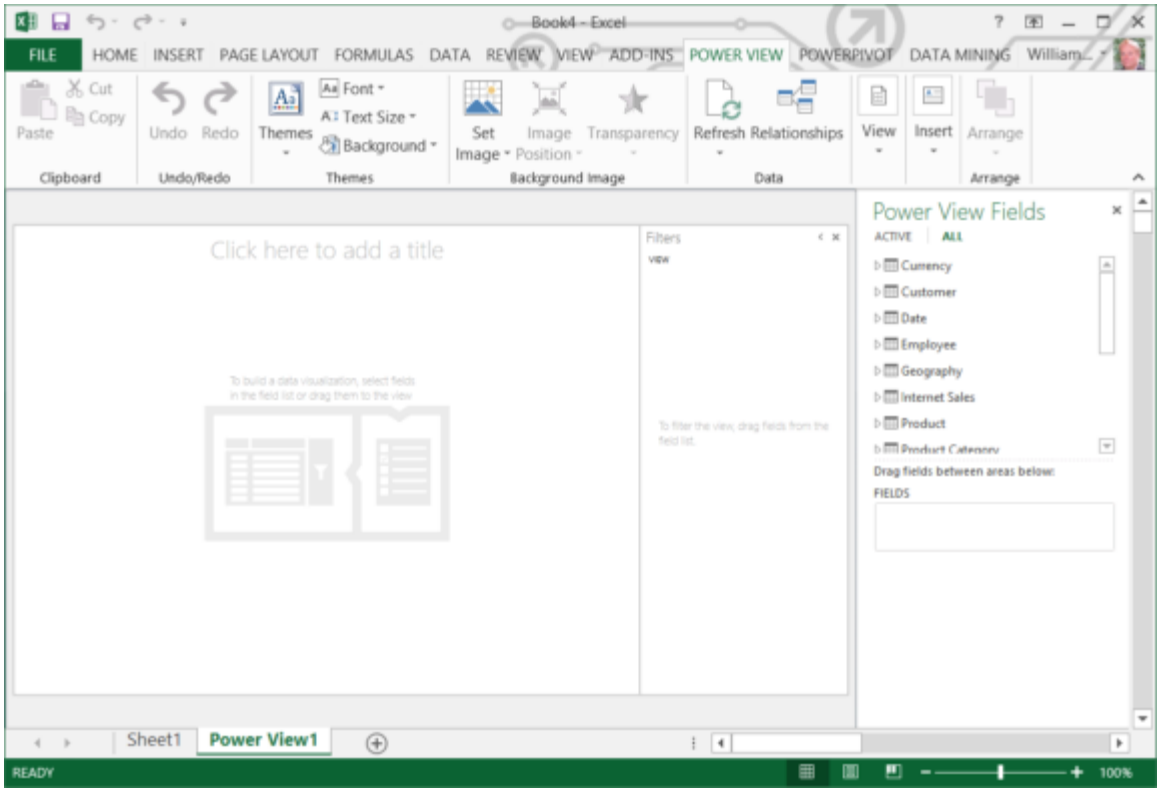
Let's Take a Look:

Connect to a Deployed Tabular Data Base with Power View …

Querying Tabular With Excel - From Power View …

Build a Basic Power View Report …

- Upon finishing Connection creation steps, Power View opens:



Querying Tabular With Excel - From Power View …

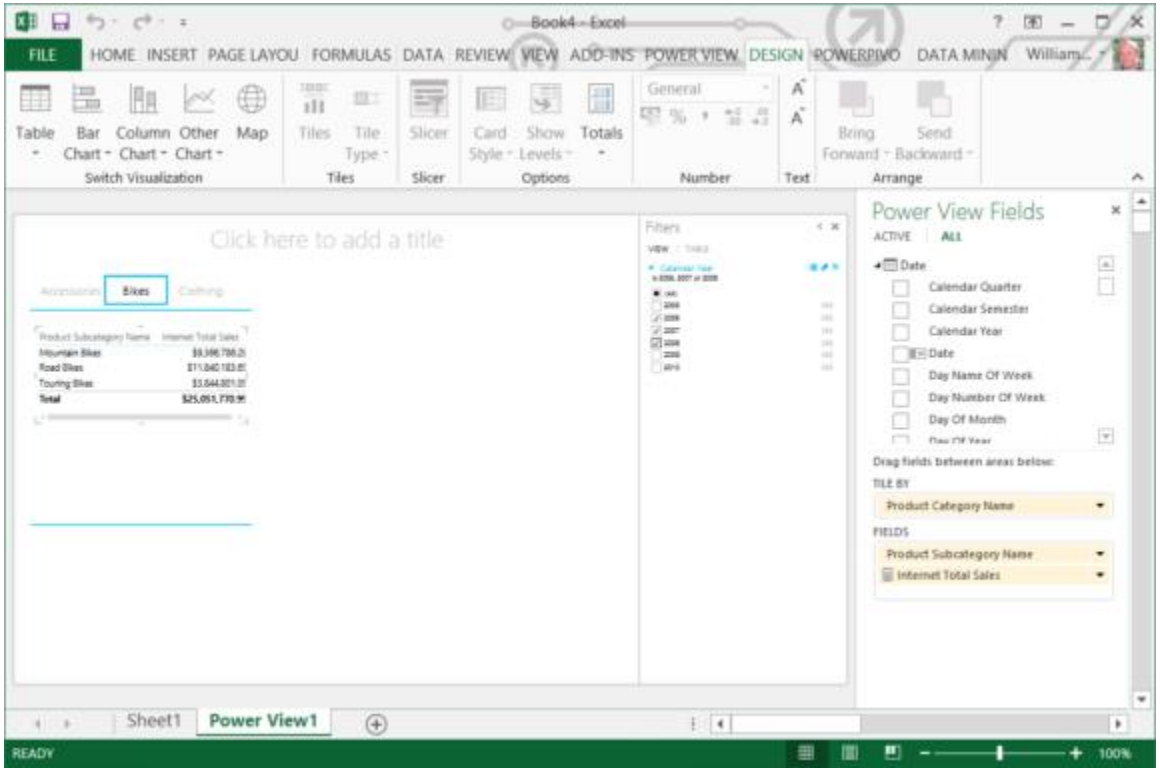
Build a Basic Power View Report …

ADD:	TO:
Product Subcategory.Product Subcategory Name	Fields
Internet Sales.Internet Total Sales	Fields
Product Category.Product Category Name	Tile by
Date.Calendar Year	Filters

Querying Tabular With Excel - From Power View …

Build a Basic Power View Report …

- Select some Calendar Year checkboxes in the Filters section



Querying Tabular With Excel - From Power View …

Add Charts and Slicers …

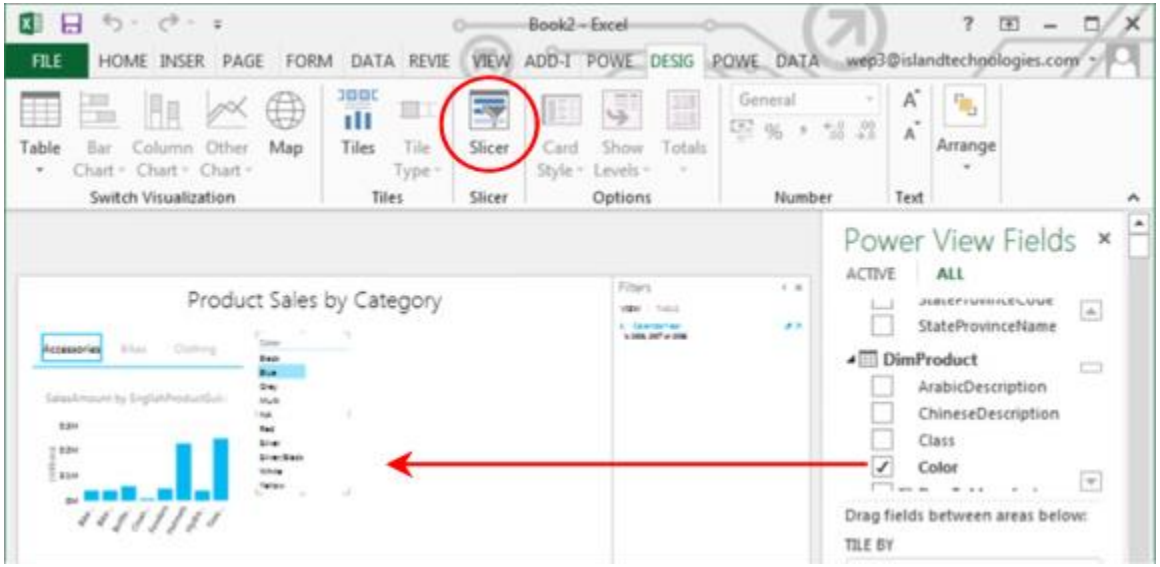
- Click a cell within the table
- Select Column Chart → Stacked Columns

  Chart replaces table …

Querying Tabular With Excel - From Power View …

Add Charts and Slicers …

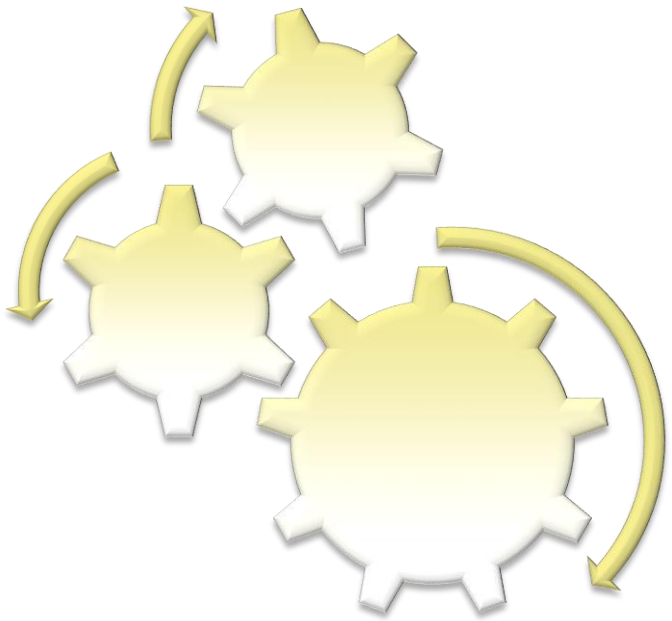
- Drag Product.Color to the blank area to the right of the new Stacked Columns Chart
- Click the new table, and click the Slicers button in the Power view ribbon



Querying Tabular With Excel - From Power View …

The new table becomes a working Slicer …

Querying Tabular With Excel - From Power View …



Let's Take a Look:

Chart and Slicer in Power View …

Querying Tabular With Excel - From Power View …

Add another Chart Example

… Animated Scatter Chart

- **Create a new tab.**
- **Create a new table:**

ADD:	TO:
Product Subcategory.Product Subcategory Name	Fields
Internet Sales.Order Date	Fields
Internet Sales.Sales Amount	Fields

- **Click inside new table and select Other Chart → Scatter**

Querying Tabular With Excel - From Power View …

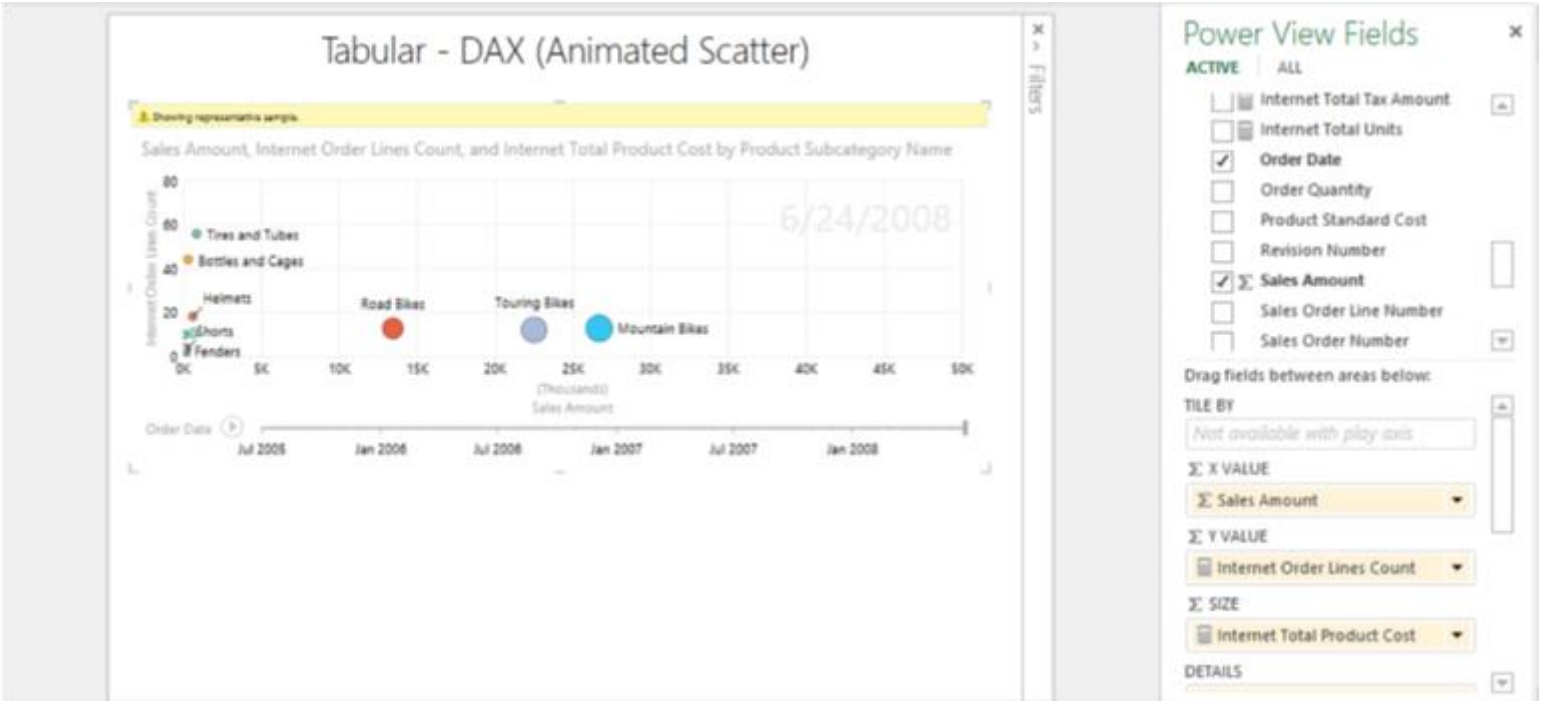
… Animated Scatter Chart

ADD:	TO:
Internet Sales.Order Lines Count (Internet Sales.Sales Amount is "X Value")	"Y Value"
Internet Sales.Total Product Standard Cost	Size

- ***Click the "Pop Out" icon in the upper right corner***
- ***Click the "Play" button to run animation over dates***

Querying Tabular With Excel - From Power View …

Animated Scatter Chart is added …



Summary

- Understanding Language Options and Editors
- Querying Tabular With Excel